The Feedback Effect: Does Exposure to Interviewer Feedback Affect an Observer's Perception of Veracity and Guilt?

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The Feedback Effect: Does Exposure to Interviewer Feedback Affect an Observer’s Perception of Veracity and Guilt?

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New York, NY
# Feedback Effect

## Table of Contents

Introduction.................................................................................................................. 7

The Reid technique....................................................................................................... 8

Types of Feedback........................................................................................................ 9

Deception Detection..................................................................................................... 10

Feedback Effect........................................................................................................... 11

Current Study............................................................................................................... 14

Methods- Part I............................................................................................................. 15

   Design....................................................................................................................... 16

   Participant Suspects................................................................................................. 17

   Materials................................................................................................................... 17

   Procedure.................................................................................................................. 18

Methods-Part II............................................................................................................ 21

   Design....................................................................................................................... 21

   Participant Observers.............................................................................................. 21

   Materials................................................................................................................... 22

   Procedure.................................................................................................................. 22

Results.......................................................................................................................... 23

   Part I......................................................................................................................... 24

   Part II....................................................................................................................... 25

      Preliminary Analysis............................................................................................. 25

      Main Analysis....................................................................................................... 26

Discussion..................................................................................................................... 31
Limitations.................................................................34
Conclusions and Implications ........................................36
References......................................................................38
Tables and Figures........................................................44
Appendices..................................................................59
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FEEDBACK EFFECT

Abstract
Historically, assessing deception has been rooted in the belief that a guilty suspect displays signs of anxiety. Based on a suspect’s physical demeanor and other behavioral cues presented during an interrogative session, law enforcement personnel (LEP) will utilize a set of techniques to elicit information about a crime. One such technique is the administration of feedback, which is the verbal assessment of a suspect’s guilt. The issue that stems from administering feedback lies not only in how it is given, but also how it is received and interpreted by others. In a two-part study, the possibility of a “Feedback Effect” was examined. It is the idea that observers will infer deception and overall guilt of a suspect by taking their cues either directly from an interrogator’s feedback (direct pathway) or indirectly from a suspect’s feedback-elicited anxiety (indirect pathway). Participant observers were asked to rate the veracity and ultimate guilt of a suspect. Some of the observers were exposed to feedback (direct pathway) and others were not (indirect pathway). Results from the current study supported the direct pathway of the Feedback Effect, but not the indirect pathway: Observers who were exposed to feedback were more likely to see the suspect as deceptive; those not exposed to the feedback did not. Implications for jury decision-making are discussed.

*Keywords:* police interrogations, interrogation tactics, feedback, social conformity, persuasion techniques.
The Feedback Effect: Does Exposure to Interviewer Feedback Affect an Observer’s Perception of Veracity and Guilt?

On January 13, 1998, Hae Min Lee was murdered. She was a seventeen-year old girl from Baltimore County, Maryland. Speculation fell onto Lee’s ex-boyfriend, Adnan Syed, who was charged with her murder in April 1998. During Syed’s trial, which began in January of 2000, the state provided jurors with his interrogation videos. The videos were flanked with negative feedback from LEP asserting their belief in Syed’s guilt. Relatedly, the state produced LEP as witnesses who, over the course of two weeks, repeatedly asserted their belief in Syed’s guilt (Koenig, 2014). Jury deliberation lasted less than two hours and, in a unanimous vote, Syed was convicted of Lee’s murder. Years after Syed was convicted, some of the jurors were interviewed about the case. Many of the jurors believed that the statements produced at trial by LEP were a major factor in determining Syed’s guilt. Other jurors based Syed’s guilt on his behavior during trial (i.e. gaze aversion, holding his head low), disregarding how the statements of LEP may have altered it (Koenig, 2014).

The swiftness with which the jury members convicted Syed serves as an anecdotal illustration of the impact feedback can have on an observer’s perception of a suspect’s guilt, a hypothesis we call the Feedback Effect. The present study aimed to evaluate this effect by analyzing different types of feedback and determine whether exposure to such feedback would have an effect on an observer’s perception of a suspect’s guilt. First, the Reid technique is discussed and how its methods, namely the administration of feedback, can induce body altering stress in suspects, which LEP attribute to guilt. Second, literature on feedback is reviewed and how certain types of feedback elicit specific responses from suspects. Third, the inability of LEP and laypersons to detect deception is discussed. Lastly, the Feedback Effect is introduced.
The Reid Technique

The Reid technique has been popularized in the United States as the most widely used training guide for LEP (Gudjonsson & Pearse, 2011). It utilizes a set of techniques that employ LEP to rely on a set of cues to elicit information from suspects. Some of the cues are verbal and are distinguished by different characteristics of a suspect’s voice. Other cues are nonverbal and are based on the behavior that a suspect exhibits during an interrogation (Vrij, 1996). Both of these cues are supposed to aid LEP in in making judgements about a suspect’s guilt, even though empirical research has shown that they are ineffective (Gudjonsson & Pearse, 2011; Kassin, 2006; Kostelnik & Merryman, 2010; Reppuci & Meyer, 2006).

For example, in a study conducted by Kassin and Fong (1999), the researchers examined whether using behavioral cues was an effective way to detect deception and utilized the Reid Technique Manual in their analysis. Researchers recruited college students to render judgments on suspects who were caught vandalizing a building, shoplifting from a store, breaking and entering, or attempting a computer break-in. Some of the participants were trained in the Reid technique, others were not. Specifically, the participants who were trained were taught to assess a suspect’s verbal and non-verbal cues as means to detect deception. Findings showed that those who were not trained in deception detection and relied solely on their own indicators of guilt performed slightly above chance, at approximately 55% accuracy. Those who were trained in deception detection techniques performed worse than those who were not trained, at approximately 45% accuracy.

Masip and Herrero (2015) found that relying on behavioral cues to detect deception was less accurate than relying on contextual cues, such as forensic evidence. However, this is not a new phenomenon. Researchers have historically argued that human observers are inadequate at
deception detection no matter how much training they receive (Frank & Feeley, 2003; Levine, Feeley, McCorrnick, Hughes, & Harms, 2005; Vrij, 2008). The training that LEP receive often makes them more confident in their skills, which is especially problematic if the suspect is innocent. Research has shown that when an innocent suspect is interrogated, they produce many of the same behaviors that implicate “guilty” suspects (Volbert, May, Housam, & Lau, 2019). Unfortunately, those behaviors are what lead to the Behavioral Analysis Interview (BAI), the first phase of the Reid technique. During the BAI, LEP are taught to evaluate interviewee’s nonverbal and verbal behavior to discern indicators of guilt. If LEP are “reasonably certain of the suspect’s guilt” (Inbau, Reid, Buckley, & Jayne, 2011, p. 5), the interaction becomes an accusatory interview, or interrogation. During this part of the process, LEP will confront the suspect and clearly indicate that they were involved in the crime in question (Inbau et al., 2011). During the accusatory interview, feedback is often given in efforts to elicit information, which has shown to produce specific responses dependent of the type of feedback provided (Beune, Giebels, & Sanders, 2009).

Types of Feedback

Gudjonsson and Clark (1986) have suggested that the type of feedback provided to a suspect can elicit certain types of responses. Generally speaking, researchers have evaluated feedback in one of three ways: positive, negative, and neutral (Invancevich, 1982; Marlatt, Jacobson, Johnson, & Morrice, 1970; McGroarty & Baxter, 2007). Positive feedback is associated with the suspect having positive perceptions of themselves and the interviewer (Marlatt et al., 1970). Suspects who receive neutral or no feedback react similarly to suspects who receive positive feedback. They tend to have generally positive perceptions of themselves and of the interviewer (Marlatt et al., 1970). Negative feedback is associated with the suspect
having negative perceptions of themselves and the interviewer (Marlatt et al., 1970). Negative feedback has also been reported to have the most damaging effects on suspects, especially if they are innocent (Gudjonsson & Clark, 1986).

Gudjonsson and Clark (1986) argued that innocent suspects receiving negative feedback from an interrogator were more likely to accept the negative feedback, which led them to have increased anxiety, increased confusion, and lower self-esteem. Negative feedback was also more likely to increase the “psychological distance” between LEP and a suspect, thus making LEP less likely to believe the suspect’s claims of innocence. McGroarty and Baxter (2007) found that innocent suspects tend to internalize negative feedback. This often leads suspect to change their answers during interrogative sessions, further implicating them in the eyes of LEP as well as jurors.

**Deception Detection**

Jurors are laypeople, who are called to cast judgements on defendants during trial (The Marshall Project, 2018). They do not receive the same specialized training as LEP, but they use many of the same cues to detect deception that LEP use (Bond & DePaulo, 2006; Levine, Casey, Sorota, & Messer, 2013; Stromwall & Granhag, 2004). In a study conducted by Hartwig and Bond (2011), the researchers found that LEP and laypersons relied on both verbal and nonverbal cues when detecting deception. This included cues such as gaze aversion, pitch changes, as well as shifts in bodily composition. Empirical research has not proven the reliability of such cues to detect deception (Stromwall & Granhag, 2004), yet LEP and laypersons use them when forming impressions of a suspect (Levine et al., 2013).

Research has also found that LEP and laypersons are comparable at deception detection. In a study conducted by Ekman and O’Sullivan (1991), researchers evaluated the ability of LEP
FEEDBACK EFFECT

to detect deception. Members of the U.S. Secret Service, Central Intelligence Agency, Federal Bureau of Investigation, National Security Agency, Drug Enforcement Agency, California police, and judges were asked to watch a video where a person was instructed to either lie or tell the truth about their feelings. The answers of LEP were compared to college students and working adults. The findings showed that LEP were comparable to laypersons at deception detection, at approximately 50% accuracy. Vrij (1993) conducted a similar study found that LEP performed comparably to their lay counterparts, at approximately 46% accuracy.

As the literature suggests, LEP are not adept at discerning truths from lies. Rather, LEP are comparable to their lay counterparts at deception detection. Laypersons, however, tend to view LEP as more credible and reliable, valuing the input of LEP above other forms of evidence (The Marshall Project, 2018). The implications that stem from such perceptions can be the difference between innocence and guilt, for an innocent suspect, and will be discussed in the following section.

The Feedback Effect

Laypersons have viewed LEP as credible and reliable sources of information for decades. In discussing principles of conformity and persuasion we can explain not only why laypersons conform to the interrogator’s beliefs, but also how laypersons come to that decision in the first place. The Feedback Effect is the idea that when observers see or hear an investigator assert their belief/disbelief in a suspect (in the form of testimony or through an interrogation video), that feedback by itself may influence observers’ perceptions, regardless of whether it alters the suspect’s behavior (direct pathway). However, in the absence of the observer hearing feedback from LEP, they may be influenced by the suspect’s behavior, misattributing their anxiety for guilt (indirect pathway).
Both of these pathways can lead to a number of legal ramifications, especially if the suspect is innocent. As noted earlier, previous research has shown that relying on behavioral cues to detect deception is ineffective, yet LEP and laypersons use them in gauging their initial impressions of a suspect (Frank & Feeley, 2003; Levine, Feeley, McCormack, Hughes, & Harms, 2005). It is important, therefore, to understand both of these pathways if we wish to educate both of these groups not only in the errors of their logic, but also in the implications of their judgments.

**Direct pathway (feedback).** The direct pathway is the first of two pathways that may produce a Feedback Effect. According to this hypothesis, observers may come to take their cues directly from LEP. In other words, when observers hear LEP assert their belief/disbelief in a suspect, they are more likely to agree with that professional assessment. Support for this hypothesis is found in the principles of conformity and persuasion. Researchers have studied the individualized behaviors of conformity for decades (Garcia, 2017).

To start this discussion, it is important to explain the concept of normative and informational influences in conformity. Normative influence occurs because of the need to be accepted or liked by a group. Examples of this type of behavior are found in Solomon Asch’s work. In one study, Asch (1951) recruited several college students to participate in a line-judgment task. Participants were shown a card with a single line on it, followed by another card with three lines on it. They were then asked to compare the original line to the card that had three lines. The participant was in a room with confederates, who purposefully gave an incorrect answer. Results from this study suggested that participants were more likely to go along with the confederates because they believed that the other confederates were more informed than they
FEEDBACK EFFECT

were. This type of social influence is moderated by self-confidence and task difficulty. If the stakes were lower, participants were less likely to agree with their counterparts (Asch, 1951).

When the stakes are high, such as a jury deliberation, laypersons tend to be more motivated to find the “correct” answer, otherwise known as informational influence (Asch, 1951). Laypersons will analyze multiple types of evidence before coming to their ultimate decision. Among the different types of evidence produced at trial, research has shown that the testimony produced by LEP can have a significant impact on a juror’s perception of a suspect (The Marshall Project, 2018). In reviewing several hundred voir dire sessions in court, which is the process in which lawyers and/or judges test prospective jurors’ impartiality, attorney Todd Oppenheim (2018) found that jurors said they would give more weight to police testimony compared to other witness testimony. Discrepancies were only found within activist groups (e.g. Black Lives Matter). Relatedly, Kahan (2004) found that jurors were more likely to give more weight to police testimony, while ignoring different forms of contextual evidence (i.e., forensic evidence) that would contradict the police testimony. Jurors only dismissed police testimony when told that the testimony was discredited.

This is not a new phenomenon. Laypersons have viewed LEP as credible and reliable sources for decades. In Milgram’s (1963) classic obedience experiment, he tested the extent to which people adhere to the commands of authority figures. In a study that was advertised as a memory task, Milgram recruited “teachers” to shock confederates, who were classified as “learners,” every time they gave an incorrect answer to a word pair. With each wrong answer choice, the teacher increased the voltage, which was accompanied by pleas from the learners to stop (in actuality, no shocks were administered). At the behest of the experimenter, who stated that the learner was not in any harm, the teacher continued to shock the learner. At the end of the
experiment, it was found that 65% of the teachers shocked the learners at the highest voltage. These results suggested that people tend to ascribe great value to the opinion of authority figures. Relatedly, it was determined that those opinions tend to be strengthened if the authority figure is firm in their beliefs (Milgram, 1974). Therefore, if LEP issue negative feedback, stating their apparent belief in a suspect’s guilt, laypersons may be more likely to believe that the suspect is guilty as well.

**Indirect pathway (misattribution).** In the absence of the observer hearing the feedback presented to a suspect, will an observer view the suspect as truthful or deceptive? Previous literature suggests that it depends on the demeanor of the suspect (deTurck & Miller, 1985; Ekman, Friesen, & O’Sullivan, 1988; Zuckerman, DePaulo, & Rosenthal, 1981). Historically, assessing deception has been rooted in the belief that a guilty suspect displays signs of anxiety, which includes behaviors such as excessive fidgeting and rapid speech (Vrij, 1996). Research has shown that when an innocent suspect is interrogated, they produce many of the same behaviors that implicate guilty suspects (Volbert, May, Housam, & Lau, 2019). Therefore, if an innocent suspect exhibits anxious behaviors, will laypersons attribute that feedback-induced anxiety to deception? The research suggests they would. Self-report studies have found that laypersons rely on subjective cues to detect deception (Hartwig & Bond, 2011). Research has also found that laypersons may disregard contextual evidence and rely on behavioral cues when making judgements about a suspect’s guilt (Kahan, 2004). Therefore, in the absence of an observer hearing feedback administered to a suspect, the observer may take their cues directly from the suspect’s behavior, disregarding how the feedback from LEP may have altered the behavior.

**Current Study**
Both the direct and indirect pathway are means by which observers interpret information. Through the direct pathway observers take their cues directly from the interviewer’s feedback, whereas through the indirect pathway observers take their cues directly from the suspect’s behavior. Both of these pathways comprise the Feedback Effect and can have huge ramifications, especially if the suspect is innocent. Therefore, the current study seeks to examine the effects of these pathways as it relates to the impact they have on observers’ perception of guilt. The current study aimed to evaluate different types of feedback to determine whether exposure to such feedback can affect an observer’s perception of a suspect’s guilt.

The study was conducted in two parts. In Part I, participants were interviewed by a confederate polygraph examiner, accused of using countermeasures (tactics aimed at beating the test), and re-interviewed for a face-to-face interview during which feedback was administered. In Part II, observers viewed the videos created in Part I as stimulus material. Some of the observers were exposed to the feedback (direct pathway), while others were not (indirect pathway). Observers then were asked to give their opinions on different measures of veracity and guilt.

The hypotheses for this study were as follows:

1. Observers would view suspects in the negative feedback condition as more guilty and less truthful than those in the positive feedback condition.

2. This effect would be seen for those who were exposed to the feedback (direct) and for those who were not (indirect).

3. Relatedly, observers would be confident in their answers despite the fact that all participants were innocent.

Methods Part I
In Part I, college students were recruited to participate in a research study that examined the effectiveness of the polygraph in assessing different types of questions. In actuality, the polygraph was used as a prop to allow the researchers to introduce the accusation of cheating via countermeasures. After the accusation, a face-to-face interview was conducted during which the confederate polygraph examiner provided the student with either positive, negative, or no feedback. Stimulus videos were created and shown to participant observers in Part II of the study.

**Design**

Part I involved four phases. The first phase included the polygraph and subsequent accusation. Phase two included the pre-feedback interview during which the suspect was questioned about their use of countermeasures. In phase three, after the brief questioning session, the suspect was administered feedback randomly (positive, negative, or no feedback), which was followed by a post-feedback interview in phase four. After the post-feedback interview had ended, participants filled out a brief questionnaire, were debriefed, and thanked for their time.

During the course of the polygraph test, the administrator of the polygraph test provided feedback to the participant suspect taking the polygraph. The variable manipulated was the type of feedback. Feedback had three levels: positive, negative, and none, which were operationalized as follows:

**Negative feedback:** (using a harsh, stern tone) “Based on your behavior, I don’t think you are being honest about the countermeasures. This is not good. But to be on the safe side, before I talk to my supervisor, let me go over this again.”
**Positive feedback:** (using a calm, compassionate tone) “Based on what you’re saying and your behavior, I think you are being honest about the countermeasures. This is good. But to be on the safe side, before I talk to my supervisor, let me go over this again.”

**Control:** (using a neutral tone) “You know what, to be on the safe side, before I talk to my supervisor, let me go over this again.”

**Participant Suspects**

Participants were recruited through the undergraduate psychology research pool, using the John Jay Sona System and were credited one research point for their participation. In total, 83 undergraduate students signed up for the study, but there were some exclusionary criteria that prevented some participants from partaking in the study. Specifically, participants had to complete the Beck Anxiety Inventory (BAI) (Beck, 1993), which assesses trait anxiety (see Appendix A). Potential participants were emailed the checklist through their college email and told to complete it before coming in for their session. Those who failed to complete the BAI were excluded from participation ($n = 10$). Those who scored over 30 (severe anxiety as stated in BAI guidelines) were also excluded from participation ($n = 3$). Participants who did not attend their appointment time were also excluded ($n = 11$). Additionally, some participants reacted unfavorably to their feedback condition, displaying highly anxious behavior or began to cry, thus their session was terminated early. These participants were excluded from participation as a result ($n = 3$). The final sample consisted of 56 participants.

**Materials**

In the first part of the study, the polygraph was used as a prop. It had no functionality but was used as an aid to create the setting that allowed the researchers to introduce the accusation of cheating via countermeasures. Two separate rooms were used to conduct the interviews, one for
the polygraph and another for the face-to-face interview. In the first room, the polygraph was set up along with four other devices (blood pressure cuff, skin conductivity monitor, respiration belt, and a monitor pad). These devices were used to “assess” the arousal levels in the participant. However, like the polygraph machine, they had no functionality.

During the face-to-face interview, a video camera was used to record the sessions. An iPad was used to present the participant with the questionnaire after the post-feedback interview. After the post-feedback interview ended, participants were given a debriefing form and a video waiver. If participants declined permission to use their video for Part II, it was deleted.

Procedure

Prior to the participant’s appointment time, the confederate polygraph examiner made sure that both the room used for the polygraph and the room used for the face-to-face interview were set up correctly. This entailed positioning the cameras correctly, conducting sound checks on the microphones, and positioning the chairs so they were in focus of the video camera. Once setup was complete, he made sure that the video camera and microphones were working properly from the control room. Lastly, he checked the feedback condition to which the participant was randomly assigned.

Phase I. When the participant arrived for their session, he/she was given a consent form (see Appendix B). They were then directed into a room where a polygraph machine was stationed. The examiner explained the purpose of the study and then hooked up the participant to several devices (i.e., blood pressure cuff, skin conductivity monitor, respiration monitor belt, and sensory pad on the chair) which gathered information for the polygraph machine. It is important to note that all the devices had no functionality. They were used as a way to (1) enhance the
believability of the situation and (2) to introduce the crime-like basis for an accusation of wrongdoing.

After the participant was hooked up to the polygraph, the examiner asked the participant two questions to ensure that everything was “set up properly.” In actuality, these were two of the demographic questions listed in the screener that participants filled out prior to participation. One question asked about the participant’s class standing. The other asked about the participant’s city of residence. The participant was asked to lie about the answer to one of the questions and to tell the truth about the other. Since the screener was supposed to be filled out at least 24-hours before their appointment time, it was assumed that the participant would not be aware that those questions were used as a way for the examiner to verify the suspect’s answer choices and not as a way to ensure the accuracy of the polygraph machine. However, the examiner stated that the polygraph machine would “indicate” whether or not the participant lied on the first question or the second question as a way to convince the participant that the polygraph actually worked and that the examiner could tell when they were lying.

After the examiner established the “baseline,” or the point of comparison for the participant, a string of questioning ensued. The questions asked varied from crime relevant questions regarding past transgressions, such as, “Have you ever used public transportation without a valid ticket?”, to neutral questions, such as, “Have you ever broken a bone?” (adapted from Madon, Guyll, Scherr, Greathouse, & Wells, 2012 and Sauerland et al., 2013; see Appendix C). After approximately five minutes of questioning, the polygraph examiner then “accused” the participant of using countermeasures, which are tactics used by the polygraph taker to “beat” the test. After the accusation, the polygraph examiner stated that the use of countermeasures would prevent the participant from receiving credit for the research study. As the examiner became
increasingly more agitated, he eventually pulled the polygraph away and unhooked the participant from the polygraph. He then moved the participant to another room and left to “talk to his supervisor” at which time the examiner went into the control room and turned on the camera and audio.

**Phase II.** After about one minute, the examiner returned to the room and explained that his supervisor was not there. He then stated that he wanted to gather some more information from the participant so he could report back to his supervisor and see what they had to say about what had occurred. The examiner then reiterated that he may be unable to give the participant research credit for their session. The second interview consisted of baseline and crime-relevant questions regarding the suspect’s use of countermeasures (see Appendix D). Participants were asked (1) baseline questions (e.g., “What year of school are you in?”), followed by (2) control questions (e.g., “Have you learned anything about the polygraph in any of your classes?”), paired with (3) questions pertaining to countermeasure use (e.g., “Do you know how to beat the polygraph?”). Phase II lasted approximately five minutes.

**Phase III.** Following the scripted questioning session, the participant received feedback from the researcher regarding their use of countermeasures. Participants were assigned to one of three feedback conditions: positive, negative, or no feedback.

**Phase IV.** After participants were given the feedback, the examiner asked the participant the same questions asked in Phase II. He then explained that he had everything that he needed and left the room. When the examiner left the room, he retrieved the iPad for the questionnaire (self-report measure), the debriefing form, and the video waiver form. After the questionnaire was completed the participant was then debriefed and asked whether or not he/she wanted to sign
the video waiver. If the participant declined, their video was not used in Part II of the study. Once the participant left, he/she was credited with one research point on the SONA system.

**Methods Part II**

In Part I, stimulus videos were obtained from undergraduate students who participated in the research study. Participant observers in Part II were then tasked with watching these videos and rendering a judgment on the veracity of the statements produced by the participants in Part I.

**Design**

The study used the videos created in Part I as stimulus material. A mixed factorial design was used: 3 (positive, negative, no feedback) x 2 (pre vs. post feedback interview) x 2 (exposure to feedback vs. no exposure to feedback), with the second variable as a repeated measure. Each observer watched two videos of a single subject before and after feedback had been administered to the suspect. In the video that contained the feedback, observers were shown a video that contained one of three feedback types (positive feedback, negative feedback, or no feedback). Some of the observers were showed a post-feedback interview where the feedback had been kept. Others were showed a post-feedback interview where the feedback had been omitted. Observers were then asked to indicate whether they believed the participant suspects was being truthful or deceptive (i.e., “*In your opinion, how truthful was the suspect during the interview?*”). They were also asked whether they believed the suspect to be guilty or innocent of using countermeasures (i.e., “*In your opinion, did the subject cheat on the polygraph?*”).

**Participant Observers**

In the second part of the study, a total of 349 observers took part. Participants were recruited through Amazon’s Mechanical Turk System and paid a total of one dollar for their participation in the study. There were some exclusionary criteria that prevented some of the
participants from partaking in the study. Specifically, the Oppenheimer Instructional Manipulation Check (Oppenheimer, 2009) was used as an attention check that asked participants to put a certain response in order to make sure that they were reading the questions and instructions completely (Appendix I). Participants who failed the attention check were excluded from analyses \((n = 27)\). A manipulation check was used to make sure that participants noticed the feedback manipulation. If participants missed the attention check or manipulation check they were excluded from analyses \((n = 65)\). There were also a series of compliance with instructions questions that were geared towards making sure participants were completing the study in ideal conditions. Participants who failed to comply with the instructions were excluded from analyses \((n = 9)\) (see Appendix J). Participants who did not complete the study \((n = 2)\) were also excluded from analyses.

**Materials**

Participants were provided with the video recordings obtained from participants in Part I of the study. A questionnaire was used to analyze their judgments and assess personal beliefs about deception detection that may have aided in their decision making (see Appendix K). All questions were rated on a 10-point Likert scale, with “1” representing “Not at All” and “10” representing “Very.” Some of the questions included, “*In your opinion, did the subject cheat on the polygraph?*” and “*How confident are you in your judgement?*” A second questionnaire, identical to the first, was provided after participants were shown the post-feedback interview.

**Procedure**

Researchers edited the videos obtained from Part I. In the videos where the suspect was administered either positive or negative feedback, the researcher spliced the videos just before the feedback was administered to the suspect. When the videos were spliced, there were then two
FEEDBACK EFFECT

separate videos: a video where the examiner questioned a suspect prior to feedback being administered and another video in which the examiner questioned a suspect after feedback had been administered. The videos that did not contain the feedback were the “pre-feedback interviews.” The videos that contained the feedback were the “post-feedback interviews.” The post-feedback interviews were spliced once more, so that there were two additional videos: one in which the feedback had been edited out (no-exposure video) and one in which feedback was present (exposure video). In the videos where the suspect was not administered any feedback, the researcher spliced the video just before the examiner repeated the questions. The post-feedback interview for this condition was used as a control variable.

The first video that the participants viewed was the pre-feedback interview. This video contained no feedback and was not manipulated. Each video lasted approximately four minutes. After observers watched the pre-feedback interview they completed a brief questionnaire that assessed their perceptions of the suspect and the suspect’s use of countermeasures. The second video that the observers viewed was the post-feedback interview. This video was manipulated so that some of the observers heard the feedback, while others did not. Like the pre-feedback video, this video lasted approximately four minutes. After observers watched the post-feedback interview they completed the same questionnaire from earlier. Again, the observers reported their perceptions of the suspect and their use of countermeasures. Finally, all participants were thanked, debriefed, and paid one dollar for their participation through Amazon’s Mturk system.

Results

The current study examined whether feedback type and exposure to such feedback would affect an observer’s perception of a suspect’s overall truthfulness and guilt. It was hypothesized that suspects in the negative feedback condition would be viewed more deceptively than suspects
FEEDBACK EFFECT in the positive and no feedback condition on different measures of perceived guilt. It was also hypothesized that this effect would be seen when observers were exposed to feedback and when they were not exposed to feedback. Additionally, it was hypothesized that the observers would be confident in their judgements about the suspect’s deception despite the fact that all the suspects were innocent. Below are the findings.

Part I

After the participant suspects finished the post-feedback interview, they completed self-report measures regarding their experience during the polygraph examination as well as their experience during the interview following the polygraph. One-Way ANOVAs were conducted to analyze the participant suspects’ beliefs across different measures. All questions were reported on a 10-point Likert scale.

Polygraph Session

First, it is important to note that all participants denied having used countermeasures. With regards to the polygraph examination, overall, the participant suspects did not find the polygraph questions to be intrusive (\(M = 3.30, SD = 2.218\)) and there was not a statistically significant difference between conditions, \(F(2, 66) = .714, p = .493, \eta^2_p = .021\). Additionally, participants reported a moderate level of anxiety during the examination (\(M = 5.04, SD = 2.609\)) and there was not a statistically significant difference between conditions, \(F(2, 67) = .893, p = .414, \eta^2_p = .026\). See Table 1 for mean scores between the conditions.

Interview Session

During the interview session, overall, participants reported that they were truthful (\(M = 9.61, SD = 0.752\)) and felt moderately anxious (\(M = 5.29, SD = 2.798\)). When asked how they thought others would view them, participants thought that they would be viewed truthfully,
regardless of the feedback administered to them ($M = 8.51, SD = 1.907$). For these three measures, there was not a statistically significant difference between conditions, $p > .05$. See Table 2 for mean scores between the conditions.

Lastly, participants were asked whether they thought the interviewer believed their responses. There was a statistically significant difference between conditions, $F(2, 67) = 7.324, p = .001, \eta^2_p = .182$. Overall, participants in the positive feedback condition thought the interviewer believed their responses more ($M = 7.05, SD = 2.478$) than participants in the no feedback condition ($M = 5.64, SD = 2.536$) and participants in the negative feedback condition ($M = 4.12, SD = 2.804$). This difference suggests that the manipulation of feedback was successful.

**Part II**

Part II examined whether or not the type of feedback and the exposure to such feedback would affect observers’ perception of a suspect’s overall truthfulness and guilt. As mentioned earlier, observers in Part II of the study were shown the pre- and post-feedback videos of a single suspect from Part I and completed identical questionnaires about the interview after viewing each video. Some of the participant observers were exposed to the feedback and others were not.

**Pre-Feedback Interview**

Overall, only 22.5% ($n = 57$) of participants believed the suspect had cheated on the polygraph. There were no significant differences among the conditions prior to the administration of feedback ($p = .900$). Two-way ANOVAs were used to analyze the results. Observers reported their perception of the suspect and the interview using a 10-point Likert scale. Observers were relatively confident in their judgement of whether or not the suspect had cheated on the polygraph ($M = 7.05, SD = 1.936$). Additionally, observers thought it was relatively unlikely that the suspect used countermeasures during the polygraph examination ($M =
Overall, the observers believed in the veracity of the statements provided by
the suspect ($M = 7.10$, $SD = 2.142$), and viewed the suspect as relatively forthcoming ($M = 6.88$, $SD = 2.205$), even though observers perceived the suspect as moderately anxious ($M = 5.61$, $SD = 2.386$). Additionally, observers believed that other people would consider the suspects as truthful ($M = 6.94$, $SD = 2.107$).

As for the perception of the interviewer, the observers viewed the interviewer as moderately supportive and friendly ($M = 5.88$, $SD = 2.327$) and perceived that the interviewer moderately believed the suspect’s responses ($M = 5.32$, $SD = 2.399$). There was no main effect of feedback ($p > .05$), no main effect of exposure ($p > .05$), and no interaction ($p > .05$) for any of the measures. This serves as a manipulation check, suggesting that there were not any observable differences between conditions prior to the administration of the feedback manipulation. See Table 3 for mean scores by condition before feedback was presented.

**Post-Feedback Interview**

Overall, 26.1% ($n = 66$) of the participant observers believed that the suspects from Part I of the study had cheated on the polygraph. There were no statistically significant differences between the conditions ($p = .201$). However, although it did not reach statistical significance, when feedback was present, it appears that it did have an effect on the observer’s perception of guilt compared to when feedback was absent. In the positive feedback condition, when feedback was present, observers believed the subject was guilty 17.4% ($n = 8$) of the time, compared to when no feedback was present (28.0%, $n = 14$). When negative feedback was present, the observers believed that the subject was guilty 36% ($n = 18$) of the time, compared to when it was absent (19.2%, $n = 10$). Finally, in the control condition, observers believed that the subject was guilty 29.1% ($n = 16$) of the time. This pattern suggests that when exposed to the feedback,
observers were more likely to judge the suspect according to their respective feedback type. That is, when the suspect received positive feedback, the suspect was viewed more truthfully. When the suspect received negative feedback, they were viewed more deceptively. This pattern was not found when observers were not exposed to feedback.

**Confidence measure.** A two-way ANOVA was conducted to examine whether or not feedback type and exposure to such feedback would affect observers’ confidence in determining the guilt of the suspect. There was not a statistically significant main effect of feedback, $F(1, 247) = .706, p = .401, \eta^2_p = .003$, or exposure, $F(1, 247) = 3.743, p = .054, \eta^2_p = .015$. There was also not a statistically significant interaction between feedback and exposure, $F(1, 247) = .834, p = .362, \eta^2_p = .003$. See Table 4 for mean confidence ratings by condition after feedback was presented. See Figure 1 for main effects and interactions effects for this measure.

**Guilt measure.** A two-way ANOVA was conducted to examine whether or not feedback type and exposure to such feedback would affect observers’ perception of whether or not the suspect was guilty of using countermeasures. There was a statistically significant main effect of feedback, $F(1, 247) = 4.984, p = .026, \eta^2_p = .020$. Observers in the negative feedback condition believed the suspect was significantly more likely to have used countermeasures ($M = 4.65, SD = 2.452$) compared to suspects in the positive feedback condition ($M = 3.92, SD = 3.383$). There was not a statistically significant main effect of exposure, $F(1, 247) = .688, p = .408, \eta^2_p = .003$. Relatedly, there was not a statistically significant interaction between feedback and exposure, $F(1, 247) = 2.567, p = .110, \eta^2_p = .010$. See Table 2 for means by conditions after feedback was presented. See Figure 2 for main effects and interaction effects of the guilt measure.

**Truthfulness measure.** A two-way ANOVA was conducted to examine whether or not feedback type and exposure to such feedback would affect observers’ perception of the suspects’
FEEDBACK EFFECT 28

truthfulness. There was not a statistically significant main effect of feedback, $F(1, 247) = 3.068$, $p = .081, \eta_p^2 = .012$. There was also not a statistically significant main effect of exposure, $F(1, 247) = .659, p = .418, \eta_p^2 = .003$. There was, however, a statistically significant interaction between feedback and exposure, $F(1, 247) = 4.071, p = .045, \eta_p^2 = .016$. Observers in the feedback present condition who viewed negative feedback saw the suspect as significantly less truthful ($M = 6.66, SD = 2.115$) than suspects in the positive feedback condition ($M = 7.78, SD = 1.931$). When feedback was not present, observers viewed suspects in the negative feedback condition as significantly less truthful ($M = 7.02, SD = 1.842$) than suspects in the positive feedback condition ($M = 6.94, SD = 2.198$). See Figure 3 for main effects and interaction effects for this measure.

**Perceived truthfulness measure.** A two-way ANOVA was conducted to examine whether or not feedback type and exposure to such feedback would affect observers’ perceptions of how truthful other people would view the suspect. There was a statistically significant main effect of feedback, $F(1, 247) = 6.141, p = .014, \eta_p^2 = .024$. Suspects in the positive feedback condition were viewed to be more truthful ($M = 7.25, SD = 2.052$) than suspects in the negative feedback condition ($M = 6.53, SD = 2.165$). There was not a statistically significant main effect for exposure, $F(1, 247) = .381, p = .538, \eta_p^2 = .002$. However, there was a statistically significant interaction between feedback and exposure, $F(1, 247) = 6.269, p = .013, \eta_p^2 = .025$. Within the feedback present condition, observers in the negative feedback condition thought that most people would view the suspect as significantly less truthful ($M = 6.24, SD = 2.200$) than suspects in the positive feedback condition ($M = 7.74, SD = 1.807$). When feedback was not present, observers in the negative feedback condition thought the suspect would be viewed less truthfully
(M = 6.80, SD = 2.176) than suspects in the positive feedback condition (M = 6.81, SD = 2.115).

See Figure 4 for main effects and interactions effects for this measure.

**Interviewer’s opinion measure.** A two-way ANOVA was conducted to examine whether or not feedback type and exposure to such feedback would affect observers’ perception of the interviewer’s beliefs about the suspect. There was a statistically significant main effect of feedback, \( F(1, 247) = 19.546, p < .001, \eta_p^2 = .073 \). Observers in the negative feedback condition thought the interviewer believed the suspect’s responses significantly less (M = 5.07, SD = 2.385) than observers in the positive feedback condition (M = 6.41, SD = 2.426). There was not a statistically significant main effect of exposure, \( F(1, 247) = .017, p = .897, \eta_p^2 = .000 \). However, there was a statistically significant interaction between feedback and exposure, \( F(1, 247) = 40.586, p < .001, \eta_p^2 = .141 \). Observers in the feedback present condition, namely the negative feedback condition, thought the interviewer believed the suspect’s responses significantly less (M = 4.02, SD = 2.254) than in the positive feedback condition (M = 7.43, SD = 2.108). When feedback was not present, observers in the negative feedback condition believed that the interviewer believed the suspect’s answers significantly less (M = 5.46, SD = 2.401) than observers in the positive feedback condition (M = 6.08, SD = 2.066). See Figure 5 for main effects and interaction effects for this measure.

**Perceptions of the interviewer measure.** A two-way ANOVA was conducted to examine whether feedback type and exposure to such feedback would affect how supportive and friendly the observer perceived the interviewer to be. There was a statistically significant main effect of feedback, \( F(1, 247) = 3.957, p = .048, \eta_p^2 = .016 \). Observers in the negative feedback condition viewed the interviewer more negatively (M = 5.80, SD = 2.265) than observers in the positive feedback condition (M = 6.38, SD = 1.975). There was not a statistically significant
main effect of exposure, $F(1, 247) = .002, p = .966, \eta^2_p = .000$. However, there was a statistically significant interaction between feedback and exposure, $F(1, 247) = 14.746, p < .001, \eta^2_p = .056$. Within the feedback present condition, observers in the negative feedback condition thought the interviewer was significantly less friendly and supportive ($M = 5.20, SD = 2.100$) than observers in the positive feedback condition ($M = 6.98, SD = 1.598$). When feedback was not present, observers in the negative feedback condition thought the interviewer was significantly more friendly and supportive ($M = 6.38, SD = 2.285$) than in the positive feedback condition ($M = 5.82, SD = 2.135$). See Figure 6 for main effects and interaction effects for this measure.

**Forthcoming measure.** A two-way ANOVA was conducted to examine whether or not feedback type and exposure to such feedback would affect observers’ perception of how forthcoming the suspect was. There was a statistically significant main effect of feedback, $F(1, 247) = 8.095, p = .005, \eta^2_p = .032$. Observers in the negative feedback condition saw the suspect as significantly less forthcoming ($M = 6.47, SD = 2.128$) than suspects in the positive feedback condition ($M = 7.31, SD = 2.017$). There was not a statistically significant main effect of exposure, $F(1, 247) = .015, p = .902, \eta^2_p = .000$. However, there was a statistically significant interaction between feedback and exposure $F(1, 247) = 5.172, p = .024, \eta^2_p = .021$. Observers in the feedback present condition, who were in the negative feedback condition, thought that the suspect was significantly less forthcoming ($M = 6.10, SD = 1.961$) than suspects in the positive feedback condition ($M = 7.65, SD = 1.703$). When feedback was not present, observers in the negative feedback condition thought that the suspect was significantly less forthcoming ($M = 6.83, SD = 2.238$) than suspects in the positive feedback condition ($M = 7.00, SD = 2.241$). See Figure 7 for main effects and interaction effects for this measure.
Anxiety measure. A two-way ANOVA was conducted to examine whether or not feedback type and exposure to such feedback would affect observers’ perception as to how anxious the suspect appeared to be. There was not a statistically significant main effect of feedback, $F(1, 247) = 1.709, p = .192, \eta^2_p = .007$. Relatedly, there was not a statistically significant main effect of exposure, $F(1, 247) = .357, p = .551, \eta^2_p = .001$. However, there was a statistically significant interaction between feedback and exposure, $F(1, 247) = 5.204, p = .023, \eta^2_p = .021$. Observers within the feedback present condition saw suspects in the negative feedback condition as significantly more anxious ($M = 5.80, SD = 2.556$) than suspects in the positive feedback condition ($M = 4.59, SD = 2.418$). When feedback was not present, observers in the negative feedback condition saw suspects as significantly more anxious ($M = 5.23, SD = 2.478$) than suspects in the positive feedback condition ($M = 5.56, SD = 2.269$). See Figure 8 for main effects and interaction effects.

Discussion

Previous research and real-life criminal cases have demonstrated how specific types of feedback impact an interviewer’s perception of a suspect (Invancevich, 1982; Marlatt et al., 1970; McGroarty & Baxter, 2007). However, this previous literature has not yet examined whether the type of feedback and exposure to such feedback can affect an observer’s perception of a suspect’s overall truthfulness and guilt. The current study aimed to address this gap in the literature by assessing whether feedback type (positive, negative, or no feedback) and exposure to feedback (present or absent) would affect an observer’s perception of a suspect’s truthfulness and guilt with regards to the use of countermeasures during a polygraph examination. The findings of the current study suggest that feedback type can affect an observer’s perception of
guilt, but only when the observer was exposed to feedback. This result was not found when observers were not exposed to feedback.

The Feedback Effect and Perceptions of Guilt

The feedback effect can occur through two pathways. In the direct pathway, observers take their cues directly from the interrogator, whereas, in the indirect pathway, observers take their cues from the suspect’s behavior. Findings from the current study support the direct pathway, but not the indirect pathway, suggesting that observers do take their cues from LEP when making decisions about a suspect’s overall deception and guilt. However, when the feedback is not present or pronounced enough to evoke anxiety in the suspect, the suspect will not display signs of anxiety, and observers will not misattribute their anxiety for guilt in the absence of feedback.

**Direct pathway (feedback).** The first hypothesis stated that observers would infer deception and overall guilt from the feedback presented to them. That is, if a suspect received negative feedback from the polygraph examiner, the observer would judge the suspect as more guilty and less truthful compared to a suspect receiving positive feedback from the polygraph examiner.

The findings of the current study supported this hypothesis. When feedback was present, observers were more likely to judge the suspect as guilty of using countermeasures if they were in the negative feedback condition. When observers were in the positive feedback condition, observers judged the suspect as less guilty and more truthful. These results show that specific types of feedback, presented to a suspect, can impact an observer’s overall perception of the suspect, which is supported by empirical research. Literature on conformity has suggested that people often take cues from authority figures (Blass, 1991; Brown, 1986; Elms, 1971; Haney,
Banks, & Zimbardo, 1973; Kahan, 2004; Milgram, 1963; Zimbardo, 1971). This, coupled with the literature on persuasion, essentially explains how observers come to agree with the views of LEP. This is important to note, as issuing feedback is a common practice in interrogative sessions. If LEP are called to testify and assert their belief/disbelief in a suspect, observers, and by proxy, jurors might come to agree with LEP. This is especially problematic if the suspect is innocent. If LEP infer deception and guilt from a suspect’s behavioral cues rather than that of contextual evidence, their perception of the suspect could affect jurors, who may convict the suspect based on the testimony produced by LEP.

**Indirect pathway (misattribution).** The second hypothesis stated that in the absence of the observer hearing the feedback the observer would rely on their own set of cues to detect deception and misattribute any signs of anxiety to deception or guilt. The results from the current study did not support the second hypothesis. In the absence of feedback, observers did not take their cues directly from the suspect’s behavior. In fact, observers viewed the suspect positively across all conditions. They did not believe that the suspect was guilty of using countermeasures. Relatedly, they believed the suspect to be relatively truthful in their responses to the examiner. These findings were true in all conditions for both positive and negative feedback and when feedback was present and absent.

It was surmised, therefore, that the positive ratings attributed to the suspects were a result of a weak feedback manipulation. The feedback was not effective as evidenced by participant suspects’ self-report measures (Part I), as well as the participant observers’ responses to the post-feedback interview questionnaire (Part II). In fact, the observers’ perceptions of the examiner were relatively positive, suggesting that feedback was not strong enough in the negative feedback condition. Efforts to strengthen feedback will be discussed in future research, but it is
important to note that previous literature on deception detection has shown that people tend to rely on a suspect’s behavior as a way to detect deception (Anderson, 1999; Bond et al., 2004, DePaulo et al., 2003; Ekman & O’Sullivan, 1985; Inabu et al., 2001; Vrij, 2000). Therefore, in the absence of feedback observers can take their cues from a suspect’s behavior.

As mentioned above, this can be especially problematic if the suspect is innocent. Relying on behavioral cues rather than that of contextual evidence can lead to a slew of life altering changes for an innocent suspect, such as the potential for false confessions, the reinforcement of social stereotypes, especially for minorities, as well as a miscarriage of justice. The longer people reinforce preconceived notions about a suspect’s behavior, as it relates to deceptiveness and overall guilt, the longer they will be negatively impacting the lives of potentially innocent people.

**Confidence ratings.** The current findings supported the third hypothesis, which stated that observers would be confident in their judgments about the suspects’ use of countermeasures. Across all conditions and feedback types, observers were relatively confident in their judgements about the suspects’ overall guilt. This mirrors many of the findings from past studies on the confidence ratings of laypersons at detecting deception. Data has shown that people tend to be relatively confident when it comes to deception detection (DePaulo et al., 1997), though their confidence ratings are not as high as “professional” lie catchers (Allwood & Granhag, 1999; DePaulo & Pfeifer, 1986; Stromwall, 2001; Vrij, 1993).

**Limitations**

**Sample.** In Part I of the study, participant suspects were recruited from an urban college campus, and thus may not be representative of the general population. Relatedly, the majority of the participant suspects studied forensic psychology and therefore were more familiar with
FEEDBACK EFFECT

psychological research than the average person. It is reasonable to assume that forensic psychology majors are more suspicious of deception, especially if it is employed in laboratory studies. Thus, the sample may have been more suspicious of the polygraph machine, the examiner, and the repetitive questioning than a sample recruited from the general community. In total, seven participants noted having been suspicious during their debriefing.

Future research may benefit from modifying the present study in order to reduce suspicion and skepticism. While the sample was large enough to observe an effect, the findings would be more generalizable if the sample were more diverse. In Part II of the study, participant observers were recruited through Amazon’s Mechanical Turk system. Even though the participants were more representative of the population, the conditions under which they rendered judgement were not realistic or consequential. Observers were not in a courtroom setting, and they did not have to analyze multiple types of evidence.

**Manipulation of feedback.** While the manipulation of feedback was successful for observers in the exposure group, it was unsuccessful for observers in the no-exposure group. Participant observers in the negative-no-exposure condition rated the participant suspects above average on the truthfulness measure as well as the guilt measure, suggesting that the participant observers had more favorable perceptions of the participant suspects than was intended. Had the feedback been strengthened, there may have been a greater chance that the suspects would have displayed greater signs of anxiety, which observers would have misattributed as guilt in the absence of exposure.

We also did nothing to bolster the credibility of the examiner, which could have added another level of anxiousness to the suspects’ overall experience during their interviews. If the suspects viewed the examiner as a credible and reliable figure, they may have reacted more
anxiously during their interview session, leading observers to attribute their behavior to guilt in the absence of feedback. Future research should aim to create a strengthened negative feedback condition in order to determine if the participant observers would view the suspect as guilty in the presence and absence of feedback.

**Perceptions of guilt.** In criminal cases, jurors are often presented with multiple types of evidence and are told that their actions are consequential. In the present study, participant observers were neither presented with any additional evidence of “guilt” aside from the interrogation video, nor pressured to come up with their answers. Therefore, the procedure may not have created a strong enough perception of guilt for the participant observers to be sufficiently convinced of the participant suspect’s use of countermeasures.

Relatedly, participants observers were asked to complete an identical questionnaire immediately after the pre- and post-feedback interviews. As noted in the exclusionary data, 27 participants failed the attention check and 69 failed the manipulation check. The repetition of the questions may have led the observers to choose their answers indiscriminately, skewing some of the results.

**Conclusions and Future Research**

This study concluded that the feedback presented to a suspect can affect an observer’s perception of a suspect’s deceptiveness and overall guilt, but only when observers are directly exposed to that feedback. The indirect pathway was not supported, but both the direct and indirect pathway make up the term coined the “Feedback Effect.” A third and fourth part of the current study are underway. We are strengthening the feedback types, namely negative feedback, in hopes that doing so will yield significant results for the no-exposure group. If the findings of this new study are significant, all of the hypotheses will have been supported. However, if the
new set of results are insignificant, future research should use archival videos of past interrogations and show them to laypersons. Because the stakes would be higher, the chance is greater that the suspect in an archival video will display greater signs of anxiety, which could be misattributed to guilt in the absence of feedback.

**Implications**

LEP must understand the ramifications of issuing negative feedback, as their judgements induce stress in suspects, which LEP and laypersons misattribute as guilt. This is extremely problematic as LEP and laypersons are called to cast judgements on a daily basis in courts of law. The findings from this study and subsequent studies should be used to educate LEP on the issue of providing feedback to suspects, especially if they do not have contextual evidence to back up their claims. In doing so, innocent lives will be spared and LEP will have learned more effective methods of extracting information from suspects.
References


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Table 1

*Means and Standard Deviations Among Conditions - Measures from Polygraph Session (Part I)*

<table>
<thead>
<tr>
<th>Feedback</th>
<th>M</th>
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*Note.* Higher scores represent more favorable ratings.
### Means and Standard Deviations Between the Conditions - Measures from Interview Session

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<td></td>
<td>Negative</td>
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<td></td>
<td>Control</td>
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*Note.* Higher scores represent more favorable ratings.
Table 3
*Mean and Stand Deviations Among the Conditions- Measures from the Pre-Feedback Interview* (Part II)

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<td>7.02</td>
<td>2.23</td>
</tr>
<tr>
<td></td>
<td>Negative</td>
<td>Exposure</td>
<td>7.16</td>
<td>2.09</td>
</tr>
<tr>
<td></td>
<td></td>
<td>No Exposure</td>
<td>7.04</td>
<td>2.21</td>
</tr>
<tr>
<td></td>
<td>Control</td>
<td></td>
<td>7.00</td>
<td>2.23</td>
</tr>
<tr>
<td>Perceived Truthfulness</td>
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<td>Exposure</td>
<td>7.02</td>
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<td>7.14</td>
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<tr>
<td></td>
<td>Negative</td>
<td>Exposure</td>
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<td>1.97</td>
</tr>
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<td></td>
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<td>2.20</td>
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<tr>
<td></td>
<td>Control</td>
<td></td>
<td>6.65</td>
<td>2.22</td>
</tr>
<tr>
<td>Interviewer Opinion</td>
<td>Positive</td>
<td>Exposure</td>
<td>5.20</td>
<td>2.31</td>
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<td></td>
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<td>5.35</td>
<td>2.55</td>
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<td>5.10</td>
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<td></td>
<td>No Exposure</td>
<td>5.25</td>
<td>2.46</td>
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<tr>
<td></td>
<td>Control</td>
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<td>5.67</td>
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<tr>
<td>Perception of Interviewer</td>
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<td>Exposure</td>
<td>5.91</td>
<td>2.22</td>
</tr>
<tr>
<td></td>
<td></td>
<td>No Exposure</td>
<td>5.41</td>
<td>2.12</td>
</tr>
<tr>
<td></td>
<td>Negative</td>
<td>Exposure</td>
<td>6.14</td>
<td>2.02</td>
</tr>
<tr>
<td></td>
<td></td>
<td>No Exposure</td>
<td>6.12</td>
<td>2.54</td>
</tr>
<tr>
<td></td>
<td>Control</td>
<td></td>
<td>5.84</td>
<td>2.64</td>
</tr>
<tr>
<td>Forthcoming</td>
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<td>Exposure</td>
<td>6.96</td>
<td>1.99</td>
</tr>
<tr>
<td></td>
<td></td>
<td>No Exposure</td>
<td>7.22</td>
<td>2.31</td>
</tr>
<tr>
<td></td>
<td>Negative</td>
<td>Exposure</td>
<td>6.60</td>
<td>1.97</td>
</tr>
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<td>No Exposure</td>
<td>7.10</td>
<td>2.32</td>
</tr>
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<td></td>
<td>Control</td>
<td></td>
<td>6.58</td>
<td>2.38</td>
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<tr>
<td>Anxious</td>
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<td>Exposure</td>
<td>5.37</td>
<td>2.44</td>
</tr>
<tr>
<td></td>
<td></td>
<td>No Exposure</td>
<td>5.61</td>
<td>2.57</td>
</tr>
<tr>
<td></td>
<td>Negative</td>
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<td>5.56</td>
<td>2.43</td>
</tr>
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<td></td>
<td></td>
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<td>2.34</td>
</tr>
<tr>
<td></td>
<td>Control</td>
<td></td>
<td>5.76</td>
<td>2.24</td>
</tr>
</tbody>
</table>

*Note.* Higher scores represent more favorable ratings.
### Table 4

*Means and Standard Deviations Among Conditions - Measures from Post-Feedback Interview (Part II)*

<table>
<thead>
<tr>
<th>Measure</th>
<th>Feedback</th>
<th>Exposure</th>
<th>$M$</th>
<th>$SD$</th>
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<tbody>
<tr>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Confidence</td>
<td>Positive</td>
<td>Exposure</td>
<td>7.76</td>
<td>1.35</td>
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<td>2.14</td>
</tr>
<tr>
<td>Negative</td>
<td>Exposure</td>
<td></td>
<td>7.28</td>
<td>1.98</td>
</tr>
<tr>
<td></td>
<td>No Exposure</td>
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<td>7.00</td>
<td>1.95</td>
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<td>Control</td>
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<td>Exposure</td>
<td>3.78</td>
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</tr>
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<td></td>
<td>No Exposure</td>
<td></td>
<td>4.04</td>
<td>2.37</td>
</tr>
<tr>
<td>Negative</td>
<td>Exposure</td>
<td></td>
<td>5.06</td>
<td>2.55</td>
</tr>
<tr>
<td></td>
<td>No Exposure</td>
<td></td>
<td>4.25</td>
<td>2.31</td>
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<td>Control</td>
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<td></td>
<td>4.31</td>
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<td>Exposure</td>
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<td>1.93</td>
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<td></td>
<td>No Exposure</td>
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<td>2.20</td>
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<td>Exposure</td>
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<td>6.66</td>
<td>2.12</td>
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<tr>
<td></td>
<td>No Exposure</td>
<td></td>
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<td>1.84</td>
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<td>6.54</td>
<td>2.32</td>
</tr>
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<td>Exposure</td>
<td>7.74</td>
<td>1.81</td>
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<td>Exposure</td>
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<td>6.24</td>
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<td>No Exposure</td>
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<td>Control</td>
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<td>2.22</td>
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<tr>
<td>Interviewer Opinion</td>
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<td>Exposure</td>
<td>7.43</td>
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<td>5.46</td>
<td>2.40</td>
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<tr>
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<td>Exposure</td>
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<td>2.25</td>
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<td>Exposure</td>
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<td>1.60</td>
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<td>No Exposure</td>
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<td>5.82</td>
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<td>2.10</td>
</tr>
<tr>
<td></td>
<td>No Exposure</td>
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<td>2.29</td>
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<tr>
<td>Control</td>
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<td></td>
<td>5.94</td>
<td>2.44</td>
</tr>
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<td>Forthcoming</td>
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<td>Exposure</td>
<td>7.65</td>
<td>1.70</td>
</tr>
<tr>
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<td>No Exposure</td>
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<td>2.24</td>
</tr>
<tr>
<td>Negative</td>
<td>Exposure</td>
<td></td>
<td>6.10</td>
<td>1.96</td>
</tr>
<tr>
<td></td>
<td>No Exposure</td>
<td></td>
<td>6.83</td>
<td>2.24</td>
</tr>
<tr>
<td>Control</td>
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<td>6.22</td>
<td>2.38</td>
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<td>2.42</td>
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<td>No Exposure</td>
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<td>5.56</td>
<td>2.27</td>
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<tr>
<td>Negative</td>
<td>Exposure</td>
<td></td>
<td>5.80</td>
<td>2.56</td>
</tr>
<tr>
<td></td>
<td>No Exposure</td>
<td></td>
<td>5.23</td>
<td>2.48</td>
</tr>
<tr>
<td>Control</td>
<td></td>
<td></td>
<td>5.52</td>
<td>2.15</td>
</tr>
</tbody>
</table>

*Note.* Higher scores represent more favorable ratings.
Table 5

*Pre and Post Feedback Scores with/out Exposure - Guilt Confidence Measure*

<table>
<thead>
<tr>
<th>Feedback</th>
<th>Exposure</th>
<th>$M$</th>
<th>$SD$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive</td>
<td>Exposure</td>
<td>5.15</td>
<td>6.02</td>
</tr>
<tr>
<td></td>
<td>No Exposure</td>
<td>3.54</td>
<td>6.44</td>
</tr>
<tr>
<td>Negative</td>
<td>Exposure</td>
<td>2.64</td>
<td>7.13</td>
</tr>
<tr>
<td></td>
<td>No Exposure</td>
<td>4.35</td>
<td>5.87</td>
</tr>
<tr>
<td>Control</td>
<td></td>
<td>3.13</td>
<td>6.58</td>
</tr>
</tbody>
</table>

*Note.* Higher scores represent more favorable ratings.
Table 6

*Pre and Post Feedback Scores with/out Exposure - Guilt Measure*

<table>
<thead>
<tr>
<th>Feedback</th>
<th>Exposure</th>
<th>$M$</th>
<th>$SD$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive</td>
<td>Exposure</td>
<td>3.78</td>
<td>2.41</td>
</tr>
<tr>
<td></td>
<td>No Exposure</td>
<td>4.04</td>
<td>2.37</td>
</tr>
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<td>Negative</td>
<td>Exposure</td>
<td>5.06</td>
<td>2.55</td>
</tr>
<tr>
<td></td>
<td>No Exposure</td>
<td>4.25</td>
<td>2.31</td>
</tr>
<tr>
<td>Control</td>
<td></td>
<td>4.31</td>
<td>2.06</td>
</tr>
</tbody>
</table>

*Note.* Higher scores represent more favorable ratings.
Table 7

*Pre and Post Feedback Scores with/out Exposure - Truthfulness Measure*

<table>
<thead>
<tr>
<th>Feedback</th>
<th>Exposure</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive</td>
<td>Exposure</td>
<td>7.78</td>
<td>1.93</td>
</tr>
<tr>
<td></td>
<td>No Exposure</td>
<td>6.94</td>
<td>2.20</td>
</tr>
<tr>
<td>Negative</td>
<td>Exposure</td>
<td>6.66</td>
<td>2.12</td>
</tr>
<tr>
<td></td>
<td>No Exposure</td>
<td>7.02</td>
<td>1.84</td>
</tr>
<tr>
<td>Control</td>
<td></td>
<td>6.54</td>
<td>2.32</td>
</tr>
</tbody>
</table>

*Note. Higher scores represent more favorable scores.*
Figure 1

Main Effects and Interaction Effects for Feedback and Exposure - Guilt Confidence Measure
Figure 2

*Main Effects and Interaction Effects for Feedback and Exposure - Use of Countermeasures*
Figure 3

*Main Effects and Interaction Effects between Feedback and Exposure - Perceived Truthfulness*
Main Effects and Interaction Effects between Feedback and Exposure - Perceived Truthfulness

Figure 4

Perceived Truthfulness Score

Feedback

Positive

Negative

Exposure

No Exposure
Figure 5

Main Effects and Interaction Effects between Feedback and Exposure- Interview’s Opinion
Figure 6

*Main Effects and Interaction Effects between Feedback and Exposure - Perceptions of the Interviewer*

![Perceptions of the Interviewer Score](image-url)
Figure 7

Main Effects and Interaction Effects between Feedback and Exposure - Forthcoming

The graph shows the relationship between Forthcomingness Score and Feedback with Exposure as a factor. The x-axis represents Feedback with Positive and Negative categories, and the y-axis represents the Forthcomingness Score ranging from 5 to 8. Two lines represent the exposure conditions: Exposure and No Exposure. The graph indicates that as the feedback becomes more negative, the Forthcomingness Score decreases, especially under Exposure conditions.
Figure 8

*Main Effects and Interaction Effects between Feedback and Exposure - Anxiety*

![Anxiety Score vs Feedback Interaction Effect Diagram](image-url)
Part I

Appendix A

Beck Anxiety Inventory

**Beck Anxiety Inventory**

Below is a list of common symptoms of anxiety. Please carefully read each item in the list. Indicate how much you have been bothered by that symptom during the past month, including today, by circling the number in the corresponding space in the column next to each symptom.

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Not At All</th>
<th>Mildly but it didn’t bother me much.</th>
<th>Moderately - it wasn’t pleasant at times</th>
<th>Severely – it bothered me a lot</th>
</tr>
</thead>
<tbody>
<tr>
<td>Numbness or tingling</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Feeling hot</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Wobbliness in legs</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Unable to relax</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Fear of worst happening</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Dizzy or lightheaded</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Heart pounding/racing</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Unsteady</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Terrified or afraid</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Nervous</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Feeling of choking</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Hands trembling</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Shaky / unsteady</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Fear of losing control</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>
**Column Sum**

<table>
<thead>
<tr>
<th>Difficulty in breathing</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fear of dying</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Scared</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Indigestion</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Faint / lightheaded</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Face flushed</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Hot/cold sweats</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

**Scoring** - Sum each column. Then sum the column totals to achieve a grand score. Write that score here ______________.

**Interpretation**

A grand sum between 0 – 21 indicates very low anxiety. That is usually a good thing. However, it is possible that you might be unrealistic in either your assessment which would be denial or that you have learned to “mask” the symptoms commonly associated with anxiety. Too little “anxiety” could indicate that you are detached from yourself, others, or your environment.

A grand sum between 22 – 35 indicates moderate anxiety. Your body is trying to tell you something. Look for patterns as to when and why you experience the symptoms described above. For example, if it occurs prior to public speaking and your job requires a lot of presentations you may want to find ways to calm yourself before speaking or let others do some of the presentations. You may have some conflict issues that need to be resolved. Clearly, it is not “panic” time but you want to find ways to manage the stress you feel.

A grand sum that exceeds 36 is a potential cause for concern. Again, look for patterns or times when you tend to feel the symptoms you have circled. Persistent and high anxiety is not a sign of personal weakness or failure. It is, however, something that needs to be proactively treated or there could be significant impacts to you mentally and physically. You may want to consult a physician or counselor if the feelings persist.
CONSENT TO PARTICIPATE IN A RESEARCH STUDY

Title of Research Study: The Polygraph: Detector of Truth and Lies

Principal Investigator: Aria Amrom
John Jay College of Criminal Justice
PhD Student
524 West 59th Street
New York, NY 10019

You are invited to participate in this research study because you are a John Jay student 18 years of age or older and meet eligibility requirements based on your responses to the screening questions. The research that you are about to participate in will ask you a series of questions. The polygraph will be utilized in order to determine its effectiveness with regards to various types of questions.
Purpose:
The purpose of this research study is to determine whether the polygraph is more effective as a lie detection instrument when asking specific types of questions. To assess the effectiveness of the instrument, we enlist the help of participants to answer a series of questions pertaining to past transgressions and life experiences. We cannot tell you every detail of this study ahead of time but we will explain the procedure to you fully after your participation.

Procedures:
If you volunteer to participate in this research study, we will ask you to do the following:

- Sign a consent form
- Be set up to a polygraph machine
- Provide answers to a variety of questions, including past transgressions

Time Commitment:
Your participation in this research study is expected to last for a total of 30 minutes.

Potential Risks or Discomforts:
The level of risk/discomfort associated with this study is minimal. You may experience some discomfort answering questions of a personal nature; however, all your responses will remain confidential. Every effort will be taken to maintain your confidentiality.

Potential Benefits:
You will not directly benefit from your participation in this research study.

However, the findings of this study can contribute to the existing literature regarding the accuracy of the polygraph.

**Payment for Participation:** For your participation in this study you will receive two (2) course credits to be awarded at the completion or withdrawal from the study. You can choose to participate in a different research study or complete an alternative assignment through the Psychology Department REP to receive credits.

**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.

We will protect your confidentiality by safeguarding all participant data. A coding list will be used to keep track of all information throughout the research procedures. Once you begin participation in the research study, the link between your data and any identifying information will be removed, thus anonymizing your research data. All data will be safely
stored in a secure research laboratory and on a secure computer server. Only the researchers will have access to your information and data.

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.

**Participants’ Rights:**

- 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.

- Your participation or non-participation in this study will in no way affect your grades, your academic standing with CUNY, or any other status in the College.

- You can decide to withdraw your consent and stop participating in the research at any time, without any penalty.

**Questions, Comments or Concerns:**

If you have any questions, comments or concerns about the research, you can talk:

Aria Amrom

aamrom@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

**Signature of Participant:**

If you agree to participate in this research study, please sign and date below. You will be given a copy of this consent form to keep.

____________________________________________________
Printed Name of Participant

____________________________________________________
Signature of Participant Date
Signature of Individual Obtaining Consent

_____________________________________________________

Printed Name of Individual Obtaining Consent

_____________________________________________________

Signature of Individual Obtaining Consent                  Date
Appendix C

Polygraph Questions

1. Have you ever broken a bone?
2. Have you ever used public transportation without a valid ticket?
3. Did you ever cheat on a test in high school?
4. How many siblings do you have?
5. Do you take the subway to school and/or work?
6. Have you ever driven through a red traffic light?
7. How many hours of television do you watch per day on average?
8. Have you ever stolen kitchen utensils from a student cafeteria?
9. Have you ever drank, bought, or tried to buy alcohol before you were 21?
10. Do you exercise regularly?
11. How many hours per day on average do you spend on social media?
12. Have you ever shoplifted something worth $25 dollars or more?
13. Do you currently have a job?
14. Do you regularly eat breakfast?
15. Have you ever illegally downloaded music, movies, software, or anything else?
16. Have you ever smoked, bought, or tried to buy cigarettes before you were 18?
17. Approximately how many apps do you currently have on your phone?
18. Have you ever been joyriding (borrowed someone’s car without permission)?
19. Have you ever traveled outside of the country?
20. Have you ever taken credit for someone else’s work, ideas, or answers as your own (plagiarism)?
Appendix D

Interview Questions

1. What year of school are you in?
2. What is your major?
3. What do you know about the polygraph?
4. Have you learned anything about the polygraph in any of your classes?
5. What classes are you currently taking?
6. Have you seen the polygraph used in TV shows or movies?
7. Have you ever heard the term “countermeasure” before?
8. Do you know what “countermeasures” are?
9. Have you ever been polygraphed before?
10. Do you know how to beat the polygraph?
11. What class are you completing this research credit for?
12. Who is the professor?
13. Did you use countermeasures today?
14. Did you cheat on this polygraph test?
15. What do you know about the reliability of the polygraph?
16. Are you currently on academic probation?
17. What days are you on campus? What is your class schedule?
18. Have you learned about deception detection in any of your classes? What did you learn?
19. Have you lied during this polygraph test?
20. Did you try to beat the polygraph?
Appendix E

Participant Questionnaire

Participant ID: ______________

Questionnaire

Please read each question carefully and circle the response you feel best answers the question.

I. The following questions concern the polygraph examination:

1. While taking the polygraph, did you use countermeasures? (circle one) YES NO
2. Have you ever taken a polygraph test before? (circle one) YES NO

3. How personally intrusive did you find the polygraph questions to be?

1---------2---------3---------4---------5---------6---------7---------8---------9-------

-----10

Not at all

Very

4. How anxious were you during the polygraph?

1---------2---------3---------4---------5---------6---------7---------8---------9-------

-----10
II. The following questions concern the interview that followed the polygraph examination:

5. During the interview, how truthful were you in your responses?

1------2--------3--------4--------5--------6--------7--------8--------9------

-----10

Not at all

Totally

6. During the interview how anxious were you?

1--------2--------3--------4--------5--------6--------7--------8--------9------

-----10

Not at all

Very

7. How truthful do you think others would see you to have been?

1--------2--------3--------4--------5--------6--------7--------8--------9------

-----10
Not at all
Totally

8. To what extent do you think the interviewer believed your responses to his questions?

1---------2---------3---------4---------5---------6---------7---------8---------9---------

-----10
Not at all
Totally

III. The following questions concern information about your background:

1. Age: _______
2. Gender: _______
3. What ethnic/racial group do you mostly identify with?
   - Caucasian/White
   - African-American/Black
   - Hispanic/Latino
   - Asian/Pacific Islander
   - Other
4. Year in school:
   - Freshman
   - Sophomore
   - Junior
FEEDBACK EFFECT

☐ Senior

☐ Other: __________

5. Major: ________________
The purpose of this study was to evaluate peoples’ behavior and demeanor when they receive feedback from an interviewer regarding their believability. The entire questioning session that you just experienced was an act and was part of the experiment. We know that you did not cheat on the polygraph examination, and you are not in trouble in any way. In fact, the polygraph machine was never actually used. We could not tell you about the true purpose of the study because we needed you to response in a natural way, and telling you might have changed your behavior and skewed the results of our study.

A number of wrongfully convicted people have been exonerated by DNA evidence. Analyses of these cases reveal that the interview phase of an investigation sometimes plays a critical role in wrongful convictions. In criminal investigations, suspects are often interviewed and interrogated with the purpose of determining whether they are guilty or innocent, but in many cases, the wrong decision is made.

The study you participated in is testing the effect of an interviewer’s feedback on a suspect during an interrogation. In real life, an interviewer may give a suspect feedback during the course of an interrogation, such as whether they believe they are telling the truth or lying. This feedback may impact the suspect’s anxiety, behavior, and willingness to disclose information.
This may become problematic if an observer misattributes the suspect’s demeanor as an indication of guilt, rather than a product of negative feedback.

In order to study this, we simulated an interview in which you were accused of using countermeasures on the polygraph. In reality, all participants are accused of using countermeasures and you were never suspected of doing so. To mimic real life investigations, some participants received positive feedback from the interviewer (that they were telling the truth) while others received negative feedback (that they were lying). Some participants did not receive any feedback.

Your visit to our lab was being videotaped because Part 2 of this study involves showing the tapes to participants and asking them questions about the session. You will have the opportunity to give us permission to use your videotape or not after you have been fully debriefed.

Please note that you were never under any real suspicion of using countermeasures. We understand, though, that it may have caused you some discomfort to be accused of lying and cheating. However, studies such as these are important in order to improve the justice system, and we therefore greatly appreciate your participation.

If you experienced a significant amount of stress, please note that you may make use of John Jay’s Counseling Services Center by calling them at (212) 237-8111 and making an appointment or visiting them in Room L.68.00 at 524 West 59th Street New York, NY 10019. Also, please note that you may request the results of the study after the data has been analyzed. If you wish to
request the results or have any other questions about this research study after you leave here today, feel free to email the experimenter (Aria Amrom) at aamrom@jjay.cuny.edu. You may also request to keep a copy of this debriefing statement.

If you have any questions, please feel free to ask them now.

Please keep in mind that because this study involves information that the participant does not know about before starting, it is very important that you do not discuss your experiences in this lab with anyone who could potentially be a participant in this study. If you do disclose information about the study to other people, this could jeopardize the integrity of our results.

Thank you for participating.
Appendix G

Video Consent Form

Permission to Use Videotape Data

I understand that the interview session I participated in was videotaped. The experimenter has explained to me why it was necessary to videotape the interview, and he or she has also explained to me that by signing this form, I give permission for the researchers of this study to use my videotape for data analysis purposes and for further research purposes. I have received the information that other research participants may view the tape in order to provide their impression of whether I provided false or true statements. It has been explained to me that these participants will be clearly informed about the conditions of my participation.

I understand that my videotape will be kept in a locked file cabinet and that only the primary researchers will have access to that cabinet. I have been given an opportunity to view my tape, decline the use of my tape, and erase my tape before anyone else has the opportunity to view it.

I have read the above statement and give my permission for the researchers to use my videotape data for the research purposes outlined above.

__________________________________  __________________
Print Name                                      Date
CONSENT TO PARTICIPATE IN A RESEARCH STUDY

Title of Research Study: Polygraph Interviews

Principal Investigator: Aria Amrom

John Jay College of Criminal Justice
PhD student

You are invited to participate in this research study because you are a registered MTurk worker 18 years of age or older and have not previously participated in this study. You will be asked to view a series of videos depicting an interview and complete several questions about the interview.

Purpose:
The purpose of this research study is to assess how people perceive and form impressions of others during brief interviews.

**Procedures:**
If you volunteer to participate in this study, we will ask you to watch two short videos and fill out questionnaires about each.

**Time Commitment:**
Your participation in this study is expected to last for a total of 15 minutes.

**Potential Risks or Discomforts:**
We do not expect that you will experience any significant risks or discomforts as a result of participating in this research.

**Potential Benefits:**
The current research study is not designed to directly benefit participants but the results will benefit the study of social perceptions and relations.

**Payment for Participation:**
You will be compensated $0.50 for your participation. Payment upon completion will be supplied through Amazon Mechanical Turk.

**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 collected in this study.

Your confidentiality will be protected through Amazon’s Mechanical Turk System. The researchers will not have access to identifiable information unless you provide it. The data will be confidential and anonymous. Names and other identifiers (including IP addresses and MTurk worker IDs) will not be requested or captured or associated with the findings. We will protect your confidentiality by referring to your individual data solely by participant numbers. All responses will be stored on secure servers or password protected hard drive.

**Participants' Rights:**

- Your participation in this study is entirely **voluntary**. If you decide not to participate, there will be no penalty; you will not lose any benefits to which you are otherwise entitled.

- You can decide to withdraw your consent and stop participating at any time, also without penalty.

**Questions, Comments or Concerns:**

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

Aria Amrom
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

If you agree to participate in this study, please click the “Next” button and begin.
Appendix I

Comply with Instruction Statements

*During this experiment, we ask that you comply with certain requirements to make sure you perform your best.*

1. First, please maximize the size of your web browser so that it covers your entire screen.

2. Please complete the experiment in a single session, and do not leave the experiment to engage in other tasks. So don't check your mail, look at Facebook, send or read a text message, get up for a drink, etc.

3. Please do not use your web browser's back or refresh buttons at any point during the experiment.

4. Finally, because this experiment requires your close attention, we ask that you complete the experiment in an environment that is free of noise and distraction. Please do not speak to anyone, or have anyone near you. Ideally, you would be alone in a quiet room, or in a room where other people are quiet (such as a library). The use of headphones is recommended.

Thank you for your help with these matters. Continue to the next page when you're ready to begin.
The following question is about information processing theories. It is important for you to read these instructions carefully.

Our knowledge about human psychology changes all the time. Some theories are improved by incorporating new findings, while others are entirely discarded. In recent years, theories of information processing have recognized the fact that people do not process information in a vacuum; even in well-controlled lab studies, context matters. In the real world, context can fundamentally alter how people perceive and process information. These effects are multiplied in studies conducted online, where participants can be easily distracted. Researchers have responded to this new emphasis by checking to see if participants are truly reading and responding to instructions as they are written. That is the true focus of this question. So, as a way of asking you to provide us with your full attention when completing this study, we have designed this question to ensure you are paying attention: please ignore all of the other options below, and in the box labeled “other”, please type a plus sign. We hope that you understand our intentions. If you object to our efforts, or if you feel like you cannot devote your full attention, you can discontinue your participation without any penalties.

Thank you very much for your effort and attention.

In general, do you agree or disagree with modern information processing theories?

- Strongly agree
- Agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Disagree
- Strongly disagree
- Other: _____________

Q80 During this experiment, we ask that you comply with certain requirements to make sure you perform your best.

Q82 First, please maximize the size of your web browser so that it covers your entire screen.

- I have done that (1)
- I have not done that (2)

Q84 Please complete the experiment in a single session, and do not leave the experiment to engage in other tasks. So don’t check your mail, look at Facebook, send or read a text message, get up for a drink, etc.

- I understand that (1)
Q86 Please do not use your web browser's back or refresh buttons at any point during the experiment.

- I understand that  (1)

Q88 Finally, because this experiment requires your close attention, we ask that you complete the experiment in an environment that is free of noise and distraction. Please do not speak to anyone, or have anyone near you. Ideally, you would be alone in a quiet room, or in a room where other people are quiet (such as a library).

- I understand that  (1)

Q90 Thank you for your help with these matters. Continue to the next page when you're ready to begin.

End of Block: Instructions

Start of Block: Compliance with instructions questions

Q92 You will recall that we asked you to meet certain criteria and to take certain steps to avoid distractions during the experiment. Now we want to know if you really followed the rules we asked you to follow. **Please be honest.**
Thank you for your help.

Q94 Did you maximize the size of your web browser so that it covers your entire screen?

- Yes (1)
- No (2)

Q96 Did you complete the experiment in a single session, without stopping?

- Yes (1)
- No (2)

Q98 Did you pause or leave the experiment to engage in other tasks, even if they were other computer tasks?

- Yes (1)
- No (2)
Q100 Did you use your web browser's back or refresh buttons at any point during the experiment?

- Yes (1)
- No (2)

Q102 Did you complete the experiment in an environment that is free of noise and distraction?

- Yes (1)
- No (2)

Q104 Did you complete the experiment without anyone helping you?

- Yes (1)
- No (2)

Q106 Did you speak with anyone at any time during the experiment?

- Yes (1)
- No (2)
Q108 Please tell us whether you used a search engine at any point during the experiment to look anything up.

- Yes, I used a search engine during the experiment. (1)
- No, I did not use a search engine during the experiment. (2)

Q110 Did you take notes at any stage during the experiment?

- Yes (1)
- No (2)

Q112 Did you (intentionally or unintentionally) rewind or restart the video in order to watch it again?

- Yes (1)
- No (2)
Q114 Did you experience any of the following technical difficulties during the survey? Check all that apply

☐ Video problems (video restarted or failed to play) (1)

☐ Survey or browser restarted (2)

☐ Other. Please Specify (3) ________________________________

☐ None (4)
Appendix L

Questionnaire for Part II

**Pre-Video Introduction**

You are about to watch a video of a person who has just completed a polygraph, or lie detector test. During the test, the examiner stopped and accused this person of trying to cheat by using “countermeasures” (physically tensing the body at various points to distort the results). In the following video, this person is being questioned about that test. Pay close attention to what he says and his demeanor during the interview. Afterward, you will be asked some questions.

**Questionnaire 1**

*Please select the response that you feel best describes the subject in the video you just saw.*

1. In your opinion, did the subject cheat on the polygraph?
   
   Yes  NO

2. How confident are you in this judgment?

   1------------2------------3------------4------------5------------6------------7------------8------------9------------10

   NOT AT ALL  VERY
3. In your opinion, how likely is it that the subject you saw used countermeasures?

1-----------2-----------3-----------4-----------5-----------6-----------7-----------8-----------9-----------10

NOT AT ALL

4. In your opinion, how truthful was the subject during the interview?

1-----------2-----------3-----------4-----------5-----------6-----------7-----------8-----------9-----------10

NOT AT ALL

5. How truthful do you think most people would see the subject to be?

1-----------2-----------3-----------4-----------5-----------6-----------7-----------8-----------9-----------10

NOT AT ALL

6. To what extent do you think the interviewer believed the subject’s responses?

1-----------2-----------3-----------4-----------5-----------6-----------7-----------8-----------9-----------10

NOT AT ALL

7. How supportive and friendly was the interviewer toward the subject?
8. During the interview, how forthcoming was the subject?

1---2---3---4---5---6---7---8---9---10

NOT AT ALL

VERY

9. During the interview, how anxious was the subject?

1---2---3---4---5---6---7---8---9---10

NOT AT ALL

VERY
Appendix M

Post-Feedback Questionnaire

Questionnaire 2

Please select the response that you feel best describes the subject in the video you just saw.

1. In your opinion, did the subject cheat on the polygraph?

   Yes                                      NO

2. How confident are you in this judgment?

   1-----------2---------3---------4---------5---------6---------7---------8---------9---------10

   NOT AT ALL                                      VERY

3. How likely is it that the subject you saw used countermeasures?

   1-----------2---------3---------4---------5---------6---------7---------8---------9---------10

   NOT AT ALL                                      VERY

4. How truthful was the subject during the interview?

   1-----------2---------3---------4---------5---------6---------7---------8---------9---------10
5. How truthful do you think most others would see the subject to be?

1------------2------------3------------4------------5------------6------------7------------8------------9------------10

6. To what extent do you think the interviewer believed the subject’s responses?

1------------2------------3------------4------------5------------6------------7------------8------------9------------10

7. During the interview, how forthcoming was the subject?

1------------2------------3------------4------------5------------6------------7------------8------------9------------10

8. How anxious was the subject?

1------------2------------3------------4------------5------------6------------7------------8------------9------------10
Personal Background Questions

1. Please select your gender
   - Male
   - Female

2. Age: _______

3. What ethnic/racial group do you mostly identify with?
   - Caucasian/White
   - African-American/Black
   - Hispanic/Latino
   - Asian/Pacific Islander
   - Other

4. Please select your highest level of education
   - High school
   - Associate’s degree
   - Bachelor’s degree
   - Master's degree
   - Professional degree
   - Doctorate degree

5. Have you ever been questioned by police as a suspect to a crime?
   - Yes
   - No

6. Have you ever been questioned by police as a witness to a crime?
   - Yes
   - No
Appendix M
Debriefing Form

Thank you for your participation. The purpose of this study was to evaluate perceptions of subjects who get feedback from an interviewer regarding their believability. The session that you just watched was part of an experiment in which subjects believed they were being accused of cheating on a polygraph examination.

A number of people have been wrongfully convicted of crimes they did not commit. Analyses of these cases reveal that they often are misjudged to be lying during an interview with police, when in fact they were just nervous, leading them to become suspects.

In real life, an interviewer may give a suspect feedback during an interview as to whether they believed to be telling the truth or lying. This feedback may make a suspect anxious which others might interpret to indicate deception.

In order to study this, we accused subjects of trying to cheat a polygraph as part of an experiment. Then we interviewed them about it. In fact, no one cheated and all subjects were accused. To mimic real life investigations, the interviewer gave subjects positive feedback (that they were believable), negative feedback (that they were lying), or none at all. What you saw was a single subject in one of these situations. Our aim is to test whether people view subjects as guilty or innocent depending on the feedback they received.
If you have any questions or concerns about this research, please contact the researcher, Aria Amrom, aamrom@jjay.cuny.edu.