

The Effect of Personality on Telling Lies and Detecting Lies

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Abstract

The purpose of this study was to investigate possible correlations between personality traits and the ability to detect or tell lies. Other studies suggest that some personality traits are correlated with one's ability to lie or tell the truth. We hypothesized that the big five personality traits and psychopathy can influence an individual's lying ability. We had a group of students record themselves lying and then had our second group of participants watch the videos and determine who was lying and who was telling the truth. We found that primary psychopathy was linked to better lie detection skills, while secondary psychopathy was linked to better lying ability. Lower agreeableness scores were associated with better lying skills, and there was a positive relationship between extraversion and lie detection ability. Our data suggests that we may be able to predict who can identify lies, which may be useful in high-stakes situations.

Introduction

Everyone in the world tells little lies; some do it as an incentive, to make a good impression or influence others (1). Research suggests the average person can only detect deception with a 54% accuracy (1). This is a relatively low number, which shows the need for testing other methods of detecting deception. One approach could be to explore how our personality, such as how responsible or outgoing we are, can influence our ability to detect and tell a lie. Specifically, we used the Big Five personality traits and psychopathy to measure personality. By understanding the relationship between personality traits and lying, we as humans may improve our ability to detect deception more accurately. In our study, we measured personality traits in participants and then had them record themselves telling a lie. Another group of participants watched the videos and determined whether the person in the video was lying or not.

Personality Traits and Lying

Personality traits affect the way we think, feel, and act every day and research suggests they remain constant (2). The main five personality traits are extraversion, agreeableness, conscientiousness, neuroticism, and openness to experiences (2). Extraversion describes someone who has an outgoing personality and feels energetic around people (2). Agreeableness depicts compassion and kindness in individuals (2). Neuroticism is characterized by emotional instability and dramatic mood swings (2). Openness to experiences represents people who are critical thinkers and can create original ideas using their imagination (2). Conscientiousness expresses people who are organized, productive, and responsible (2). The big five personality traits are measured using standard questionnaires and the traits are scales given to each person (3). It is possible that aspects of personality like one's orientation towards others or oneself, or possibly the ability to be creative or a critical thinker, might affect lying ability.

Prior research has investigated the relationship between the ability to generate lies and personality traits such as openness and extraversion (3). Fourteen college students were selected and given a description scenario task to complete, with the scenario requiring them to create a lie and list many different potential solutions given unlimited time (3). The students also completed a BFI-2 rating personality survey (Big Five Inventory) and their lies were graded using a standardized questionnaire that measured deception using fluency and originality (3). Fluency refers to the amount of lies and how convincing one's lies are; however, originality is how creative or believable one's lie is (3). Surprisingly, there was no correlation between personality and lying (3). The outcome could be the result of a small sample size.

Is there a relationship between personality type and the successful liar? In this study, 58 participants were placed in a private room with a computer and a video camera (4). They were instructed to watch a video that assigned them to either a truth-telling or liar group. They then needed to answer four questions while making up any additional info they needed to sound convincing. Seven raters watched the videos to determine who was lying and who was telling the truth when everyone was lying. The finding revealed that participants who scored low on the sympathy and modesty facets were more successful liars. Participants who rated themselves as careless or unreliable were less successful (4). Those who scored low on agreeableness and high on Machiavellianism (people who do anything to get what they want) were better liars (4). Body language and facial expressions may have helped determine whether people were telling the truth or lying.

We sometimes tell more lies to our friends than to strangers (5). In this study, participants were invited to play a sender-receiver game where they had to choose between telling the truth or lying to gather points (5). Participants alternated between playing the game with a friend and playing with a stranger, totaling 80 individuals in the stranger group and 68 in the friendship group. The finding revealed that people lie more when the reward of lying exceeds the moral cost of it. 15% of participants in this study never lie and in this study, it shows fair people are less likely to lie than selfish people (5). The result also showed that friendships had a great impact on lying behavior, with participants being less likely to deceive their friends (5). The research found 33% of participants lied to strangers, whereas 30 % lied to friends (5). The biggest takeaway is that lying depends on familiarity with a person, incentives, and one's sense of fairness in a situation.

Psychopathy and Lying

Psychopathy is a personality disorder that is characterized by people who are manipulative, deceitful, and lacking empathy (6). According to some researchers, people with psychopathic traits are skilled at deceiving others and manipulating the truth (6). Psychopathy can be divided into two sub-factors: primary and secondary. Both sub-factors are believed to be related to deception accuracy, but they have different behavior patterns. Primary psychopathy relates to things like charm and lack of empathy while secondary relates to things like impulsivity and poor behavioral control (7). Disinhibition psychopathy is another subtype of psychopathy characterized by impulsivity and a lack of care for social conventions and is also thought to be related to telling lies (1).

Did you know that understanding people's personalities can help us predict who tends to lie in everyday situations (1)? In a study by Neville and Lason, 79 undergraduate students were used to investigate the relationship between sensation seeking, psychopathy, and everyday deception. Participants were given online surveys, personality questionnaires, and a sensation-seeking scale (1). They were then given scenarios where they could tell the truth or lie and were asked if they often lie. The findings showed that everyday deception is correlated to thrill and adventure seeking and boredom susceptibility. Experience-seeking, on the other hand, has a negative relationship with deception). Meanness and disinhibition psychopathy were also found to be correlated with deception (1).

Psychopathic personality may also be related to the ability to detect a lie. In this study, 133 undergraduate students were asked to identify whether the people in the ten video clips were telling the truth or lying (7). To measure their psychopathic tendencies, the participants took the Levenson Self-Report Psychopathy scale (LSRP), while their personality traits were measured using the BFI (7). The students had to choose which videos were “truthful” or “deceptive”. The results showed that there was no relationship between any time of psychopathy (primary and secondary) related to detecting lies in this sample. This may have been because psychopathy was very low in general in this sample, making it hard to find a pattern (7). The study's biggest takeaway was that the average person can detect deception with 54% accuracy, which is not very good.

Study Hypotheses

Overall, research has suggested that an individual's personality can have an impact on their ability to detect and tell a lie. However, there are various factors to consider, such as incentives, the desire to make a good impression, or the influence of others when detecting or telling a lie. This study is of significant contribution to the field of lie detection and telling, as to the best of our knowledge, no one has conducted a study on the subject using both the five personality traits and psychopathy traits. The study provides a direct comparison between the two types of personality traits when it comes to telling or detecting lies.

We conducted our study with two different groups of participants. The first group was instructed to either tell the truth or lie while recording themselves. The second group observed the videos of the first group and determined who is lying and who is telling the truth. Additionally, personality trait tests were given to both groups to analyze how personality (Big Five and Psychopathy) traits may influence the ability to detect or tell a lie with accuracy.

We hypothesized that there is a significant positive correlation between conscientiousness, openness to experience, and the ability to detect lies. Some researchers suggest that conscientious people tend to be more organized and therefore more likely to notice inconsistencies in information faster. Also, people who are open to experience may be best at detecting lies because of their critical thinking skills.

Conversely, extraversion and agreeableness may have a significant negative correlation to telling lies. Outgoing and social individuals (extraversion traits) might have trouble concealing their own emotions therefore they wouldn't be able to focus clearly on one thing at a time and tell lies. People characterized with agreeableness traits (kindness and compassion) might be more cooperative people and find it harder to comfortably lie to others due to discomfort or guilt, which could harm their relationships. Lastly, other personalities like psychopathy may also be related to telling or detecting lies, but we are not sure yet of the exact relationships due to the limited other research on the topic.

Methods and Materials

The study involved 55 African American high school students from The Neighborhood Academy. There are two different groups for this study: the liars and guessers. For the liars, there is a mix of male 59% and female 41% students from grades 11th and 12th, aged between 16 and 18. These students were asked to lie in this study. For the guessers, comprising both male 50% and female 50% students from 9th to 10th grade, with ages ranging from 15 to 16. To analyze the personality traits of these students, we utilized the Big Five Inventory survey, which measures traits based on the five-factor model (8). In addition to using the Big Five Inventory survey to measure personality traits, we also employed the Levenson Self-Report Psychopathy scale (LSRP) to assess the participants' psychopathic tendencies (9). In the survey, participants' personalities were evaluated across five dimensions: Openness, Conscientiousness, Extraversion, Agreeableness, and Neuroticism (8). The survey consisted of ten statements the participants had to respond to on a 1 to 5 scale, indicating whether they agreed or disagreed with the statements. For example, statements assessing Extraversion included "I see myself as someone outgoing, sociable," while "I see myself as someone who has an active imagination" was used to evaluate Openness.

On the other hand, in the LSRP survey, twenty-six statements were rated on a scale of 1 to 5 based on how much the participants agreed with them (9). The scale ranged from 1 (strongly disagree) to 5 (strongly agree). For instance, "Most of my problems are due to the fact that other people just don't understand me" was one of the statements. The survey is scored based on two steps. In Step 1, items are coded with a number from 1 (strongly disagree) to 4 (strongly agree). However, some items are reversed, and their codes must be corrected. Items 3, 7, 10, 13, 15, 21, and 26 need to be corrected as follows: 4 becomes 1, 3 becomes 2, 2 becomes 3, and 1 becomes 4.

In Step 2, sub-scale scores and the total score are computed after correcting for the reverted items. The primary psychopathy sub-scale is computed by summing items 2, 4, 7, 9, 11, 12, 13, 15, 17, 19, 21, 22, 23, 24, 25, and 26. The secondary psychopathy sub-scale is computed by summing items 1, 3, 5, 6, 8, 10, 14, 16, 18, and 20. The total score is computed by summing all the items.

To initiate our study, we selected appropriate classes and invited their students to participate. To ensure their consent, we collected signed permission slips from the students, which stated that they would be required to fill out two surveys - the Big Five Inventory survey and the Levenson Self-Report Psychopathy scale (LSRP) - and either record a video telling the truth or a lie based on a task we provide or watch a video of someone else telling the truth or a lie. Once we had collected the permission slips, we administered the BFI and LSRP surveys to two different groups, being careful not to reveal the purpose of the surveys to avoid any bias in the participants' responses. Next, we instructed the first group to either tell the truth or lie while recording themselves, while the second group was asked to watch the videos of the first group and determine who was lying and who was telling the truth. Finally, participants were given a demographic inventory to rate their ability to detect lies on a sliding scale from 0 (not confident) to 100 (very confident). Relationships between the variables were measured using a Pearson correlation r-test with a 0.05 threshold for significance. Tests were run on vassarstats.net.

Results

We expected to find a positive correlation between conscientiousness, openness to experience and lie detection, while extraversion and agreeableness might negatively correlate with telling lies. Psychopathy may also be linked to telling or detecting lies, but the relationship is unclear. We used the Big Five Inventory to measure personality traits and the Levenson Self-Report Psychopathy scale (LSRP) to assess the participants' psychopathic tendencies. Participants' personalities were evaluated across five dimensions: Openness, Conscientiousness, Extraversion, Agreeableness, and Neuroticism. Participants rated statements on a 1 to 5 scale, evaluating dimensions like openness. The LSRP survey, twenty-six statements that were rated on a scale of 1 to 5.

Our initial hypothesis was that two personality traits, conscientiousness, and openness to experience, might be connected to one's ability to detect lies. All five personality traits were evaluated using the Big Five Inventory (2). To measure the accuracy of detecting lies, each correct guess made by participants was worth one point, and this total was divided by 17 to produce a percentage. A Pearson correlation coefficient test was performed to measure the relationship between the participants' personality traits and their lie detection scores. The results showed that there were nonsignificant relationships between openness ($r(36) = -0.23$, $p = 0.07$), conscientiousness ($r(36) = 0.14$, $p = 0.20$), agreeableness ($r(36) = 0.10$, $p = 0.27$) and neuroticism ($r(36) = 0.02$, $p = 0.44$) and the ability to detect lies. However, there was a positive significant relationship between extraversion and lie detection ability ($r(36) = 0.39$, $p = 0.0084$). These results are summarized in Table 1 and Figure 1.

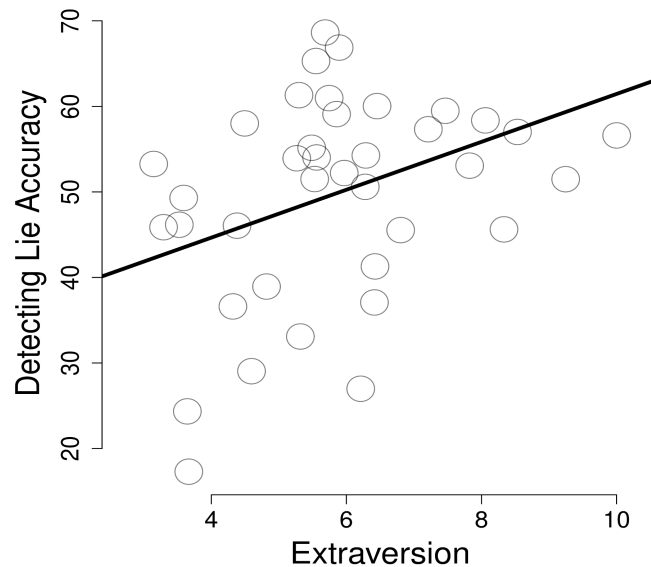


Figure 1. A positive correlation between extraversion and the ability to detect lies. This study involved 38 students who were asked to watch videos and determine whether the individuals in them were telling the truth or lying. Each correct guess received a score of 1, and all scores were added up. After watching the videos, the students completed two personality trait surveys. By performing a Pearson correlation coefficient test, the results showed a significant correlation between the participants' personality traits and their lie detection score, with a p-value of less than 0.05. A scatterplot was created to show the students' extraversion scores plotted against the percentage of their lie detection accuracy.

We hypothesized that other personality traits, such as psychopathy, may have a connection with the ability to detect or tell lies. However, we were not sure of the exact relationship. **In our research, we discovered that individuals who scored high in primary psychopathy ($r(38)= 0.3333$, $p= 0.02$) were more proficient at detecting lies. In other words, it can be concluded that more manipulative people may have a higher proficiency in detecting lies. Conversely, individuals with high secondary psychopathy scores ($r(17)= -0.51$, $p= 0.018$) were found to be more proficient at telling lies (Table 1, Figure 2). The relationship is negative because the dependent variable measures the audience's ability to identify the liar, so a lower score would indicate a more skillful liar.**

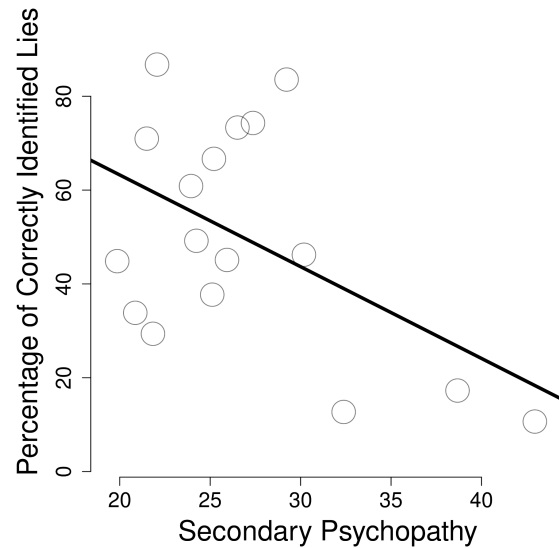


Figure 2. Secondary Psychopathy is correlated with the ability to tell lies. People with higher scores of secondary psychopathy have a better ability to tell lies (and therefore have fewer people correctly identify their lie). To test this, 17 students were asked to record themselves lying on video and then complete two personality trait surveys. Other students then watched these videos and assessed whether they thought the speakers were lying or not. By performing a Pearson correlation coefficient test, a significant correlation was found between the participants' personality traits and their lie detection score with a p-value of less than 0.05. A scatterplot was created to show the students' secondary psychopathy scores plotted against the percentage of the audience who correctly identified their lies. Data points were jittered to avoid overlap.

Our initial hypothesis regarding telling lies was that extraversion and agreeableness might have a significant correlation with telling lies, meaning that participants who scored high on these personality traits might be less likely to tell lies accurately. However, **the results showed that people characterized by agreeableness traits ($r(17)= 0.43, p=0.041$, Figure 3) were worse at telling lies, which could be due to discomfort or guilt when lying to others. Conscientiousness and neuroticism traits tested stronger for telling lies but did not reach a significant level. Openness to experience and extraversion characteristics in people did not show any significant correlation with lying (Table 1).**

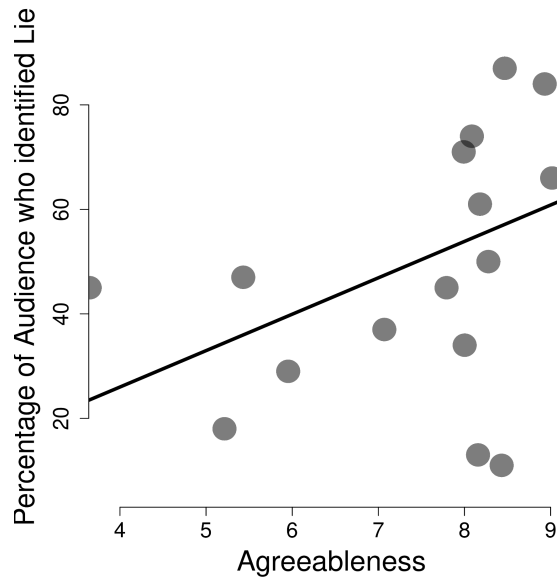


Figure 3. Agreeableness is positively correlated with the likelihood of one’s lie being detected.

This scatterplot shows the students’ agreeableness scores plotted against the percentage of the audience who correctly identified their lies. Data points were jittered to avoid overlap. To test this, we had 17 students record themselves on video lying and then complete two surveys to evaluate their personality traits. Other students watched these videos and evaluated whether or not they them to be lying. A Pearson correlation coefficient test was performed to measure the relationship between the participants’ personality traits and their lie detection score, finding a significant correlation with a p-value of less than 0.05.

	Openness to experience	Consciousness	Extraversion	Agreeableness	Neuroticism	Primary Psychopathy	Secondary Psychopathy
Detecting Lies	-0.23	0.14	0.39*	0.10	0.02	0.33*	0.23
Telling Lies	0.15	-0.34	-0.15	0.43*	-0.20	0.076	-0.51*

Table 1. Correlation between telling and detecting lies based on personality traits. These values in the table are r-values and the ones with asterisks are significant (p-value < 0.05).

Discussion

A significant positive relationship was found between extraversion and lie detection ability, as well as a positive correlation between primary psychopathy and lie detection proficiency. Also, a significant correlation was found between secondary psychopathy scores and agreeableness scores, and lying ability. Our hypotheses about extraversion and lie detection ability (Figure 1), as well as how psychopathy (Figure 2) can influence lying behavior, have been supported by these findings. There was no support for the hypotheses that conscientiousness, openness to experience, and agreeableness (Figure 3) could negatively affect lying. Overall, the study emphasizes the complex relationship between personality traits and telling and detecting lies.

Our results are consistent with prior research by Isenberg (4). Isenberg found that participants who scored low on agreeableness were better liars and we found the same thing. This means that people who lack agreeable traits are better liars because they ultimately are people who lack trust and compliance, which might explain their stronger lying ability. In addition, because agreeable people tend to be modest and tender-minded, people with these traits would reasonably be less likely to want to deceive others and lie (2). Therefore, we could conclude that agreeableness traits could be one of the primary explanations for why people do or do not lie.

On the other hand, our research is inconsistent with Malmstrom's research, which shows that detecting lies was not related to psychopathy (primary and secondary) in their sample (6). This could be because psychopathy levels were very low in their sample, which made it difficult to establish a pattern (7). However, in our study, we found that individuals who scored high in primary psychopathy were more adept at detecting lies, while those with higher secondary psychopathy scores were better at telling lies. This is likely because the participants in our study had a larger range of scores on their psychopathy tests. This source strengthens my claim by suggesting that other personality traits, such as psychopathy, may be linked to the ability to detect or tell lies. This might make sense because primary psychopathy is characterized by traits such as charm and a lack of emotional expression, which could make people more attuned to reading others' emotions and identifying when these emotions are fake. Secondary psychopathy is associated with impulsivity and a disregard for social conventions, which could lead to people acting on impulses without regard for the consequences, making an individual want to deceive others and be less able to stop themselves from lying (1). This additional experience with lying might make the ability stronger in these people.

Lastly, we found a significant positive relationship between extraversion and lie-detection ability. While our results do not align with any prior sources, it is important to note that none of our sources measured lie detection abilities. Instead, we can suggest a possible explanation for our findings. Individuals who exhibit extroverted characteristics tend to have large social networks and are exposed to a diverse range of personalities and communication styles (2). This exposure could potentially enhance their ability to recognize patterns of behavior associated with lying and improve their lie-detection skills.

In our study, we identified two limitations. One was we only had our participants tell one lie, which may not be an accurate representation of the multiple lies that are told in real-world situations. Our suggestion would be to introduce a range of lies to tell to mimic real-world scenarios more accurately. Secondly, we had the participants lie on video, which could have made it harder for the guesses to pick up on nonverbal cues, compared to lying in person. Also, there is a high chance for distractions when students are instructed to watch a video in a group setting. We suggest that other researchers incorporate different communication channels such as written scenarios, games in person, or even audio recordings to vary how the lies are presented. This might be beneficial to test different ways of lying. Also incorporating social media in the study could be beneficial since most lying tends to be on social media. Researchers may even find more relationships by incorporating a larger sample size.

According to our research, there is a correlation between certain personality traits (agreeableness and extraversion), as well as traits associated with psychopathy, and the ability to both detect and tell lies. This is important because it helps us better understand those likely to either lie or identify a lie, which could be beneficial in a high-stakes situation like a court case. While a select few people were exceptional lie detectors, we found that on average the participants in our study detected lies with only a 49.7% accuracy rate, which is essentially the same as random guessing. The ability to predict who can identify lies is therefore very useful.

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