

Veracity and Suspicion: The relationship between indirect deception detection and deceptive and truthful pleaders in suspicion absent and present conditions

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Abstract

This study explored the question: Can emotional reactions serve as an indirect way to detect deception, even in the absence of suspicion? The study was conducted in the form of an online survey. The participants were American individuals collected via Amazon Mechanical Turk. The experiment was a 2 x 2 mixed repeated measures design. The study found that participants rated feeling more sympathy for genuine rather than deceptive pleaders. This was true in both the suspicion present and suspicion absent conditions. We can conclude that there may be a relationship between sympathy rating as an indirect measure of deception detection and veracity. Though, the effects of suspicion on deception detection were nonconclusive. In future research, the manipulation of the variable of suspicion would need to be reconsidered.

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Introduction

Deception is an act or statement which intentionally misleads or hides the truth from the person receiving the information (Vrij, 2008). Human beings are inherently poor at detecting deception in others (Bond & DePaulo, 2006). Studies on deception detection have found that in direct lie detection people do not excel at detecting lies in others, with measured 54% accuracy (Levine, 2018). Research has also suggested that the use of indirect measurements, as opposed to direct measures, in deception detection may yield a greater accuracy (Vrij et al, 2001). Emotions are short-term physical, psychological, and physiological responses to positive and negative events and social stimuli (Keltner & Gross, 1999). One of the purposes of emotions is to serve a social function within interactions individuals have with others (Keltner & Haidt, 1999). Within the discussion of deception detection there is an indefinite relationship between the ability to accurately detect deception using sympathy towards liars and truth-tellers as an indirect measurement.

Emotions serve important social functions as explored by Keltner and Haidt (1999). Their article reviews studies and theory about the many social functions of emotions on four different levels of analysis (individual, dyadic, group, and cultural) (Keltner & Haidt, 1999). Keltner and Haidt (1999) use a case study of a specific emotion, embarrassment, to explore the connection between the levels of analysis in understanding the social functions of an emotion. They find that emotions serve the social functions of preparing an individual for a social event or response as well as working across levels of analysis to maintain self-preservation in social communication and situation (Keltner & Haidt, 1999). On each level of analysis there are socially purposed

functions that are created, and each of these functions can be connected to one another (Keltner & Haidt, 1999). Based on their findings and discussion it is possible to assume that the examination of social functions across the levels of analysis could be applied to any emotion. Despite no mention of deception in this study, the findings may lead to the generalization that due to emotions important role in application to oneself and interactions with others, emotional expression and perception would play a major role in the act of deception detection.

Ekman and Friesen (1974) designed a study with the intent of measuring the perceived deceptive cues for those engaging in lies as well as those receiving lies. This study was broken down into two parts. Participants in the first part of the study were shown two videos and prompted to respond differently to each. The first was a pleasant video after which the participants were prompted to be honest in a recorded interview about the feelings the video aroused in them. They were then shown an unpleasant video and prompted to lie about feelings of pleasantness. Afterward, they were asked which behaviors should be the most focused on censoring when lying, those relating to the face or those relating to the body. The second part of the study involved a different group of participants who were shown the videos of the interviews from the first part of the study, containing either facial or body behaviors during the truthful and lying interviews. Participants were then asked if they believed the videotape participants were telling the truth or lying, and which of the factors (face or body) better indicated truth telling. Ekman and Friesen (1974) found that the participants who were prompted to lie highlighted the face as the primary point of concealment for lying, choosing to censor it over the body when engaging in deception. The observers of the deceptive and truthful interviews were more likely to choose the body as the cue that they perceived gave away the liars. It can therefore be reasoned that when people are taking part in deceptive behaviors they are more aware of their facial

behaviors in comparison to their body behaviors. The results of this study may also imply that when an observer is seeking to detect deception in an individual's behavior they would focus more on the body than the face, and the introduction of multiple cues, beyond facial, may promote deception detection.

While Ekman and Friesen (1974) found that when people engage in lies they focus more on inhibiting their facial behaviors rather than their bodily behaviors and potentially because of the focus on the face those who view the lying individuals are more likely to identify liars from their body behavior than their facial behavior, more recent research suggests that observers also focus on the face. Stel and van Dijk (2018) created a study to examine the difference between ability to detect deception when the emotional expression involved is negative versus when it is positive. Participants were shown videos of positive truths and lies and negative truths and lies. After viewing each video, the participants rated the extent to which they thought the target was telling the truth on a 7-point scale as well as the extent to which they perceived the target as feeling a number of specific negative and positive emotions (Stel and van Dijk, 2018). Stel and van Dijk (2018) found that participants were more likely to rate targets as expressing more intense emotions if they were lying. Participants were also more likely to accurately detect deception when the deceptive target was expressing negative emotions vs when they expressed positive emotions (Stel and van Dijk, 2018). From the findings of this study it can be perceived that observers are better at detecting deception in others when the emotional context of the deception is negative, possibly because of people being more willing to assume that positive emotions are more genuine.

Methods

Participants

Our participant sample was comprised of a total of 61 participants. The sample was made up of 40 males and 21 females. 31 of the participants were assigned to the suspicion absent condition, while 30 participants were assigned to the suspicion present condition. The mean age of the participants was 34 and the standard deviation was 10. These participants were found on Amazon Mechanical Turk. Our inclusion criteria within this site was American with a 90%+ approval rate for their work. For participation in the study participants were awarded \$1.50.

Materials

There were 8 pleader videos selected as the materials for this study. The videos were broken down as 2 genuine male, 2 genuine female, 2 deceptive male, and 2 deceptive female pleaders. Ground truth for these videos was established on the basis of information that was discovered after the recording of the videos took place. We know that the pleaders in the “deceptive” videos are lying because overwhelming evidence surfaced that connected them with the missing individual’s death and ended with their conviction in criminal court (ten Brinke & Porter, 2012). For example, a mother confessed to the murder of her child after being confronted with evidence from policed tapped phone conversations. As for the honest individuals, similar overwhelming evidence was used to convict someone else in connection with their loved one’s disappearance or they were later found with no foul-play being involved (ten Brinke & Porter, 2012).

Procedure

Our study was a 2 (veracity: truth v. lie) x 2 (suspicion: present v. absent) mixed design. The study was completed online using a Qualtrics survey. Every survey began with informed

consent. Following, the instructions stated that the participants would watch 8 short videos, each approximately one minute long. There was slight variation in survey instructions based on suspicion absent and suspicion present condition placement. In the suspicion absent condition, the participants were instructed that they would be watching videos of individuals who were being interviewed about the disappearance of a loved one and then asked to make a rating about their reaction after each video. In the suspicion present condition, they were additionally informed that individuals in the videos would be stating no involvement in the disappearance of their loved one, however some of the individuals would be LYING while others are TELLING THE TRUTH and then that they would be asked to make a rating about their reaction after each video. The videos auto played for the participants and they could not click forward until the video was completely finished. Following each of the 8 videos participants were asked how much sympathy they felt for this person on a 7-point Likert scale where 1 was defined as “none at all” and 7 was defined as “a lot”. The survey concluded with demographic questions of gender, age, and race/ethnicity. Participants were then debriefed on the study and asked to describe the study they just completed, if they recognized anyone in the videos they watched for this study, any guesses about what we were trying to study, and if there was anything at all suspicious about this experiment, if so what did they find suspicious about the experiment. The last question served as a suspicion manipulation check. The study took about 10 minutes to complete.

Results

We conducted a causal study due to the manipulation of the independent variables of veracity (truth v. lie) and suspicion (absent v present). To analyze our data, we ran a 2 x 2 ANOVA statistical test. This test gave us information about the main effects of suspicion, veracity, as well

as the interaction between the two. This compiled information gave us the ability to explore all three of our hypotheses in context of our research question. The main effect of veracity was found to be significant. The study found that the participants reported greater sympathy for genuine pleaders ($M = 5.47, SD = 1.00$) versus deceptive pleaders ($M = 4.47, SD = 1.26$), $F(1, 59) = 54.19, p < .05$. We found the main effect of suspicion was non-significant. The study found that participants reported similar levels of sympathy in the suspicion absent condition ($M = 5.42, SD = 1.03$) versus the suspicion present condition ($M = 5.25, SD = 1.01$), $F(1, 59) = .467, p > .05$. There was no significant interaction between the variables of veracity and suspicion $F(1, 59) = .044, p > .05$. Participants reported having more sympathy for the genuine pleaders ($M = 5.47, SD = 1.00$) versus the deceptive pleaders ($M = 4.47, SD = 1.26$) when suspicion was present $t(29) = 4.81, p < .05$ and participants also reported having more sympathy for the genuine pleaders ($M = 5.47, SD = 1.00$) rather than the deceptive pleaders ($M = 4.47, SD = 1.26$) when suspicion was absent $t(30) = 5.74, p < .05$ (see Figure 1).

Discussion

Of our three hypotheses, one was supported. Hypothesis 1 stated that participants will report experiencing more sympathy to truth-tellers versus liars. Hypothesis 2 stated that participants will experience more sympathy when suspicion is absent versus when suspicion is present. Hypothesis 3 stated that participants will experience more sympathy to truth-tellers (vs. liars) when suspicion is absent, but not when suspicion is present. The study found that participants reported higher levels of sympathy for genuine, rather than deceptive pleaders. This higher sympathy rating was true of participants in both the suspicion present and suspicion absent conditions. There was no support for the hypotheses regarding suspicion presence and an effect on the levels of sympathy that participants report for pleaders.

Keltner and Haidt (1999) highlighted the importance of emotions in serving social functions. Within our study sympathy served the social function of an indirect measure in detection deception. We found that sympathy was a reliable emotional measurement of lie detection. Sympathy served the social function of lie detection accuracy in the findings of increased levels of sympathy towards the genuine, as opposed to deceptive, pleaders. In previous research done by Stel and van Dijk (2018) they found that participants were more accurate in detecting deception when the pleader was expressing a negative emotion. In the case of the videos in our survey, all of the emotions that were expressed by the pleaders fell into the category of negative emotions. Similarly, we found that participants rated their sympathy higher for the genuine pleaders over the deceptive pleaders in these high stakes heavily emotional videos.

In their article, Kim and Levine (2011) discussed previous research in which other studies reported little to no relationship between suspicion and lie detection accuracy. This research reflects the findings of our study in which there was no difference in lie detection based on suspicion condition. In their own study, Kim and Levine (2011) found that there may be an optimum level of suspicion that could help with lie detection accuracy, but if there is too little or too much suspicion the accuracy will not improve. Therefore, within our study the manipulation of the suspicion condition was shy of the optimal levels for lie detection accuracy improvement.

Within the measurement of our independent variable of suspicion there was not enough between-groups difference. We assumed that by telling the participants in the suspicion present condition that some of the pleaders would be lying and some would be telling the truth that it would in turn make them feel suspicious towards the videos. In addition, we also made the potentially false assumption that the participants in the suspicion absent condition who were not

warned about the liars in the videos would not be suspicious on their own. However, we have no way of knowing if the specific individuals in the suspicion absent condition may be generally suspicious of other people and their intentions. In order to produce test-retest reliability as means to ensure the construct validity of our study we could retest the study under the same conditions and see if that prompts survey results consistent with our findings in the first trial.

The main concern with the internal validity of our study was the general use of an online survey and the inability to control for potential distractions while participants were taking said survey. Due to the situation variability that accompanies the use of an online survey there is no way of knowing if participants were attentive to the information that was being presented to them in the videos. There are many outside variables that could have been confounding variables in this case. Our sample was specific to the users of Amazon Mechanical Turk. It was even more specific in the inclusion criteria of Americans with a 90%+ approval rate for their work on the site. The users of Mechanical Turk are low to mid-income earners. Our criteria focused even further into this population with the specified inclusion criteria. Due to the specific nature of our sample, the findings of our study may be generalized to the specifics of Americans who use Mechanical Turk. However, they may not be generalizable to the general population, or even the more focused American population.

There are a few ways that a future study could be changed to improve the construct, internal, and external validity. First, a new study could explore other ways to manipulate the variable of suspicion, specifically to reach the optimal level of suspicion as highlighted by Kim and Levine (2011). Another way to create a more accurate measure of the variable of suspicion may be to create a measurement of participant's general level of suspicion before the suspicion variable manipulation takes place. This could take the form of a brief questionnaire in which

participants answer questions such as how they would rate their average trust of a stranger on a 7-point scale. A potential way to account for the confounding variables that may be present when a survey is run online would be to try running an in-lab version. Another point of issue is the inability to generalize our data to the population due to the specified sample we surveyed. A way that a future study could deal with this problem is by using another sample population to test the same survey.

Our study found that observers rated their sympathy towards pleaders higher when pleaders were genuine than when they were deceptive. The inclusion of a suspicion condition, absent or present, did not affect the sympathy ratings towards the genuine and deceptive pleaders. These findings imply that observer sympathy ratings can serve as an indirect method to detect deception. Going forward in deception detection research, our study provided a new look into the incorporation of the variable of suspicion in relation to deception detection. Though we did not find a main effect of suspicion, in future research, the manipulation of the suspicion condition could be reconsidered. This study grazed the surface of adding suspicion as a variable into the conversation of deception detection.

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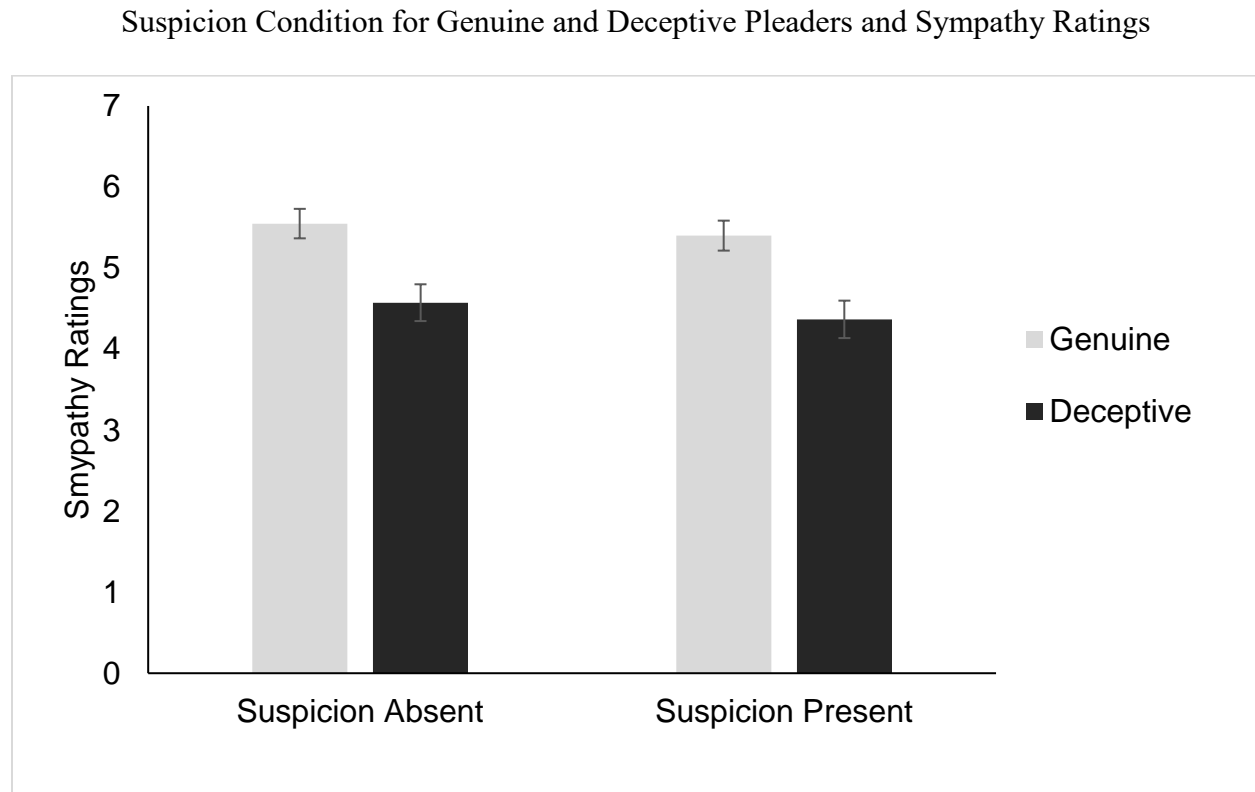


Figure 1. This graph shows the sympathy ratings by participants in suspicion absent and suspicion present conditions in response to the variable of veracity (truth v. lie). As can be seen, study found that in both suspicion conditions, present and absent, participants rated having more sympathy for the genuine rather than deceptive pleaders. There was no significant interaction between veracity and suspicion.