WILL YOU LIE EVEN IF I'LL FIND OUT?
THE DARK TRIAD, DECEPTION, AND EX POST TRANSPARENCY

A Thesis
by
SAMANTHA HARRIS

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APPROVED BY:

_____
Dr. Andrew R. Smith
Chairperson, Thesis Committee

_____
Dr. Twila Wingrove
Member, Thesis Committee

_____
Dr. Doris Bazzini
Member, Thesis Committee

_____
Dr. Rose Mary Webb
Interim Chairperson, Department of Psychology

_____
Max C. Poole, Ph.D.
Dean, Cratis D. Williams School of Graduate Studies

Abstract

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Samantha Harris
B.S., Lees-McRae College
M.A., Appalachian State University

Chairperson: Dr. Andrew Smith

Deception is an influential part of interpersonal behaviors. Deception comes in many forms

and appears to be related to personality features such as narcissism, psychopathy, and

Machiavellianism. These traits, collectively known as the Dark Triad, are hallmarked by self-

centeredness, lack of empathy, and manipulativeness. Another factor that may influence

deception is ex post transparency—that is, the likelihood that the deception will be

discovered by the person being deceived. What is not known is whether the relationship

between the Dark Triad and deception depends on the level of transparency. In my study,

participants performed a task and were given the opportunity to send either truthful or

deceptive information to a co-participant. Before the task began, I varied the level of

transparency; the participants were told either that the co-participant would not find out about

any deception, the co-participant would find out about any deception, or there would be a

50% chance the co-participant would find out about the deception. Finally, participants

completed a measure of the Dark Triad of personality. Results indicated that of the Dark

Triad traits, Machiavellianism was the only element to positively predict deception. Contrary to my prediction, transparency was not found to influence rates of deception. Finally, the relationship between Machiavellianism and deception was not significantly influenced by the level of transparency. This study demonstrates the need for future research to study under what conditions people choose to lie and how to better predict who may lie to another person dependent on various circumstances.

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The Dark Triad, Deception, and Ex Post Transparency

Samantha Harris

Appalachian State University

Will You Lie Even If I'll Find Out?

The Dark Triad, Deception, and Ex Post Transparency

People do not tell the truth at all times. Lying is something with which many people have experience on a daily basis either as a recipient or as a perpetrator. While lying is commonplace, there are a variety of reasons and situations that may produce lying behaviors. For example, a number of personality characteristics are related to people's willingness tell a lie (e.g., psychopathy, Machiavellianism; Baughman, Jonason, Lyons, & Vernon, 2014; Jonason, Lyons, Baughman, & Vernon, 2014; McLeod & Genereux, 2008; Roeser, McGregor, Stegmaier, Mathew, Kübler, & Meule, 2016). Furthermore, some situations may be more conducive to lying than others (e.g., whether the deception is likely to be revealed or not; Behnk, Barreda-Tarrazona, & García-Gallego, 2014). An important question that has not yet been answered is whether personality characteristics interact with situational factors that influence lying. The current study examined how the Dark Triad of personality and the likelihood of the deception being revealed are associated with the amount of lying that occurs.

In this introduction, I will first define deception and describe numerous factors related to the likelihood that a person will lie. Next, I will define the Dark Triad of personality and review the previous research linking the Dark Triad to deceptive behavior. Lastly, I will describe my study and explain why the link between the Dark Triad and deception may be stronger when the deception is likely to be revealed to the person who was deceived as compared to when the deception will not be revealed.

Deception

Deception is "the transmission of information that intentionally misleads others" (Levine & Schweitzer, 2015, p. 89). This term is often used interchangeably with lying. There are many

types of lies as well as many reasons for why a person might lie. Someone might tell an altruistic lie in order to make another person feel better (Gneezy, 2005). Or, someone might lie in order to gain something (e.g., money) from the situation. For example, a car salesperson might overstate the performance of a car or exaggerate its fuel economy in order to make the car more appealing to a customer. By doing this, the salesperson may make a commission from selling the car, but only because he lied about the performance to the customer. In my study, I focused on these types of lies, typically referred to as self-gain lies—lies told with the explicit goal of gaining some benefit (Gneezy, 2005).[1]

While lying is commonplace, some people seem to lie more than others, and some situations appear to facilitate lying more than others. With regards to individual differences, one's personality may predict one's propensity to lie. Elaad and Reizer (2015) assessed participants' Big Five scores (openness to experience, conscientiousness, extraversion, agreeableness, and neuroticism) as well as their self-assessed behaviors of lying, truth telling, detection of lies, and believability of lies. Results of the study showed that openness to experience was associated with higher likelihoods of telling and detecting lies. Extraversion was associated with the ability to convincingly tell lies as well as accurately detecting lies. The other three Big Five personality domains (conscientiousness, agreeableness, and neuroticism) were not associated with lie telling abilities.

In addition to examining how personality traits are associated with deception, numerous researchers have examined the relationship between gender and lying. Unfortunately, investigations into this relationship are quite mixed. Based on self-reported frequency of lying, Jonason et al. (2014) found that, overall, men lied more than women. Similarly, using a behavioral measure of lying, Dreber and Johannesson (2007) found that men were more likely to

lie for financial gain than women. However, using the same behavioral measure of lying, Childs (2012) and Gylfason, Arnardottir, and Kristinsson (2013) found that men and women were equally likely to lie for financial gain. These studies provide evidence that the relationship between gender and lying is unclear and warrants more investigation.

Aside from individual differences predicting deception, numerous situational factors appear to facilitate or discourage deception. For example, whether a lie is delivered directly or indirectly to a recipient influences rates of lying. In a study by Van Zant and Kray (2014), participants could send either a truthful or deceptive message to a co-participant, with greater monetary incentive attached to lying. The messages were sent in one of two ways: face-to-face (from one participant to the other) or by way of a messenger (the participant would hand the message to a third person who would then hand the message to the co-participant). Van Zant and Kray found that participants were less likely to lie in the face-to-face context than when using a messenger to transport the message to the other participant. Presumably, the participants were more willing to lie when they were not interacting directly with their co-participant because of reduced attention to social implications or morality. Furthermore, face-to-face contact with the target of a lie can call attention to many potential negative outcomes (e.g., ostracism from friends or the rejection from a romantic partner), which may prevent lying in direct encounters. Using an indirect means to deliver a lie may reduce the social implications of lying that typically encourage honesty.

What a person has to gain from telling a lie (or lose from not telling a lie) is another factor that influences deception. For example, a person might be more willing to lie and claim a lost wallet as his/her own if he/she knows that the wallet contains $50 as compared to if it only contains $5. Gneezy (2005) examined the influence of the amount of money people might gain

on people's willingness to lie to a co-participant. As predicted, the more money people could gain from telling a lie, the more likely they were to tell a lie (see also, Behnk et al., 2014).

One factor that might be thought to be associated with a decrease in lying is ex post transparency—the likelihood of a lie being exposed. Consistent with this assumption, Behnk et al. (2014) hypothesized that people's willingness to tell a lie to a co-participant would decrease as the likelihood of the co-participant finding out about the lie increased. In order to test their prediction, they had participants engage in a task where one participant could send an honest or deceitful message to a co-participant. Critically, before sending the message, the participant was told one of three things: 1) the co-participant would not be told whether they sent an honest or deceptive message, 2) the co-participant would be told whether they sent an honest or deceptive message, or 3) there was a 50% chance that the co-participant would be told whether they sent an honest or deceptive message. Surprisingly, Behnk et al. found that, overall, transparency did not significantly influence lying. In one specific context, people lied significantly less in the 50% condition as compared to the other two conditions. However, this finding did not generalize to other contexts, so Behnk et al. concluded that ex post transparency has a very small, if any, effect on deception.

Dark Triad

As mentioned above, there are several factors that are related to the number of self-gain lies someone might tell. One particular trait that has been found to be related to motives for self-gain is the Dark Triad, which is a compilation of three negative personality characteristics: narcissism, Machiavellianism, and psychopathy. The Dark Triad was first coined by Paulhus and Williams (2002), who examined the three malevolent personality traits for similarities. While

narcissism, Machiavellianism, and psychopathy have been shown to be related constructs, they are also distinct personality traits.

Hare (2003) described psychopathy as consisting of several characteristics including impulsive behavior, being cold or callous, holding antisocial attitudes, and maintaining irresponsible or cavalier lifestyles[2]. People considered to be narcissistic are characterized as thinking they are superior to others and also believe that they need to demonstrate this superiority constantly (Krizan & Bushman, 2011). Narcissistic people are also sensitive to information about their self-image and internalize information when they feel that their ego is being attacked (vanDellen, Campbell, Hoyle, & Bradfield, 2011). Lastly, Machiavellianism is characterized by being cynical, emotionally detached, and being manipulative towards others (Christie & Geis, 1970). Paulhus and Williams (2002) argued that, while distinct, the traits were similar in behaviors such as dishonesty, self-flattery, aggressiveness, and emotional indifference, and thus should be grouped together into a "Dark Triad."

Since its conception, the Dark Triad has been linked to many negative behaviors. For example, people who score high on the Dark Triad are more likely to have short-term mating strategies (Jonason et al., 2014). Similarly, high scores on the Dark Triad are associated with negative relationship behaviors; those scoring high on the Dark Triad reported leaving relationships to be with other people and also reported encouraging other people to leave their partner to be with them instead (Jonason, Li, & Buss, 2010). In an academic context, people who score high on the Dark Triad report falsely earning extra credit (Paulhus & Jones, 2012), copying from other students in a class (Nathanson, Paulhus, & Williams, 2006), and plagiarizing on written assignments (Williams, Nathanson, & Paulhus, 2010).

In addition to the studies examining the relationship between the Dark Triad and negative behaviors in general, more relevant to my study is the research investigating how the traits relate to lying and deceptive behaviors. While most studies look at the Dark Triad as one concept, many do make the distinction between the three components of the Dark Triad and test each factor separately. Because the three Dark Triad traits all differentially relate to lying, it is important to examine them separately.

Machiavellianism. Machiavellianism, in particular, seems to be highly predictive of lying frequency. As mentioned above, Machiavellianism is thought of as a manipulative trait, so it is perhaps not surprising that it is related to lying because lying requires the manipulation of a person's perceptions or beliefs. In a study examining the relationship between Machiavellianism and deception, Jonason et al. (2014) had participants fill out self-report measures of lying including the types of lies they told as well as the frequency of such behaviors. After controlling for narcissism and psychopathy, Machiavellianism scores were positively associated with the number of total lies people reported telling. Similarly, McLeod and Genereux (2008) found that Machiavellianism was a significant predictor of self-reported self-gain lies. Finally, Baughman et al. (2014) found that Machiavellianism was positively related to lying in an academic context (e.g., lying to a professor about plagiarizing a paper).

Roeser et al. (2016) examined the relationship between the Dark Triad and two different behavioral measures of deception—lying to a co-participant about how to earn more money and lying about one's performance on a task to a research assistant. Roeser et al. found that Machiavellianism predicted the likelihood that participants would lie to a co-participant; the higher the Machiavellianism score, the more likely it was that the participant would tell a lie for financial gain. Machiavellianism, however, did not predict lying about one's performance.

Narcissism. Narcissism appears to be, at most, weakly related to deception. A number of studies have failed to find a significant relationship between narcissism and deception (Azizli et al., 2016; Roeser et al., 2016). With that being said, narcissism may be related to self-gain lies because those high in narcissism believe that they are better than others in many ways and that they are more deserving of rewards. In support of that idea, Jonason et al. (2014) found a significant and positive relationship between narcissism and the number of self-gain lies people reported telling. This relationship remained significant while controlling for both Machiavellianism and psychopathy.

Psychopathy. Psychopathy is generally thought of as the non-empathetic trait of the Dark Triad. One factor that might prevent people from lying is that they are reluctant to hurt another person. Therefore, people who lack empathy (i.e., people high in psychopathy) would not be constrained by another person's possible negative feelings. In support of this idea, Baughman et al. (2014) found people who scored high on psychopathy reported being more likely to lie in a mating context (e.g., lying to a partner about having a date with an ex-partner). They also found that higher scores in psychopathy were linked to reporting positive emotions when lying in both the academic and romantic contexts. Similarly, Jonason et al. (2014) found that psychopathy was positively correlated with lies that were told with no reason and the number of people to whom the participants reported lying.

As mentioned above, Roeser et al. (2016) found that Machiavellianism predicted lying to a co-participant, but not lying about performance on a task. In contrast to Machiavellianism, psychopathy was not related to lying to a co-participant, but was positively associated with lying about their performance. The authors explained this difference by noting that the task that involved lying to a co-participant was cognitively demanding whereas lying about one's

performance was less demanding. Therefore, perhaps Machiavellianism predicts more

cognitively demanding deception whereas psychopathy is related to impulsive deception. In

support of their conclusion, Jones and Paulhus (2011) demonstrated that people who score high

in psychopathy have poor self-regulation abilities. Baughman et al. (2014) found that

Machiavellianism was related to more thorough and detailed planning of deceptive behavior.

Limitations of Previous Research Investigating the Dark Triad and Deception

There have been a few studies that have examined the Dark Triad and deception but a key

element is that the majority of those studies used self-reported measures of deception. This is

problematic because it is not clear whether participants who score highly on the Dark Triad are

actually more prone to deceiving others or whether they are simply more willing to admit to

these negative behaviors. Participants who score highly on the Dark Triad may be more willing

to admit to lying because they feel a general lack of remorse over the gullibility of others, a

heightened self-deservedness, and a disregard for the social implications of the lie or the feelings

of others. All that can be said confidently is that there exists a relationship between the Dark

Triad and self-reported lying. Thus, a study that incorporates a behavioral measure of deception

is needed to see whether or not this relationship truly exists outside the realm of self-reported

measures.

Although somewhat limited, one study has examined the relationship between the Dark

Triad and a behavioral measure of deception. As mentioned earlier, Roeser et al. (2016)

measured self-gain lies through the use of the sender-receiver task. In this task, the participants

were told that they would be the "sender" and would be sending a message with information to

another participant—the "receiver"—although there actually was no other participant. The

participant had the opportunity to lie to the receiver in the hope that this would allow them to

gain more money during the study. Roeser et al. found that Machiavellianism positively

predicted deceptive messages being sent to the "receiver." No other components of the Dark

Triad were found to predict deceptive behaviors towards another person.

While this study did examine the construct of deception using a behavioral measure, it is

limited in a number of important ways. First, this study was completed online and participants

were presumably interacting with an anonymous peer. While this does model some real-world

interactions, many opportunities for deception take place in a face-to-face context. Because

people are less willing to lie in a face-to-face context (Van Zant & Kray, 2014), it is possible that

the relationship between the Dark Triad and deception will differ in a face-to-face context, where

participants physically hand each other messages, versus out loud, where participants verbally

exchange information.

Another potential limitation with the study by Roeser et al. (2016) was that the

participants were given only one opportunity to lie to the co-participant. By only allowing the

participants one opportunity, this might have reduced the desirability to lie due to pressure (only

being allowed one opportunity to lie or not) or guilt associated with social consequences

(deciding whether it is worth it or not if possibly dealing with that person later). A related issue

is that only one payout structure (i.e., the amount that could be gained from deception) was used.

Therefore, it is possible that the relationship the researchers found is specific to the unique

payout used in that study.

Finally, it is worth noting that Roeser et al.'s (2016) participants were told that their

actions (i.e., sending a truthful or deceptive message) would not be revealed to their co-

participant. While this instruction has been used in previous studies (e.g., Childs, 2012; Gneezy,

2002; Gylfason et al., 2013), it does not seem to model most real-world situations. In most

situations, there is a chance that deception might be revealed. That is, the potential deceiver must weigh the possible benefits of the lie with the possible costs of being caught in the lie. It is unknown whether the relationship between the Dark Triad and deception varies depending on the likelihood of a lie being revealed.

In summary, all that is currently known is that the Dark Triad is associated with more deception when interacting with an anonymous co-participant in an online setting when the co-participant is guaranteed not to find out about the lie. While this is useful information, it represents a very specific set of circumstances. What is not known is how the Dark Triad relates to deception when interacting with a co-participant in a face-to-face context, and whether this relationship depends on the likelihood that the co-participant will find out about the deception.

Current Study

Participants in the current study were faced with an interpersonal task where they had an opportunity to lie to a co-participant in order to win money. Before starting this task, they were randomly assigned to one of three conditions: a 0% condition, a 50% condition, or a 100% condition. These ex post transparency conditions correspond to the proportion of participants who received information about the rounds at the conclusion of the study. In the 0% condition, neither participant received information about the rounds; in the 50% condition, one of the two participants received information about the rounds; and in the 100% condition, both participants received information about the rounds. After completing the task, the participants then answered individual difference measures to ascertain their Dark Triad scores.

The current study extended previous research in a number of important ways. First, the study was conducted in a face-to-face setting. Second, it included multiple payouts to ensure that the relationship between the Dark Triad and deception is not dependent on one unique set of

payouts. Third, it manipulated the likelihood of deception being revealed. While ex post

transparency has been examined in previous research investigating deception (Behnk et al.,

2014), this has not yet been done in a face-to-face context. Perhaps more importantly, no studies

have examined whether the relationship between the Dark Triad and deception varies as a

function of transparency. Thus, the current study will fill this gap in the literature.

Hypotheses

   Hypothesis 1. The higher a person's score on Machiavellianism, the more the person

would lie. This hypothesis is consistent with the notion that those high on Machiavellianism tend

to think that it is acceptable to manipulate other people (Christie & Geis, 1970; McLeod &

Genereux, 2008). It is also consistent with numerous studies that found a positive correlation

between Machiavellianism and deception (e.g., Baughman et al., 2014; Jonason et al., 2014;

Roeser et al., 2016).

   Hypothesis 2. Participants would lie more often when there is a smaller likelihood that

the co-participant will find out about the lie. I hypothesized that this relationship would be

shown due to the social consequences of deception. Behnk et al. (2014) did not find that

transparency mattered in their study, however, they used an anonymous version of the sender-

receiver task. I believe that because my study utilized a face-to-face version of the task,

transparency will influence lying.

   Hypothesis 3. There would be an interaction between the transparency condition and

Machiavellianism. Specifically, as transparency increases (i.e., as it becomes more likely that a

lie will be discovered), the relationship between Machiavellianism and deception will get

stronger. I expected to find this relationship because people who are low in Machiavellianism

will be more influenced by the social consequences of deception than those high in

Machiavellianism. For example, in the 100% transparency condition (where both participants will receive information about the honesty of the messages that were sent), a person who scores low in Machiavellianism might be concerned about appearing cruel or manipulative; a person high in Machiavellianism might be less concerned with the feelings of others, potentially feeling that manipulating other people is acceptable and necessary. On the other hand, in the 0% condition (i.e., the condition where no deception will be revealed), concern over social appearance would be less applicable since their co-participant would not receive information about the sender's choice. Therefore, people low in Machiavellianism and high in Machiavellianism will lie to the co-participant at similar rates in the 0% transparency condition.

Method

Participants

I had 190 undergraduate students complete the study. Of those participants, 24 were excluded from analyses because they stated that they knew their co-participant outside of the study. A power analysis revealed that with the sample of 166 participants, assuming a medium effect size, the observed power was 82%. The sample included 38% men ($M_{age} = 20.62$, $SD_{age} = 2.11$) and 62% women ($M_{age} = 19.80$, $SD_{age} = 1.30$). They received partial course credit for their participation and signed up through the psychology department subject pool (SONA). They also received compensation from the sender-receiver task (described in detail below). To be eligible for the study, participants were required to be at least 18 years old. The study was approved by Appalachian State University's IRB (see Appendix A).

Measures

Sender-receiver task. The sender-receiver task is a behavioral measure of deception. It was originally developed by Gneezy (2005) and was recently simplified by Gneezy, Laske, and

Saccardo (2016). In this two-person task, participants were assigned to the role of the sender or receiver. The sender first rolled a die and then recorded the number that was rolled on the computer. Next, the sender wrote down a number (one through six) on a piece of paper that said "The number rolled was ___" leaving them space to indicate what number they wished to send. This message could be truthful (e.g., "the number rolled was 6," if in fact six was rolled) or deceptive (e.g., "the number rolled was 4," when in fact a six was rolled). They were then asked to report which number they wrote down on the paper to send to the receiver on the computer. Once they had selected the number, they were prompted to hand the piece of paper directly to the receiver. After giving this message to the receiver, the receiver was asked to report on the computer what number was sent to them. After indicating the sent number, the receiver then attempted to guess the number that was rolled by the sender. Once the receiver made his or her guess, the round ended and another began with the sender rolling the die. This continued for three rounds before the participants switched roles and the receiver, who then would become the sender, started another round. This lasted another three rounds. Before beginning the task, the participants viewed a mock round of the task to familiarize themselves with the task.

Prior to sending a message, the sender was told that if the receiver correctly guesses the number rolled, the receiver would earn money and the sender would earn nothing. If the receiver guesses incorrectly, the sender would earn money and the receiver would earn none. For example, the sender might have been shown this information:

Correct guess: $0 to you (the sender); $2 to the other person (the receiver)

Incorrect guess: $2 to you (the sender); $0 to the other person (the receiver)

During the study, the participants went through three rounds of the sender-receiver task, each with different payouts (see Appendix B for the payouts). Participants' rates of deception were

assessed by examining the percentage of the rounds that the sender sent a dishonest message. The sender-receiver task has been used in numerous studies focusing on a behavior (rather than self-reported) measure of deception (e.g., Behnk et al., 2014; Childs, 2012; Dreber & Johannesson, 2007; Gneezy, 2002; Gylfason, et al. 2013; Roeser et al., 2016).

Short Dark Triad (SD3). The SD3 (see Appendix C) is a 27 item, self-report questionnaire used to assess a person's Dark Triad score (Jones & Paulhus, 2014). The scale is made up of three subscales: psychopathy, narcissism, and Machiavellianism with each subscale comprised of nine items. Participants are presented with the 27 items (without indication of which subscale the item belongs) and asked to rate the degree to which they agree with each statement. Each statement is rated on a 1 to 5 Likert scale with 1 meaning strongly disagree and 5 meaning strongly agree with the statement. A sample item from the psychopathy section is "Payback needs to be quick and nasty." A sample item from the narcissism section is "People see me as a natural leader." A sample item from the Machiavellianism section is "Most people can be manipulated." Cronbach's alpha for the subscales were $\alpha = .68$ for narcissism, $\alpha = .72$ for psychopathy, and $\alpha = .74$ for Machiavellianism (Jones & Paulhus, 2014). The current study found Cronbach's alpha for the SD3 measure was $\alpha = .83$ overall, and for the subscales were $\alpha = .69$ for narcissism, $\alpha = .77$ for psychopathy, and $\alpha = .72$ for Machiavellianism.

IPIP-NEO. As an exploratory measure, the participants completed the IPIP-NEO (International Personality Item Pool – Neuroticism, Extraversion & Openness). The IPIP-NEO is based on the NEO PI-R (Costa & McCrae, 1992). The version the participants completed features a 50-item questionnaire that assesses general personality characteristics in five categories: neuroticism, extraversion, openness to experience, agreeableness, and conscientiousness. A sample item from the neuroticism portion of the IPIP NEO is "I panic

easily." A sample item from the extraversion portion of the IPIP NEO is "I feel comfortable around people." A sample item from the openness to experience portion is "I enjoy hearing new ideas." A sample item from the agreeableness portion is "I believe that others have good intentions." A sample item from the conscientiousness portion of the IPIP NEO is "I make plans and stick to them." This scale is reliable in testing each element with Cronbach's alphas being .86 for neuroticism, .86 for extraversion, .82 for openness to experience, .77 for agreeableness, and .81 for conscientiousness (Goldberg et al., 2006).

Procedure

For each session, two participants were required. Upon coming to the lab, one participant was randomly assigned to the sender role and the other assigned the role of receiver. Both participants were also randomly assigned to one of the three transparency conditions (0%, 50%, or 100%). After reading the informed consent document, the participants were given basic information about their task during the experiment including descriptions of their assigned role (see Appendix D for complete instructions). They then read information about their transparency condition. Specifically, participants assigned to the 0% condition were explicitly told that their responses would be anonymous and the other participant would not see the outcome of the individual rounds. Those in the 50% condition were instructed that one participant would be chosen at random and would receive all the information about each round (i.e., the number rolled by the sender, the message sent by the sender, and the number guessed by the receiver). Participants in the 100% condition were told that both participants would receive all the information about the rounds.

After receiving the instructions about the task and the transparency information, the participants went through three rounds of the sender-receiver task. After completing three

rounds, the participants switched roles. The participants read instructions about their new roles, reread the transparency instructions, and then completed three rounds of the sender-receiver task. Next, the participants completed the individual difference measures (described in the Measures section), were asked their age and gender, and were asked if they knew the other participant and how they knew that person (if applicable). Finally, one round was chosen at random and the participants were paid according to the outcome of that round. In order to make payment random, the research assistant rolled a die and selected the round number that corresponded with the number rolled. For participants in the 50% condition, one person was chosen at random to view the outcomes of the task before they were paid. The outcomes were presented as a sheet of paper displaying all the information about the rounds which was filled out by the research assistant. Participants in the 100% condition both viewed the outcomes of the study before being paid. Participants were told information about their assigned condition in the instructions before beginning the task.

During each session, the research assistant conducting the experiment stood behind the participants to monitor their progress. The research assistant recorded each participants' responses to the sender-receiver task on a sheet of paper for two reasons; this allowed the research assistant to see if the participants made any mistakes during the session and also gave a record of what happened during the session to be viewed by participants in the 50% and 100% conditions.

<div align="center">**Results**</div>

I first created an average lying variable by calculating the percentage of rounds a participant lied across the three rounds that they were the sender. This produced a measure of each participant's lying behavior during the task. Taking the average of participant's Short Dark

Triad 27-question measure produced their SD3 score. An average of the nine questions from

each of the three subsections of the SD3 produced participants' Machiavellianism, narcissism,

and psychopathy scores.

Relationships between Measured Variables

Before testing my hypotheses, it is important to examine the relationships between

measured variables. Correlation coefficients between participants' average scores of lying, age,

SD3 scores, and each element of the SD3 are presented in Table 1 (descriptive statistics for each

measure are also reported in Table 1). Age was significantly correlated with average lying;

people who were older lied less than younger people. Consistent with Paulhus and Williams

(2002), Machiavellianism, Narcissism, Psychopathy, and SD3 scores were all significantly

correlated with each other.

I also conducted independent samples t-tests to compare men and women on the amount

of lying, their SD3 scores, each element of the SD3, and age (see Table 2). Overall, women

tended to lie more than men. Men scored higher on Dark Triad traits than women. And finally,

men were slightly older than women.

While the results revealed that women were more likely to lie than men, there were no

differences between people's willingness to lie to men or women. Specifically, the amount of

lying was similar regardless of whether the co-participant was a man ($M = .54$, $SD = .34$) or a

woman ($M = .53$, $SD = .36$), $t(164) = .16$, $p = .874$, $d = .03$. Also, people were equally willing to

lie to a co-participant of the same gender ($M = .55$, $SD = .37$) or opposite gender ($M = .52$, $SD =$

$.34$), $t(164) = -.56$, $p = .578$, $d = .09$.

Finally, it is important to note that the role to which participants were initially assigned

did not influence their lying behaviors. Participants assigned to be the sender first ($M = .55$, $SD =$

.36) sent deceptive messages a similar percentage of times as compared to participants assigned to be the receiver first ($M = .52$, $SD = .35$), $t(164) = .59$, $p = .558$, $d = .09$.

Hypothesis Testing

To test my hypotheses, I conducted an ANCOVA examining the percentage of rounds the participants sent a deceptive message. I included transparency (three levels: 0%, 50%, 100%) and Machiavellianism (a continuous measure) along with the interaction term as factors. Because both gender and age were related to lying, I included these variables as covariates. Specifically, in this model, I included the factors of gender, transparency, Machiavellianism, and age, as well as the interaction between transparency and Machiavellianism. Before running the analysis, the variables were mean-centered. This analysis found that Machiavellianism was significantly related to the average amount of lying whereby higher Machiavellianism scores were related to more lying, $F(1, 158) = 7.07$, $p = .009$, $\eta_p^2 = .04$—a finding that supports my first hypothesis. There was not a significant main effect of transparency on lying, $F(2, 158) = .136$, $p = .259$, $\eta_p^2 = .02$. Overall, participants were equally willing to lie regardless of whether or not the co-participant would find out about the lie. This does not support my second hypothesis.

The interaction between transparency and Machiavellianism was also not significant, $F(2, 158) = .924$, $p = .399$, $\eta_p^2 = .01$. As shown in Figure 1, the relationship between Machiavellianism and lying was similar across the three transparency conditions. This does not support my third hypothesis. Gender was related to lying with women lying more than men, $F(1, 158) = 11.93$, $p = .001$, $\eta_p^2 = .07$. Finally, age was not related to lying, $F(1, 158) = 1.51$, $p = .221$, $\eta_p^2 = .01$.

As a follow-up analysis, I conducted three separate regression analyses—one for each of the transparency conditions—predicting the amount of lying from Machiavellianism scores, gender, and age. In the 0% condition, individuals' Machiavellianism score, $b = .26$, 95% CI [.09,

.43], p = .003, and gender, b = .29, 95% CI [.09, .49], p = .006, significantly predicted the

percentage of lies told. Age, b = -.02, 95% CI [-.06, .02], p = .287, was not a significant

predictor. In the 50% condition, gender was a marginally significant predictor, b = .22, 95% CI [-

.01, .44], p = .059, while Machiavellianism, b = .09, 95% CI [-.12, .30], p = .385, and age, b =

.00, 95% CI [-.07, .08], p = .975, were not. And finally, in the 100% condition,

Machiavellianism, b = .08, 95% CI [-.09, .25], p = .342, gender, b = .13, 95% CI [-.06, .33], p =

.184, and age, b = -.03, 95% CI [-.10, .03], p = .309, were not significant predictors. Taken

together, these analyses reveal that Machiavellianism and gender were most strongly related to

lying in the 0% condition. These results are contrary to the third hypothesis.

My analyses found that, overall, Machiavellianism was related to deception. An

important question is whether Machiavellianism is the strongest predictor of deception among

the three Dark Triad traits. To test this question, I conducted a second ANCOVA including all

the factors described above, but also including narcissism and psychopathy as covariates.

Specifically, Machiavellianism, transparency, and the Machiavellianism X transparency

interaction term were interested as factors in the model. Age, gender, narcissism, and

psychopathy were entered as covariates. In this analysis, Machiavellianism was marginally

significantly related to the average amount of lying whereby higher Machiavellianism score was

related to more lying, $F(1, 156)$ = 3.42, p = .07, η_p^2 = .02. Narcissism, $F(1, 156)$ = .06, p = .813,

η_p^2 = .00, and psychopathy, $F(1, 156)$ = .79, p = .376, η_p^2 = .01, were not related to lying. As

before, there was a significant effect of gender, $F(1, 156)$ = 12.21, p = .001, η_p^2 = .07. There was

not a significant effect of transparency, $F(2, 156)$ = 1.56, p = .214, η_p^2 = .02, age, $F(1, 156)$ =

1.54, p = .22, η_p^2 = .01, nor was there a significant Machiavellianism X transparency interaction,

$F(2, 156) = .98$, p $=.378$, $\eta_p^2 = .01$. This analysis showed that, in the current study,

Machiavellianism was clearly the strongest predictor of lying among the three Dark Triad traits.

Discussion

This study sought to examine the relationship between the Dark Triad and lying while

participants had the knowledge that their co-participant would, would not, or had a 50% chance

of finding out whether they lied or told the truth. As predicted, there was a positive relationship

between Machiavellianism and lying. However, the knowledge that the co-participant would find

out about the deception did not influence the rates of deception, nor did it significantly moderate

the relationship between Machiavellianism and lying. In addition to these primary results, I also

found that while men scored higher on the Dark Triad, women were more likely to lie during the

task.

The finding that Machiavellianism was positively correlated with lying is consistent with

past research. Closely paralleling my study, Roeser et al. (2016) found that the only element of

the Dark Triad that predicted choosing a dishonest message to send in the sender-receiver task

was Machiavellianism such that higher Machiavellianism scores were associated with a greater

likelihood of lying. Jonason et al. (2014) found support for the same conclusion in their study of

the Dark Triad and lying through the use of a self-report measure of lying during the past week.

Jonason et al. found that overall, Machiavellianism was the only element of the Dark Triad to be

significantly related to all types of lies measured in their study. Somewhat contradictory,

Baughman et al. (2014) used a self-reported measure of lying behavior to ascertain how the Dark

Triad is related to lying. They found that each of the Dark Triad traits were positively correlated

with the frequency of lies told.

Of the Dark Triad elements, it makes sense that Machiavellianism is the most related to lying behavior due to Machiavellianism's distinct manipulative qualities such as emotional detachment, being cynical, and thinking that others can be easily manipulated. Emotional detachment allows those high in Machiavellianism to not associate hurting others' feelings with their actions, which aids in the ability to justify lying. Also, believing that others can easily be manipulated and thinking that manipulating others is a good way to get what they desire certainly does not inhibit lying for those high in Machiavellianism.

Contrary to my hypothesis, transparency did not influence deception in my study. Though I did not predict this outcome, this is mostly consistent with previous research. Specifically, Behnk et al. (2014) found that transparency did not influence lying except in one payout structure round where if the sender lied, he/she would only get $1 more than the receiver, but if the sender told the truth, the receiver would receive $10 more than the sender. In this context, senders lied significantly less in the 50% condition than they did in the other two conditions of the study. My study not only supports Behnk et al.'s conclusion that, overall, transparency has a weak influence on lying behavior, but extends the finding to a new context (i.e., in a face-to-face context). One possible explanation for the lack of an effect of transparency in Behnk et al.'s study is that participants knew they were never going to meet their co-participant, thus, negating social consequences that could come from lying. The current study partially addressed this concern because participants had to sit next to each other and physically hand each other information. Apparently, participants were still willing to lie to a co-participant when the co-participant saw who they were and were in a face-to-face context.

Despite a face-to-face context in the current study, one reason why transparency did not influence deception could be that the participants did not fear any serious negative social

repercussions. The participants in my study were required to be strangers—participants who reported knowing one another were excluded from data analysis. it is unlikely they were going to see or interact with one another after the conclusion of the study. Therefore, it is possible that they were willing to lie because they were not concerned about the opinion of a stranger who they would likely not see or interact with again.

Another contradictory result to my hypotheses was that the relationship between Machiavellianism and deception did not change across the three transparency conditions. My original analysis found that the interaction between Machiavellianism and transparency was not significant. To further assess what the relationship between Machiavellianism and transparency looked like, I conducted a follow up analysis. Using three follow up regression analyses, I determined that the relationship between Machiavellianism and lying was strongest in the 0% condition. This finding is contradictory to what I predicted because I expected that the relationship between Machiavellianism and deception to be the strongest in the 100% condition, not in the 0% condition.

My third hypothesis, about the relationship between Machiavellianism and deception, did not find support in this study. Perhaps people scoring lower in Machiavellianism are more likely to tell the truth regardless of transparency condition due to their lack of manipulative based characteristics. If so, even when another person will never find out about the lie, participants low in Machiavellianism might believe that it is not acceptable to manipulate others. This could then be indicative of why the relationship between Machiavellianism and deception was strongest in the 0% condition. Participants low in Machiavellianism may believe it is unacceptable to lie while participants high in Machiavellianism were willing to lie because they knew their co-participant would not find out. Perhaps the relationship between Machiavellianism and deception

was lower in the 50% and 100% conditions because participants high in Machiavellianism may have been concerned about the fact that their co-participant might find out about the lie. While this is a possibility, caution should be taken with this conclusion because the interaction between Machiavellianism and deception was not statistically significant.

Beyond my primary hypotheses, there were a number of other important findings. First, consistent with previous research, men had significantly higher Dark Triad scores than women (Baughman et al., 2014; Jonason et al., 2014; Roeser et al., 2016). Men's propensity to score higher on Dark Triad traits could be a result of socialization and learning throughout the lifespan that guides men towards unemotional decision-making, ruthlessness, and goals of achieving leadership positions within their careers (Van Vugt, 2006). Another possibility for this finding is that men are simply more willing to report negative thoughts and behaviors than women are (Thomas, 1989). Perhaps men are less constrained by social desirability factors (i.e., appearing to look good in front of others) than women and so report more negative information (Punyanunt-Carter, 2006). Therefore, they might be more likely to agree with the items of the Dark Triad inventory. The nature of the SD3 questionnaire certainly lends itself to knowing that if one agrees with the questions, it probably isn't a positive attribute to have; agreeing with statements such as "Payback needs to be quick and nasty" and "I like to use clever manipulation to get my way" may allude to negative interpersonal skills or feelings towards others. In that case, it may be that women understand the negative social consequences of admitting to feeling that way and so they do not report their true score for Dark Triad traits (Sutton & Keogh, 2001). Men, on the other hand, may not be as careful in amending their responses due to how Machiavellianism is viewed in males (Sutton & Keogh, 2001).

Not only was gender related to Dark Triad scores, there were gender differences in the amount of lying. Somewhat surprisingly, in the current study women lied to their co-participants more than men. While this was unexpected, past research has provided mixed results regarding the relationship between gender and deception. Some studies have found no significant difference in lying between genders (Childs, 2012; Gylfason, Arnardottir, & Kristinsson, 2013) while others have found that men lied more than women (Jonason et al., 2014; Dreber & Johannesson, 2007). I believe that my study may offer some new information on how context may influence the relationship between gender and lying. Interestingly, Behnk et al. (2014) used a sender-receiver task with the addition of transparency conditions and found that when using a payout option where lying would be most harmful to the receiver, women were more likely than men to lie in the 50% and 100% conditions. Knowing that their co-participant would definitely find out (or probably find out in the 50% condition) about the deception decreased men's willingness to lie but did not appear to affect women's willingness to lie. While this study gives support to my findings, the finding that men lie less frequently than women is not a common finding in the literature.

As mentioned earlier, the answer to the question of who lies more, men or women, does not appear to be a simple one; numerous investigations have produced mixed results (Childs, 2012; Dreber & Johannesson, 2007; Gylfason, Arnardottir, & Kristinsson, 2013). Three studies used the sender-receiver task to ascertain the relationship between gender and lying. Two of the studies found no evidence of gender differences and one demonstrated that men lied more than women. These three studies were all quite similar in terms of the procedures and measures used. One difference across the three was the population from which the participants were drawn. While they were all college-aged participants, the three studies were run in Canada, Iceland, and

Sweden. Therefore, it is possible that cultural differences led to the inconsistent findings across these three studies.

My study recruited participants who attend college in the Southeastern United States. If cultural differences influence the relationship between gender and deception, this might explain why I found results contradictory to each of those three studies. It is, of course, possible that some of the other differences between the current study and the previous three investigations accounted for the surprising finding that men lied more than women. For example, in the previous studies, the specific payout options in the sender-receiver task differed slightly. Also, I used the updated version of the sender-receiver task (Gneezy, Laske, & Saccardo, 2016) while they used the original version (Gneezy, 2005).

Although there were differences, it is worth noting that there were many consistencies in the results of my study and the previous studies. For example, I did find consistency with the other studies in how many lies my participants told. Overall, my participants lied in 53% of the rounds. Childs (2012) found 57.3% of senders lied in the experiment; Dreber and Johanneson (2008) found an average of 47% of their participants lied; Gylfason, Arnardottir, and Kristinsson (2013) found that 44% of their participants sent deceptive messages; Behnk, Barreda-Tarrazona, and García-Gallego(2014) found approximately 49% of the participants lying during their study. Even though there were differences in the relationship between gender and deception, the overall rates of deception were similar across the numerous studies that used similar tasks.

Another difference between my study and the three described above that might account for the discrepant findings regarding the relationship between gender and deception is the fact that my study used a face-to-face version of the sender-receiver task while the others used anonymous version of the task. If the social consequences of facing the person being lied to is

removed, that may eliminate any gender differences. This may influence the relationship

between gender and lying because of how context may influence men and women's propensity to

lie. Men may feel more comfortable in anonymous situations due to the rise of gaming and

internet culture where a person may post or say things anonymously which may be done more

frequently by men. At this point, this is, of course, just speculation. Future research that

manipulated the context of the sender-receiver task (face-to-face vs. anonymous) would be

needed to provide clarity to the relationship between gender and deception.

Limitations

One obvious limitation of my study is that the sample of participants came from a

university and are therefore a specific population. Any conclusions that have been made can only

be generalized to other university students of similar ethnicities, ages, and socioeconomic

statuses. While this type of sampling is common practice in psychology research, it is possible

that lying behavior found in this study does not reflect other types of people's lying (Henrich,

Heine, & Norenzayan, 2010). However, while this is a limitation, it seems likely that the same

patterns would be found with different populations.

One element of my study that was not reported in any other published studies using the

sender-receiver task is that the research assistants played a very active role during the task.

Presumably other studies used a research assistant to facilitate the experiment, but in the current

study, the research assistants were tasked with standing over the shoulders of the participants to

make sure that they stayed at the same pace and that no one made the mistake of erroneously

reading instructions and selecting answers before they should. This was crucial to the study to

make sure that the sender-receiver task was presented correctly to the participants. In a few

cases, the research assistant had to step in to ask participants to not click anything on the

computer, asked the participants to stop doing certain things, and had to remind participants to

do certain actions that were listed on the screen that had not been completed by the participants.

In this way, they may have impacted the way that participants answered questions and behaved

during the sender-receiver task due to knowing that the research assistant was constantly

watching their screens. While this may be an issue, participants were still somewhat comfortable

with lying in front of another person. As noted earlier, the overall rates of deception in the

current study were similar to what other researchers found.

My study is also limited in external validity based on the claims of reducing anonymity

between the participants. Although the study reduced anonymity that has been presented in many

other studies that secluded participants from one another, it likely falls short of mimicking many

real world interactions. Participants in my study were required to be strangers, and often people

interact with people they know well. Also, they likely would never see their co-participant again,

so the potential costs of deception were limited. Furthermore, while my study utilized a face-to-

face interaction, the participants did not actually speak to each other. Rather, the participants

simply handed a message to one another silently which is infrequently done in social

interactions. So, while they did have to physically face each other and lie directly to the other

participant, this may not mirror interactions in which people may lie to another person such as a

co-worker, friend, or significant other—i.e., someone they know well.

Future Directions

An important future direction would be to continue to explore ex post transparency. The

fact that transparency did not influence lying in my study is surprising. Even though

transparency did not influence lying in my study, it is possible that there are situations where

transparency might have an effect. There are a variety of situations where transparency might be

more influential. For example, in a future study the participants might be required to verbally

speak their messages to their co-participant. This type of transmission might impart the negative

social consequences to the participants more than simply handing a note to the co-participant. By

verbally confirming the message, the participants have the opportunity to make inferences about

the other person's honesty based on their body posture, voice tone, and confidence.

Perhaps in other contexts, such as increasing payment for lying in the same sender-

receiver task, Machiavellianism and transparency's relationship would be much stronger. I

believe that by making this change, my original hypothesis about the relationship between these

two variables would be confirmed. This is because with a higher amount of money at play,

coupled with the transparency conditions of the co-participant possibly finding out about the lie,

those low in Machiavellianism might be less likely to lie as the likelihood of being found out

increased. On the other hand, those high in Machiavellianism could find the benefit of the payout

allowing them to determine that their lie is worth it no matter what transparency condition they

find themselves in.

One possibility would be to add another task after the sender-receiver task. By adding the

second task, it might force participants to pay attention to their actions during the sender-receiver

task that would possibly be revealed. It would potentially increase awkwardness if their co-

participant found out they had been lied to, and then had to interact further by participating in

another task together. In other words, being required to work together in a second task would

increase the negative social consequences of lying. Therefore, in this context, transparency might

be revealed to influence lying.

Another change to my design that might increase the influence of transparency would be

to involve participants who knew each other, rather than focusing on interactions with strangers.

Since participants in my study did not know each other, perhaps they were not fearful of the negative consequences of lying. This was an isolated incident of interaction, and so it is possible that the participants were not overly concerned whether the other person knew that they lied or not. Looking at lying behaviors between friends, co-workers, and those in intimate relationships would be very interesting because it is possible that the negative consequences of deception would be more salient. For example, a friend might be hesitant to lie to his or her friend, especially when they know the deception will be revealed. This potentially could cause conflict that the friend would want to avoid.

In addition to investigating factors that might influence the impact of transparency, future research should continue to use the updated version of the sender-receiver task. In two pilot studies, the original version of the sender-receiver task (Gneezy, 2005) was used. During these studies, the participants exhibited signs of confusion about the specifics of the task. For example, the participants had many questions concerning what they were supposed to be doing during the task, what they could and could not do with the information provided to them, and what the options were as far as lying to their co-participant for money as a result of the choices provided to the sender. This impedes the unobtrusive nature of research assistants that is desirable and may change the way that participants act in either guessing that they should act a certain way after calling the research assistant's attention to them or may censor their real lying behaviors.

Another element that should be explored further is the use of face-to-face transmission of messages. The importance of face-to-face interaction is still paramount in the digital age for gaining and maintaining personal and professional relationships and so more research should be done in this realm. A future study could be conducted using the procedures developed by Van Zant and Kray's (2014). In their study, participants were required to verbally commit to lying or

being honest in their message choice. This would increase the social pressures that come with speaking a lie rather than writing it down. By writing something down, it provides a sort of safety in knowing that no other physical responses may give away the lie that is being told. Even more interesting would be the inclusion of close relationships to this verbal admittance of lying or honesty. By having a personal relationship at stake in the choice of message, it is possible that the relationship between lying and Machiavellianism will be even stronger.

Conclusions

In determining the relationship between Machiavellianism, transparency conditions, and lying, many results that were found did not support my original hypotheses about the relationship. The only hypothesis that was supported was that participants scoring higher on Machiavellianism lied more than those with lower scores of Machiavellianism. Contrary to my second hypothesis, participants were equally as willing to lie regardless of the likelihood that the lie would be revealed. This is an interesting finding because many people may believe that if a person can get away with a lie, they will; if no one will find out about a lie, where's the harm in it? My study directly contrasts this idea and shows that regardless of whether the person may or may not find out about a lie, participants are just as likely to lie. The finding that people are insensitive to the consequences of lying to a stranger suggests that other factors likely contribute to people's decisions to lie (see Mazar, Amir, & Ariely, 2008). This finding also suggests that increasing ex post transparency is not an effective means of increasing honesty. Finally, if people think transparency reduces deception, this could lead people to be more trusting of others than they should in situations where deception can be discovered.

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Endnotes

[1] This type of lying has also been termed gainful-misleading lies (Phillips et al., 2011) and self-serving lies (Kashy & DePaulo, 1996). For the sake of simplicity, I will use the term self-gain lies.

[2] In the clinical psychology literature, psychopathy is often characterized by two clusters of traits. The first cluster includes so-called affective factors such as selfishness, callousness, lack of empathy, and remorseless use of others. The second cluster includes behaviorally oriented factors such as promiscuity, aggression, and criminality. For the purpose of my study, I used the definition favored by Dark Triad researchers (e.g., Paulhus & Williams, 2002).

Table 1.

Descriptive statistics and correlations among participant traits and lying.

	M (SD)	1	2	3	4	5	6
1. Ave_lying	.53 (.35)	-	.12	.01	.02	.07	-.16*
2. Mach	2.98 (.54)		-	.36**	.56**	.83**	-.02
3. Narc	2.93 (.51)			-	.25**	.68**	-.04
4. Psycho	2.23 (.58)				-	.80**	.05
5. SD3	2.71 (.42)					-	-.00
6. Age	20.11 (1.70)						-

Note: Ave_lying = average amount of lying during sender-receiver task; Mach = participants'

Machiavellianism score; Narc = participants' Narcissism score; Psycho = participant's

Psychopathy score; SD3 = participants' Short Dark Triad score; Age = participant's age.

* p < .05, ** p < .01

Table 2.

Comparisons of men and women for lying, Dark Triad, and age.

	Men	Women	t-value	p-value	Cohen's d
Ave_lying	.42 (.34)	.60 (.34)	-3.27	.001	.52
Mach	3.19 (.51)	2.86 (.52)	3.98	< .001	.64
Narc	3.07 (.47)	2.85 (.52)	2.48	.005	.46
Psycho	2.53 (.57)	2.04 (.50)	5.89	< .001	.93
SD3	2.93 (.40)	2.58 (.38)	5.70	< .001	.91
Age	20.62 (2.11)	19.80 (1.30)	3.28	.001	.47

Note: Ave_lying = average amount of lying during sender-receiver task; Mach = participant

Machiavellianism scores; Narc = participant Narcissism scores; Psycho = participant

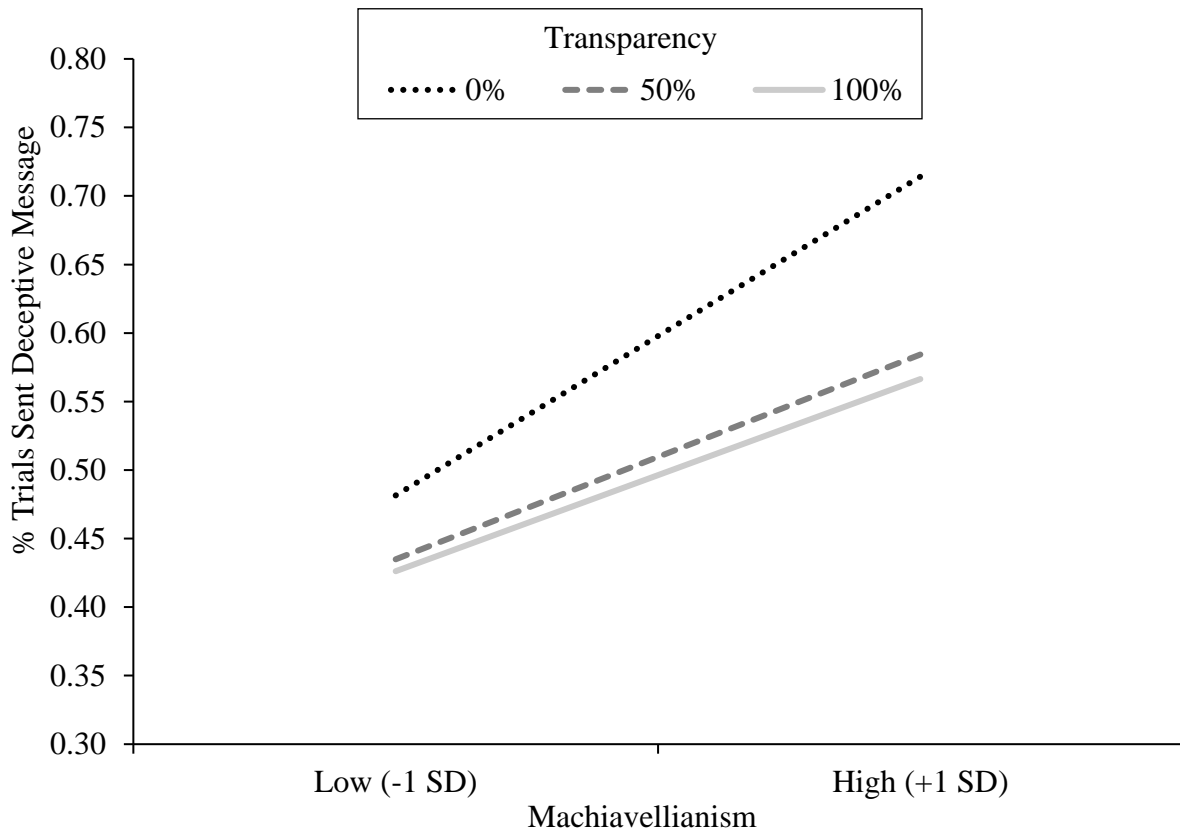Psychopathy scores; SD3 = participant Short Dark Triad scores; Age = participants' age.

Figure 1. Percentage of rounds participants sent a deceptive message as a function of Machiavellianism for the three transparency conditions.

Appendix A

To: Samantha Harris
Psychology
CAMPUS EMAIL

From: Lisa Curtin, PhD, IRB Chairperson
RE: Notice of IRB Approval by Expedited Review (under 45 CFR 46.110)
Date: 3/02/2017

STUDY #: 16-0189
STUDY TITLE: Interpersonal Behaviors
Submission Type: Renewal
Expedited Category: (7) Research on Group Characteristics or Behavior, or Surveys, Interviews, etc.
Renewal Date: 3/02/2017
Expiration Date of Approval: 3/01/2018

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

Regulatory and other findings:

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

The IRB waived the requirement to obtain a signed consent form for some or all subjects because the research presents no more than minimal risk of harm to subjects and involves no procedures for which written consent is normally required outside of the research context.

All approved documents for this study, including consent forms, can be accessed by logging into IRBIS. Use the following directions to access approved study documents.

1. Log into IRBIS
2. Click "Home" on the top toolbar
3. Click "My Studies" under the heading "All My Studies"
4. Click on the IRB number for the study you wish to access
5. Click on the reference ID for your submission
6. Click "Attachments" on the left-hand side toolbar

7. Click on the appropriate documents you wish to download

Approval Conditions: <u>Appalachian State University Policies</u>: All individuals engaged in

research with human participants are responsible for compliance with the University

policies and procedures, and IRB determinations.

<u>Principal Investigator Responsibilities</u>: The PI should review the IRB's list of PI

responsibilities. The Principal Investigator (PI), or Faculty Advisor if the PI is a student,

is ultimately responsible for ensuring the protection of research participants; conducting

sound ethical research that complies with federal regulations, University policy and

procedures; and maintaining study records.

<u>Modifications and Addendums</u>: IRB approval must be sought and obtained for any

proposed modification or addendum (e.g., a change in procedure, personnel, study

location, study instruments) to the IRB approved protocol, and informed consent form

before changes may be implemented, unless changes are necessary to eliminate apparent

immediate hazards to participants. Changes to eliminate apparent immediate hazards

must be reported promptly to the IRB.

<u>Approval Expiration and Continuing Review</u>: The PI is responsible for requesting

continuing review in a timely manner and receiving continuing approval for the duration

of the research with human participants. Lapses in approval should be avoided to protect

the welfare of enrolled participants. If approval expires, all research activities with human

participants must cease.

Prompt Reporting of Events: Unanticipated Problems involving risks to participants or

others; serious or continuing noncompliance with IRB requirements and determinations;

and suspension or termination of IRB approval by external entity, must be promptly

reported to the IRB.

Closing a study: When research procedures with human subjects are completed, please

log onto our system

at https://appstate.myresearchonline.org/irb/index_auth.cfm and complete the Request for

Closure of IRB review form.

Appendix B

Round 1 Payout

      Correct: $0 to sender; $2 to receiver

      Incorrect: $2 to sender; $0 to receiver

Round 2 Payout

      Correct: $0 to sender; $5 to receiver

      Incorrect: $2 to sender; $0 to receiver

Round 3 Payout

      Correct: $0 to sender; $2 to receiver

      Incorrect: $5 to sender; $0 to receiver

Appendix C

The Short Dark Triad (SD3)

Instructions: Please indicate how much you agree with each of the following statements

Disagree strongly – 1   Disagree – 2   Neither agree nor disagree – 3   Agree – 4   Agree Strongly – 5

Machiavellianism

1. It's not wise to tell your secrets.
2. I like to use clever manipulation to get my way.
3. Whatever it takes, you must get the important people on your side.
4. Avoid direct conflict with others because they may be useful in the future.
5. It's wise to keep track of information that you can use against people later.
6. You should wait for the right time to get back at people.
7. There are things you should hide from other people to preserve your reputation.
8. Make sure your plans benefit yourself, not others.
9. Most people can be manipulated.

Narcissism

1. People see me as a natural leader.
2. I hate being the center of attention. (R)
3. Many group activities tend to be dull without me.
4. I know that I am special because everyone keeps telling me so.
5. I like to get acquainted with important people.
6. I feel embarrassed if someone compliments me. (R)
7. I have been compared to famous people.
8. I am an average person. (R)
9. I insist on getting the respect I deserve.

Psychopathy

1. I like to get revenge on authorities.
2. I avoid dangerous situations. (R)
3. Payback needs to be quick and nasty.
4. People often say I'm out of control.
5. It's true that I can be mean to others.
6. People who mess with me always regret it.
7. I have never gotten into trouble with the law. (R)
8. I enjoy having sex with people I hardly know.
9. I'll say anything to get what I want.

Note. The subscale headings should be removed before the SD3 is administered. Items should be kept in the same order. Reversals are indicated with (R).

Appendix D

Those assigned to the sender role will read the following:

In this study, you will perform a task with the other participant in this session. This study is examining how people can perform a task when they can only give each other minimal information.

The task that you will perform is called the Sender-Receiver task. You are in the role of the Sender and the other participant is in the role of the Receiver. You will not be identified by name to the other participant and will, instead, be referred to as the Sender (you) and Receiver (the other participant).

During this task, you will roll a die. The Receiver's goal is to guess the number that you rolled. Before the Receiver makes a guess, you will send the Receiver a message. In this message, you will write down a number. You are free to write down any number you would like in this message. You should think about the number you send to the Receiver because you might be able to influence the guess the Receiver makes.

The amount of money you win will depend on the Receiver's guess. If the Receiver correctly guesses the number you rolled, the Receiver will get money and you will get none. If the Receiver's guess is incorrect, you will get money and the Receiver will get none.

The exact amount of money you can win changes each round. Be sure to pay attention to the payouts that are described at the beginning of each round.

IMPORTANT: At the end of the study, one of the rounds will be picked at random and you will receive the payment for that round. The dollar amounts displayed are the real dollar amounts that you are playing for. In other words, because you don't know which round will be selected, you should do your best on each round. One of the rounds will be selected and the dollar amounts associated with that round will be paid to you and the other participant.

Those assigned to the receiver role will read the following:

In this study, you will perform a task with the other participant in this session. This study is examining how people can perform a task when they can only give each other minimal information.

The task that you will perform is called the Sender-Receiver task. You are in the role of the Receiver and the other participant is in the role of the Sender. You will not be identified by name to the other participant and will, instead, be referred to as the Receiver (you) and Sender (the other participant).

During this task, the Sender will roll a die. Your goal is to guess the number that the Sender rolled. Before you make your guess, the Sender will send you a short message. After you receive this message, you will make your guess as to the number that the Sender rolled.

The amount of money you win will depend on your guesses. If you correctly guess the number the Sender rolled, you will get money and the Sender will get none. If your guess is incorrect, the Sender will get money and you will get none.

IMPORTANT: At the end of the study, one of the rounds will be picked at random and you will receive the payment for that round. The dollar amounts displayed are the real dollar amounts that you are playing for. In other words, because you don't know which round will be selected, you should do your best on each round. One of the rounds will be selected and the dollar amounts associated with that round will be paid to you and the other participant.

Vita

Samantha Rae Harris was born in Richmond, Virginia to Samuel and Kimberly Harris. She graduated from Dixon High School in Holly Ridge, NC in June 2011. She then went to study psychology at Lees-McRae College in Banner Elk, NC and in May 2015 she was awarded a Bachelor of Science degree in the subject. The following fall, she accepted a research assistantship with the Experimental Psychology program at Appalachian State University while pursuing a Masters of Arts degree with the program. She went on to teach Research Methods while in her second year of the Experimental Psychology Masters program. The M.A. was awarded in December 2017. She recently accepted a position with Miller-Motte College to teach psychology while finishing her degree.

Miss Harris is a member of Alpha Chi and Delta Zeta Nu and is heavily involved with community service in her home town. She resides in Jacksonville, NC with her husband, Chase, and their dog, Sunny.