

THE EFFECTS OF THE DARK TRIAD ON ADVICE TAKING
AND DECISION MAKING

by

Elizabeth Dare McNamara

A Thesis Submitted in Partial Fulfillment
of the Requirements for the Degree of
Master of Arts in Industrial and Organizational Psychology

Middle Tennessee State University
May 2018

Committee Chair:

Dr. Alexander T. Jackson

Thesis Committee:

Dr. Michael Hein

Dr. Mark Frame

I dedicate this research to my family. I would not be where I am today without your love and support.

ACKNOWLEDGEMENTS

First, I have to thank my family for supporting me when I moved out of state to follow my passion of studying Industrial – Organizational Psychology. This work would not have been possible without the support of the MTSU I/O Psychology faculty and students. I am very blessed to have had the cohort that I do, they encouraged me every step of the way. I am especially grateful to Dr. Alex Jackson for working on my thesis alongside me every step of the way. He taught me how to be a researcher and how to take a hypothesis and transform it into something that provides value to both researchers and organizations. I am grateful to all of those whom I have had the pleasure to work with during this and other related projects. Each of the members of my Thesis Committee has provided me extensive personal and professional guidance. Finally, I want to express how grateful I am for Megan Loftis and Emilie Seyfang, thank you for always being there to provide me with encouragement and guidance.

ABSTRACT

This research study seeks to gain a better understanding of the effects of the dark triad (narcissism, Machiavellianism, psychopathy) on advice taking and decision making. This research will involve whether or not the dark triad traits may result in working professionals being more or less likely to accept advice when making a decision. Past research has shown that outcomes are generally more favorable when the person who is making the decision takes the advice of another person into consideration. Despite this fact, I propose that people with higher dark personality traits will not accept advice when making a decision. This study will recruit working professionals, with the intention of learning more about how the dark triad may impact decision making in the work place.

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CHAPTER I: REVIEW OF THE LITERATURE

Introduction

When making decisions, people can benefit from taking the advice of others, and outcomes are generally more favorable when the person who is making the decision takes the advice of another person into consideration (Bonaccio & Dalal, 2006; Kausel et al., 2015; Larrick & Soll, 2006). Because organizational leaders are often tasked with making decisions, taking advice may be essential for optimal decision making (Kausel et al. 2015, Argyris, 2000). Thus, leaders *should* use advice when making decisions. However, when making important decisions, people often make the decision based on heuristics or intuition, which can be biased or lack important information (Yaniv & Kleinberger, 2000; Hoorens, 1993; Kruegar & Mueller, 2002).

Despite the research encouraging people to consider the advice of others before making a decision, most people choose to proceed without considering advice, even after receiving beneficial advice on the topic (Bonaccio & Dalal, 2006; Kausel et al., 2015). One explanation for this is that people commonly go with their own idea because their own thought process is more easily accessible to them (Yaniv & Kleinberger, 2000; Kruegar & Mueller, 2002; Kausel et al., 2015). Ignoring or dismissing advice often leads to an inaccurate decision and poor decision outcome (Larrick & Soll, 2006). For instance, a CEO could be making the decision to save money by cutting the internship program from the Human Resources (HR) department. The Vice President (VP) of HR advises the CEO not to cut the program because much of the day-to-day work is performed by interns. Despite the advice from the VP of HR, the CEO may still execute his or her initial decision to cut the internship program. If the CEO does not consider the advice of the VP of HR, then the CEO's decision to remove the HR internship program could result in

the company being two weeks behind on their quarterly goal because the interns' work is essential to the company. Another example of this would be the large amount of traffic fatalities that result from drivers refusing to wear their seatbelts (2016 Traffic Fatalities near Record Low, 2017). It could be assumed that all drivers are aware of the research-supported advice to wear seatbelts, yet many drivers still drive without their seatbelt. In this case, the drivers risk of injury increases when they do not heed the advice to wear their seatbelts.

The purpose of this study is to examine some of the individual differences that may influence advice taking. Namely, because dark personality characteristics, such as narcissism, psychopathy, and Machiavellianism, can have a negative impact on the decision making processes (O'Boyle et al., 2011; Kausel et al., 2015). This study will investigate whether these dark personality characteristics impact advice taking.

The structure of this paper is as follows. First, I will review the literature on advice-taking and the Judge-Advisor System (JAS), which is used to assess advice taking (Yaniv, 2004; Kausel et al., 2015). Next, I will explain how advice taking may be negatively affected by personality, specifically narcissism, Machiavellianism, and psychopathy (commonly referred to as the dark triad). It is important to note that the dark triad traits are all similar, but there are differences that make them distinct. This is why each one should be individually measured (Furnham, Richards, & Paulhus, 2013; DeShong et al., 2017; Muris, Merckelbach, Otgaar, & Meijer, 2017). I then hypothesize that narcissists are less likely to perceive the advice of others as useful, and this could result in advice discounting. Next, Machiavellianism is reviewed. Past research indicates that there are two opposing arguments for why Machiavellians could either value the advice of others or reject the advice of others. The final dark triad personality trait to be discussed is psychopathy. I hypothesize that psychopathy will have a negative relationship with

advice taking because a psychopath does not value the advisor or the advice of the advisor. This will result in advice discounting.

Theory and hypotheses

Advice taking

Advice taking refers to incorporating the input of others in order to enhance the quality of the decision being made (See, Morrison, Rothman, & Soll, 2011). Despite research indicating that advice can benefit decision making, people often fail to effectively utilize advice (See, Morrison, Rothman, & Soll, 2011). This may be due to the fact that most people have an easier time accessing their own thought process, so it is easier for them to justify their own reasoning, compared to that of someone else (Yaniv & Kleinberger, 2000). A common model that is used to explain the foundation of advice utilization is the JAS (Sniezek & Buckley, 1995). The JAS refers to a problem situation whereby the person making the decision (the judge) is presented with a dilemma and makes an initial guess at what he or she believes the solution is (Kausel et al., 2015; Bonaccio & Dalal, 2006). After the judge makes an initial decision, the judge is presented with the advice from another individual (the advisor) on the same problem. Then the judge is asked if he or she wants to reevaluate the decision based on this new information. The final step allows the judge to keep his or her original decision or change it (Sniezek & Buckley, 1995).

Researchers are able to use this system to assess how much the judge uses the advisor's advice based on the discrepancy, if any, between the judge's initial decision and final decision. Advice taking occurs when the judge genuinely considers and weighs the advisor's opinions, resulting in the judge altering his or her judgment or decision (Sniezek & Buckley, 1995; Bonaccio & Dala, 2006). One technique for measuring the degree to which advice is used, is to

measure the amount a judgment changes or shifts towards the judgment offered by the advisor (Kausel et al., 2015). For instance, if a judge changed his judgment to that of the advisor, then there would be a 100% shift toward the advisor's judgment. Alternatively, if the judge completely ignored or discounted the advisor's advice, then there would be a 0% shift toward the advisor's judgment. Advice taking research has reported that most people only adjust their answer only about 30% to match the advice of their advisor (Yaniv, 2004).

Research has shown that advice taking is encouraged because it often results in a better decision outcome (Van Swol & Sniezek, 2005; Schrah, Dalal, & Sniezek, 2006; Bonaccio & Van Swol, 2014). The decision-making process is often benefitted when the person making the decision accepts advice (Bonaccio & Dalal, 2006). Advice taking also provides the judge with accountability and reduces the chances that the judge will be biased towards his or her own opinions (Kausel et al., 2015; Bonaccio & Dalal, 2006). There are no known negative outcomes of advice taking (Schrah, Dalal, & Sniezek, 2006; Bonaccio & Van Swol, 2014), assuming the advisor is an expert on the situation and is capable of giving educated advice (Bonaccio & Dalal, 2006; Feng & MacGeorge, 2006).

Research on advice taking has examined the circumstances of decisions and the characteristics of the advisor, both of which influence whether a person will accept and utilize the advice. For instance, people are more likely to accept advice if they believe that the person giving advice is credible and an expert (Bonaccio & Dalal, 2006; Feng & MacGeorge, 2006; Bonaccio & Van Swol, 2014), if the person making the decision and the advice giver have a positive relationship history (Van Swol & Sniezek, 2005), if the advisor is confident (Van Swol & Sniezek, 2005), and if the advice is priced at a high monetary cost (Gino, 2008).

However, there has been an absence of research examining the influence of characteristics of the advisee on his or her willingness to accept or reject advice (Dalal & Bonaccio, 2010). The relationships between the Big-Five personality traits (extraversion, agreeableness, conscientiousness, openness, and neuroticism) and advice taking have been researched (Ames, Rose, & Anderson, 2006; Muris, Merckelbach, Otgaar, & Meijer, 2017). People who were higher in extraversion and agreeableness tend to take more advice (Dalal & Bonaccio, 2010; Sniezek & Van Swol, 2001).

Additionally, the handful of studies examining the advisee's characteristics have examined the advisee's confidence (Bonaccio & Dalal, 2006; Fast, Sivanathan, Mayer, & Galinsky, 2012), how much experience the advisee has with the task (Harvey & Fischer, 1997), if the advisee has a valuable relationship with the advice taker (Van Swol & Sniezek, 2005), and how much external pressure is on the decision maker to be held accountable for their decision (Lerner & Tetlock, 1999; Kausel et al., 2015). However, what is missing from the literature is a focus on the impact of dark personality traits. Only one study has examined the influence of narcissism on advice taking (see Kausel et al., 2015). The present research will help close this gap by examining whether the dark triad influences a person's willingness to accept or reject advice.

With this purpose in mind, this research will adopt an egocentric advice discounting perspective. Egocentric advice discounting is one of the reasons that people do not take the advice of others into consideration (Yaniv & Kleinberger, 2000; Bonaccio & Van Swol, 2014). Egocentricism refers to the inability to decipher between the aspects of oneself and the aspects of another person (Liotti, 1992; Piaget, 1926). Someone who is egocentric is also less likely to be able to see the perspective of another person (Epley, Keysar, Van Boven, & Gilovich, 2004).

Egocentric advice discounting refers to when the person making the decision places more weight on their own opinions because the person is overconfident in his or her ability to make a decision (Yaniv & Kleinberger, 2000). If the one making the decision weighs their own opinion more heavily and considers it to be superior to the information provided by another, then egocentric advice discounting has occurred (Gardner & Berry, 1995; Harvey & Fischer, 1997; Yaniv & Kleinberger, 2000).

The dark triad

The dark triad consists of three socially aversive traits (narcissism, Machiavellianism, and psychopathy). The term *dark triad* was coined by Paulhus and Williams (2002) to help identify these three norm-violating personality traits (Muris, Merckelbach, Otgaar, & Meijer, 2017). All three traits are distinct but somewhat related (Muris, Merckelbach, Otgaar, & Meijer, 2017). Narcissists, Machiavellians, and psychopaths¹ all typically display characteristics that are positively related to egocentrism, callousness, and manipulation (Jakobwitz & Egan, 2006; DeShong et al., 2017). Previous research has shown that people with dark triad personality traits are less agreeable and extraverted (Dalal & Bonaccio, 2010; O'Boyle, Forsyth, Banks, Story, & White, 2015; Furnham, Richards, & Paulus, 2013; DeShong et al., 2017) and less likely to value other people. This devaluation of others may impact whether the individual with these traits discounts the advice of others. Narcissism, Machiavellianism and psychopathy are all discussed in detail below.

¹ It is important to note that the dark triad personalities stem from clinically diagnosed disorders, but this research will address each personality as a sub-clinical personality dimension (Giacomin et al., 2014). Although narcissism, Machiavellianism, and psychopathy are all associated with psychological disorders, this research will not be categorizing participants. Instead, these characteristics will be viewed as traits lying on a continuum (Giacomin et al., 2014; Foster & Campbell, 2007). When the terms narcissist, Machiavellian, or psychopath are used, this is only shorthand for referring to someone who may possess higher levels of these traits.

Narcissism

Characteristics of narcissism

A narcissist is someone who is very self-involved, constantly seeks the approval of others, and views themselves as grandiose (Bergman, Westerman, & Daly, 2010, Kausel et al., 2015). All activities that narcissists pursue are meant to help them obtain positive feedback and feel important (Morf & Rhodewalt, 2001). Due to this continual need for praise, narcissists do not respond well when they get negative or corrective feedback (O'Boyle, Forsyth, Banks, & McDaniel, 2011; Bergman, Westerman, & Daly, 2010). Narcissists have been known to act aggressively to defend themselves if they feel vulnerable, receive constructive criticism, or if their weaknesses are exposed (Morf & Rhodewalt, 2001; Stucke & Sporer, 2002; Bergman, Westerman, & Daly, 2010). Narcissists are known for making risky decisions (Twenge & Campbell, 2001; Bergman, Westerman, & Daly, 2010), meaning that a narcissist may not spend much time thinking over a decision but instead makes the decision impulsively. When compared with other general traits, narcissism is negatively correlated with neuroticism and agreeableness but is positively correlated with extraversion, openness to experience, and conscientiousness (O'Boyle et al., 2015).

Those with a higher narcissism level have been found to be successful in achieving leadership roles (O'Boyle, Forsyth, Banks, & McDaniel, 2011; Furnham, Richards, & Paulhus, 2013). However, narcissists make poor leaders because they are not able to empathize with their employees (Bergman, Westerman, & Daly, 2010). Additionally, narcissistic leaders could be willing to lower their employees' morale (e.g. the narcissist always talking about themselves, stealing and claiming their employees' ideas) in order for the narcissist to boost their own self-confidence (Lubit, 2002). For example, if a narcissistic manager gets negative feedback from

their superior, then the manager may use one of their employees as a scapegoat, so that the narcissist can avoid the blame (Lubit, 2002; Bergman, Westerman, & Daly, 2010).

The influence of narcissism on advice taking

Narcissists tend to believe that they are more knowledgeable than others, which leads them to be overly confident about their judgments or decisions (Bergman, Westerman, & Daly, 2010). Narcissists also are more likely to see others as insignificant, find the opinions of others to be useless and to view others as inferior and inadequate and (Bergman, Westerman, & Daly, 2010). This is known as the superiority bias, whereby narcissists believe that they have superior qualities (e.g., intelligence, beauty, skill) and that everyone else's views and ideas are inferior (Yaniv, 2004; Carlson, Naumann, & Vazire, 2011; Hoorens, 1993). Therefore, narcissists are not likely to take advice because they perceive the other's advice as useless. For instance, Kausel et al. (2015) conducted a series of studies examining whether narcissists would utilize the advice of others. The researchers found that narcissism is negatively related to advice taking. Additionally, their findings showed that narcissists do indeed have a superiority bias, which results in seeing others as inferior and perceiving others' opinions as unimportant (Kausel et al, 2015).

Additionally, someone with a higher level of narcissism is more likely to have a mindset that could lead the narcissist to confidently believe that he or she is always right. This confidence results in a state of ignorance that keeps them from accepting knowledge and advice (Beck et al., 1990). This may in part occur because the narcissist does not perceive the advice as useful. For instance, Bonaccio and Dalal (2006) examined the different components of advice taking, including the confidence of the judge. The researchers found higher levels of confidence were associated with less use of advice (Bonaccio & Dalal, 2006). Narcissists report having higher

levels of confidence (Beck et al., 1990); therefore, the narcissist may reject advice because the narcissist believes that their opinion is more accurate and valuable than the advisor's advice.

As previously stated, decisions are often improved if the judge takes the advice of another person, especially when the advice comes from an expert (Feng & MacGeorge, 2006; Bonaccio & Dalal, 2006). As such, I predict that narcissists will be less likely to take advice. As mentioned, narcissists respond negatively to constructive criticism or feedback (O'Boyle et al., 2011), which may be delivered in the form of advice. If the advice provides negative feedback regarding the narcissist's initial judgment, then it is much more likely that the narcissist will become defensive and dismiss the advice.

Someone with a higher narcissism level will constantly be striving to enhance their self-confidence (Beck et al., 1990; Bergman, Westerman, & Daly, 2010), leading them to disregard new information that the narcissist perceives as useless. By accepting or using the new information, the narcissist must admit that there is knowledge that he or she lacks. Throughout this literature review, the example of the CEO, who wants to save money by cutting the internship program from the HR department, will be used to demonstrate the similarities and differences between the dark triad traits.

In this example, despite the aforementioned advice from the VP of HR, a narcissistic CEO may still execute his or her initial decision to cut the internship program because a narcissist does not value the advice of others because a narcissist does not value the person who is giving the advice. The narcissist's tendency to believe that they are always correct, may lead the narcissist to believe that advice from the VP of HR would not be useful. The VP of HR has made it clear that the interns are essential to the company but because the narcissistic manager may not value other people or their advice, this could lead the narcissistic manager to believe

that the VP of HR's advice is irrelevant. Not only do narcissists fail to accept information from others, but narcissists also have a distorted view of how much they believe they know, giving narcissists a false sense of confidence in their own judgements (Paulhus, Harms, Bruce, & Lysy, 2003).

Based on the aforementioned research, I am predicting that a person with a higher narcissism level is going to be less likely to take advice, because the narcissist believes that the advisor is inferior. Therefore, the advisor's advice will be perceived as useless. This leads to the following hypotheses:

Hypothesis 1: Narcissism is associated with less advice taking.

Hypothesis 1a: Perceived usefulness of advice mediates the relationship between narcissism and advice taking.

Machiavellianism

Characteristics of Machiavellianism

Machiavellianism was named after Niccolo Machiavelli, a political author and philosopher. Machiavelli strongly believed that the outcome is the most important part of a process, and the steps to reach the goal are irrelevant (Carre & Jones, 2016). Machiavellianism is characterized by three interrelated values. First, Machiavellians find it appropriate to manipulate others in some situations (O'Boyle, Forsyth, Banks, & McDaniel, 2011). For example, a Machiavellian may lie to a coworker because the Machiavellian believes that if the coworker cannot figure out that he is being lied to, then the coworker deserves to be manipulated. Second, a Machiavellian has a cynical view of all humanity (O'Boyle, Forsyth, Banks, & McDaniel, 2011). For example, a Machiavellian believes that all people have an evil side, and this side could be revealed at any time. Finally, Machiavellians believe that reaching their desired

outcome is their top priority; the steps that it takes to reach their goals are irrelevant (O'Boyle, Forsyth, Banks, & McDaniel, 2011). For example, a Machiavellian may take immoral shortcuts, such as lying during an interview, in order to achieve their goal of obtaining a desirable career.

Machiavellians are often comfortable taking whatever steps are necessary to reach their target, even if these steps are socially immoral (Carre & Jones, 2016; Jones, 2016). As Machiavellians work toward reaching their goal, they do not feel remorse if others are harmed in the process (Jones & Paulhus, 2009; Jones, 2016). Some researchers believe that Machiavellians know the difference between what is morally considered right and wrong, but they feel comfortable doing what is morally wrong if it benefits them (e.g., Bereczkei et al., 2013; Carre & Jones, 2016; DeShong et al., 2017; O'Boyle et al., 2011). For example, a Machiavellian may have an easier time internally justifying the action of falsifying their timecard information, so that he or she can get paid for unworked hours.

The influence of Machiavellianism on advice taking

Rauthmann and Will (2011) examined different behaviors commonly associated with Machiavellianism and found that the behaviors that are most characteristic of Machiavellians include cynicism, manipulation, and exploitation. Additionally, Rauthmann and Will (2011) found that Machiavellians are likely to be agentic. An agentic person is one who is more independent and motivated by their own internal drive, as opposed to someone who is more communal and cares for others (Ramsey, 2017). Additionally, a Machiavellian's cynical nature prevents them from forming a trusting relationship with others (O'Boyle, Forsyth, Banks, & McDaniel, 2011) because Machiavellians believe that everyone is driven by their own selfish desires. One way that this trait is different from the other two traits in the dark triad is that Machiavellians do not seek gratification from others (Jones & Paulhus, 2011). This lack of

craving reinforcement from others could result in Machiavellians taking advantage of and using others while having no regret that they may have damaged a relationship (Carre & Jones, 2016).

Additionally, Machiavellians commonly use a mature decision making process (Carre & Jones, 2016). A mature decision making process involves considering all the steps that go into making a decision and all possible consequences that the decision may bring (Carre & Jones, 2016, Jones, 2014). In other words, Machiavellians have the capacity to think logically through a decision and its outcomes, but Machiavellians only seem concerned with consequences that have a personal benefit for the Machiavellian. As such, a Machiavellian will not go through with an action that harms someone else, if that action also harms the Machiavellian (Carre & Jones, 2016, Jones, 2014).

Finally, Machiavellians do not feel empathy for others (O'Boyle, Forsyth, Banks, & McDaniel, 2011), which may result in a Machiavellian not seeing another person as valuable. Machiavellians believe that if someone is naïve enough to be taken advantage of, then the victim deserved to be manipulated (DeShong et al., 2017; Lyons & Aitken, 2010). When a Machiavellian is manipulating another person, this could mean that the Machiavellian does not value the other person. The Machiavellian's lack of empathy could result in a disregard for how others are impacted by the Machiavellian's decision. If a person does not care how their decision will influence others, then it is much less likely that he will consider the advice of others. For example, if a Machiavellian is deciding whether or not he wants to save money by cutting jobs at his organization, it would be encouraged that the Machiavellian listens to the advice of other managers or leaders within the company. Other people may provide information pertaining to why downsizing could result in people losing their jobs. Without listening to the advice of

others, it is believed that someone with a higher level of Machiavellianism would only focus on how much money he or she can save by downsizing.

As previously mentioned, Machiavellians are motivated by reaching personal goals, regardless of the cost. This means that Machiavellians will rarely do anything to benefit another person, unless they are certain that the action will in-turn benefit the Machiavellian (Bereczkei, Birkas, & Kerekes, 2010). Most actions that a Machiavellian performs are to achieve self-recognition, status, and money, as opposed to forming social relationships (Bereczkei, Birkas, & Kerekes, 2010). For example, a Machiavellian will help the community only if the Machiavellian is rewarded. The personal reward is what the Machiavellian desires, not the feeling of satisfaction from helping the community or the positive feelings associated with helping behaviors (Ramsey, 2017).

Machiavellians have been reported to exploit people if they believe that using another person will help them reach their goal (Furnham, Richards, & Paulus, 2013). In a decision-making situation, this type of egotistical thought process and behavior could lead to the Machiavellian disregarding important information simply because it comes from a person that the Machiavellian believes is inadequate. Additionally, the Machiavellians cynical world view leads them to believe that all people are motivated by selfish goals (DeShong et al., 2017). A Machiavellian's lack of trust in other people (O'Boyle, Forsyth, Banks, & McDaniel, 2011) may lead the Machiavellian to ignore the advice of others because the Machiavellian believes that the advisor is acting in the advisor's own self-interest.

Recall the example of the CEO and the VP of HR making a decision about whether or not to keep the HR interns. A Machiavellian CEO may have a more complicated approach to the decision. The Machiavellian may not consider the advice of the VP of HR because the

Machiavellian may already have a self-serving plan as to why the interns are not needed.

Additionally, the Machiavellian CEO may believe that everyone is only trying to do what is best for their own selfish purposes, and therefore, the VP of HR should not be trusted. There is also a possibility that the Machiavellian decides to listen to the VP of HR's advice and consider the advice because the CEO may think that what is good for himself or herself is taking advantage of the VP of HR's advice. The CEO may think that taking the advice would be good for the company and make the CEO look good.

Based on the preceding discussion, I propose a set of competing hypotheses regarding how Machiavellians use advice. First, Machiavellians may reject advice from others. Machiavellians may not want to allow another person the chance to give advice (Smith, Summers, Dillon, Macatee, & Cogle, 2016) because this would mean that the Machiavellian is letting another person help them. Another person helping the Machiavellian may seem impractical to the Machiavellian because the Machiavellian sees other people as naïve and motivated by their own selfish goals (DeShong et al., 2017; Lyons & Aitken, 2010). Therefore, a Machiavellian's cynical worldview may lead the Machiavellian to perceive the advice as useless because the advisor may be trying to trick the Machiavellian. This leads to the following hypotheses.

Hypothesis 2: Machiavellianism is associated with less advice taking.

Hypothesis 2a: Trust in the advisor and perceived usefulness of advice will mediate the relationship between Machiavellianism and advice taking. Specifically, I hypothesize a serial mediation: Machiavellianism → Trust in the advisor → Perceived usefulness of the advice → advice taking.

On the other hand, Machiavellians may use the advice of others because it will help them reach their goal faster. Machiavellians will take advice because they use a mature decision making process (Jones, 2014; Cooper & Peterson, 1980). As part of this process, Machiavellians spend time carefully planning the steps to reach their goal (Jones & Paulhus, 2009, Carre & Jones, 2016). As such, Machiavellians will utilize advice if they perceive it as beneficial to reaching their goal. It is important to the Machiavellian to do whatever is necessary to get ahead (Furnham, Richards, & Paulus, 2013), which may include using advice. In other words, Machiavellians may use advice because they perceive the advice as useful. This leads to the following hypotheses.

Hypothesis 3: Machiavellianism is associated with more advice taking.

Hypothesis 3a: Trust in the advisor and perceived usefulness of advice will mediate the relationship between Machiavellianism and advice taking. Specifically, I hypothesize a serial mediation: Machiavellianism → Trust in the advisor → Perceived usefulness of the advice → advice taking.

Psychopathy

Characteristics of psychopathy

Individuals with high levels of psychopathy (referred to here as psychopaths) lack empathy for others (especially when others are negatively impacted), may act out aggressively, and tend to be more impulsive risk-takers (Carre & Jones, 2016; Palmer, Komaraju, Carter, & Karau, 2017). Many psychopaths do not care about what their own consequences are (Blair, Morton, Leonard, & Blair, 2006). Additionally, psychopaths do not feel attached to those around them and tend to reject social norms (O'Boyle, Forsyth, Banks, & McDaniel, 2011).

Bartels and Pizarro (2011) examined how participants' morals influenced their approach to the classic footbridge dilemma. The footbridge dilemma involves a runaway train and the participant is given two choices: a) to let the train continue on its path and hit five pedestrians or b) intervening and pressing a button to switch the train's direction. By switching the train's path all but one pedestrian will be avoided by the train (Thompson, 1985). This dilemma forces people to choose between passively allowing five people to die or actively killing one person (to save five others). Research has shown that as many as 90% of people would not be able to execute the action (choice b) to harm someone, even if it is ultimately for the greater good (Mikhail, 2007; Bartels & Pizarro, 2011). However, Bartels and Pizarro (2011) found that participants higher on psychopathy were more likely to express being comfortable with turning the train tracks (choice b), the more utilitarian option. Those with high levels of psychopathy reported that they did not feel remorse for actively killing a person.

Researchers expected that the average person would choose the non-utilitarian option because an average person would find it difficult to actively kill someone (versus passively letting others die). This leads some researchers to believe that these participants who have high levels of psychopathy may possess contradictory morals to the average person, because psychopaths justified intervening and turning the tracks to actively kill an individual (Bartels & Pizarro, 2011). The average person would be more likely to feel remorse for their action of killing an individual, whereas a psychopath may not feel remorse but instead believes he chose the most sensible option.

Additionally, psychopaths are more likely to take risks without considering the consequences of those risks (Bartels & Pizarro, 2011). Those with high levels of psychopathy are more uninhibited and bold when making choices (Muris, Merckelbach, Otgaar, & Meijer, 2017).

In fact, psychopathy is associated with risk seeking, meaning that those with higher levels of psychopathy may be more likely to actively seek out situations with higher levels of risk and potential danger (Bartels & Pizarro, 2011; Jones & Paulhus, 2014). Because psychopaths tend to seek risks and display low levels of empathy, they are the most aggressive out of the dark triad (Megargee, 2009, O'Boyle, Forsyth, Banks, & McDaniel, 2011). This common aggressive behavior is what typically results in psychopaths being incarcerated (Megargee, 2009; Jones & Paulhus, 2011).

A primary component of psychopathy is impulsivity (Lynam & Widiger, 2007; Lilienfeld & Andrews, 1996), meaning that a psychopath will most likely make rash and thoughtless decisions. A psychopath may not spend time adhering to the advice of others. These impulsive actions can lead to erratic and poor decision making (Blair, Morton, Leonard, & Blair, 2006). This erratic decision making is what commonly leads someone with psychopathic tendencies to commit crimes and find it difficult to keep employment (Muris, Merckelbach, Otgaar, & Meijer, 2017). As such, those who are higher in psychopathy do not plan their actions very strategically (DeShong et al., 2017).

The influence of psychopathy on advice taking

People with higher levels of psychopathy may be less likely to take advice. A well thought out decision-making process is what commonly leads to a more accurate decision being made (Bonaccio & Dalal, 2006; Larrick & Soll, 2006). Psychopaths are impulsive and make riskier decisions (Muris, Merckelbach, Otgaar, & Meijer, 2017; Jones & Paulus, 2011). As such, a psychopath's erratic tendencies may lead them to make a decision too quickly, while simultaneously ignoring any and all input from others. Furthermore, people with high levels of psychopathy may reject advice because they do not believe that it is necessary to take the time to

consider the advisor's advice. Another reason that people with high levels of psychopathy may be more likely to reject advice is because they find enjoyment in high-risk situations (Bartels & Pizarro, 2011; O'Boyle, Forsyth, Banks, & McDaniel, 2011).

Finally, a psychopathic CEO would have a different perception when deciding whether or not to consider the advice of the VP of HR to cut or retain the HR internship program. A psychopathic CEO would be the least likely of the three traits to have empathy for the VP of HR's input or any of the interns who may lose their internship. A psychopath's tendency to lack remorse for others and not be concerned if they cause harm to another person may indicate that the psychopath does not value others. If the psychopathic CEO does not value the VP of HR, then the CEO is not likely to value the VP's advice either. In this case, the psychopathic CEO may be more likely to maintain the initial decision to cut the internship program, as opposed to taking the VP of HR's advice to retain the program into consideration.

Research has shown that psychopaths tend to feel indifferent about any type of feedback (O'Boyle, Forsyth, Banks, & McDaniel, 2011). As previously discussed, feedback may be a form of advice. The psychopath's lack of concern for others is one reason that psychopaths do not feel guilt for their destructive behaviors. If a psychopath does not feel concern for an advisor, then the psychopath is less likely take the advice because he does not see the advisor as useful. In other words, people with high levels of psychopathy are less likely to take advice because they do not find it necessary to take the time to listen to advice because they do not value the advice giver (Palmer, Komarraju, Carter, & Karau, 2017). A psychopath may view advice as a type of feedback, and therefore, they would prefer not to listen to the advice of another person. This leads to the following hypotheses.

Hypothesis 4: Psychopathy is associated with less advice taking.

Hypothesis 4a: Perceived usefulness of advice mediates the relationship between psychopathy and advice taking.

Overview of the study

This study will be conducted with an online survey using the JAS paradigm. We will examine how much of an influence each of the dark triad traits has on advice taking (Hypothesis 1 – 4). It is important to note that this study is a replication of the studies conducted by Kausel et al. (2015). The current study will also extend the results of the work by Kausel et al. (2015) by examining psychopathy and Machiavellianism in addition to narcissism.

CHAPTER II: METHODS

Participants

Participants were recruited by utilizing Amazon's Mechanical Turk (MTurk). MTurk is an online research platform that allows researchers to gather data from a large pool of people all around the world. Researchers are able to post requests for participants to complete a Human Intelligence Task (HIT) for an established monetary payment. Study results have shown that the MTurk population is more representative of the United States population than are college students (Paolacci, Chandler, & Ipeirotis, 2010). Buhrmester, Kwang, and Gosling (2011) have also found that MTurk data is reliable and similar in quality to other means of data collection.

We recruited 299 participants who were working adults. There were 284 participants who created our useable database. All participants were above 18 years of age, native English speakers and citizens of the United States. The average age of participants was 43 years ($SD = 116.23$). Descriptive statistics showed that about 53% of the participants were single, and 79.6% were White, non-Hispanic.

The MTurk HIT that will be posted will state, "For this study, you will be asked to complete a 30-minute survey involving a brief personality assessment and answer a series of trivia questions." Participants were then asked to complete a general knowledge questionnaire, followed by demographic questions. Once the participants completed the survey, they were shown a randomly generated completion code that could be entered on the MTurk website. Once the participant entered this completion code, they received \$0.50 for their contribution.

Design, procedure, and materials

Participants will first complete two measures that assess all three dark triad traits. The personality measures that will be used are the Dirty Dozen scale and the Short Dark Triad (SD3)

(see Appendix B). The Dirty Dozen (Jonason & Webster, 2010) was created to allow researchers to gather information on the dark triad traits by using a short 12-item questionnaire. Participant answers are measured by using a nine-point Likert scale (1 = *strongly disagree* to 9 = *strongly agree*). Sample items include, “I have used flattery to get my way” and “I tend to lack remorse.”

The SD3 (Jones & Paulhus, 2014) is a 27-item scale that covers each of the dark triad traits in detail (Muris, Merckelbach, Otgaar, & Meijer, 2017). Participant answers are measured using a five-point Likert scale (1 = *disagree strongly* to 5 = *agree strongly*). Each dark triad trait is categorized and assigned nine items each. For example, one of the nine Machiavellianism items is, “It’s not wise to tell your secrets.” One of the nine narcissism items states, “I know that I am special because everyone keeps telling me so.” One of the nine psychopathy items states, “People often say I’m out of control.”

Advice taking task

Task 1. Following the personality measures, participants completed a trivia task which consists of general knowledge questions. The order of Task 1 reveals each general knowledge question, its corresponding advice, and follow-up questions individually, before moving onto the next question. This task consisted of 13 general knowledge questions that each require numeric answers (see Appendix A). Two sample questions include, “In what year did the first Star Wars movie come out?” and “How many stories is the Empire State Building?” Twelve of the trivia questions will be provided from a previous study where all questions were pilot tested (Kausel et al., 2015). One additional question had to be added due to a question regarding the amount of Lance Armstrong's Tour de France Titles. After the discovery of his use of banned substances, the answer to this question could be either zero or seven. Therefore, this item was revised to state, “How many times has Lance Armstrong won the Tour de France, prior to his substance

abuse scandal?”. Additionally, I added the item, “How many total Olympic medals has Michael Phelps won?” to supplement the modification of the Lance Armstrong question. This also allows for the removal of the Armstrong question if the banned substances scandal confounds participants’ responses.

After providing their estimate for each question, participants will be asked to indicate their level of confidence in their estimate from 0% (*not at all confident*) to 100% (*completely confident*). This is a slight modification from the Kausel et al. (2015) study. In their study, they asked participants to provide a 90% confidence interval around their estimates. I took into consideration the fact that Kausel et al (2015) did not find any effects of confidence, but I believe this may be due to the possible confusion with the confidence interval that was used. I propose to use a more direct measure of confidence.

Once the participant has entered their initial guess and their percentage of confidence in their response, then the participant will be shown advice that pertains to the question that was just responded to. The advice will remain the same across all participants and will be purportedly from a previous participant. The advice values were determined by Kausel et al. (2015) in advance by using scores from a random individual in a pilot study. Before the analysis, the outliers were removed (i.e., individuals from the pilot study who were highly accurate or inaccurate).

There were two modifications from the Kausel et al. (2015) study. The first modification being that the values for the Michael Phelps question were not determined in the Kausel et al. (2015) study. The second modification converts the confidence intervals into a percentage of confidence by dividing the original lower limit by the original upper limit. To prevent values from being near 100%, any values that were greater than 100, such as the year *Star Wars* was

released, only the last two digits were used to calculate the new confidence interval (see Appendix A). The advice values have been derived in Kausel et al.'s (2015) previous study. However, because I will be using a more direct measure of confidence, the confidence intervals for the advice were replaced with values indicating degree of confidence. These values were derived by dividing the estimate in the advice from the upper limit of the 90% confidence interval.

Perceived usefulness of the advice. Once the participant has reviewed the advice, a rating scale will be used to ask the participant to provide ratings regarding how accurate and useful they believed the previous participant's answers were (see Appendix C). The Likert scale measures from 1 (not accurate/useful at all) to 7 (very accurate/useful). This measure was created and tested in Kausel et al.'s (2015) study. The higher the participant scores the advice, the more useful the participant perceives the advice to be when making decisions.

Perceived usefulness of the advisor. Following the completion of the perceived usefulness of advice scale, participants will be asked to rate how useful and confident they perceived their advisor to be (see Appendix C). If the participants indicate that they perceived the advisor to be useful, then the participant will be asked if they used the advice to help improve their response.

Task 2. By completing Task 1, the participant has completed all 13 of the initial general knowledge questions, reviewed all of the advice, and rated the advice and the advisor. The next task requires the participant to provide estimates to the same set of trivia questions and indicate their degree of confidence in each estimate for the second time. Asking the participants to answer the same general knowledge questions a second time allows for the measurement of how much the participant adjusted his or her responses based on the advice. This is called the weight of

advice (WOA). The WOA is used to measure the degree to which the participants utilize the advice. The WOA is the absolute value of the difference between the final estimate and the initial estimate, which is then divided by the absolute value of the difference between the advice and the initial estimate (Kausel et al., 2015).

Control variables. Extraversion will be controlled in this study because positive emotions have been found to be related to advice taking (Gino & Schweitzer, 2008), and previous research has found that extraversion may have an influence over increasing advice taking (Kausel et al., 2015). In other words, a person who is extraverted may have a stronger desire to form relationships and may be more inclined to consider the advice of others. Extraversion is measured using Saucier's (1994) eight-item questionnaire (see Appendix B). This short Big-Five measure includes 40 common traits which measures all of the Big-Five traits (agreeableness, neuroticism, extraversion, openness, and conscientiousness) and uses a nine-point Likert scale (1 = *strongly disagree* to 9 = *strongly agree*).

The final part of the survey will include general demographic questions. The general demographic questions will include one question asking the participant to self-assess their own general knowledge level (see Appendix C). Once the participant has completed the survey, he or she will then receive a randomly generated completion code which can be entered into the MTurk website to confirm that the survey has been completed. Once the code has been validated, then the participant will receive compensation.

CHAPTER III: RESULTS

Prior to testing the hypotheses, I checked the reliability of the two dark triad personality scales, the Dirty Dozen and the SD3. After reviewing the reliability scores of the Dirty Dozen and the SD3, the Dirty Dozen had consistently higher reliabilities. Therefore, only the results of the Dirty Dozen will be reported. Each of the Dirty Dozen subscales had acceptable levels of internal consistency reliability (see Table 1).

Table 1
Internal consistency reliability for the dark triad scales

	Dirty Dozen	Short Dark Triad (SD3)
Narcissism	.88	.79
Machiavellianism	.85	.84
Psychopathy	.82	.77

Next, I checked the reliability of trivia question #5 (“How many total Olympic medals has Michael Phelps won?”). This question was added as a possible alternative to question #13 (How many times has Lance Armstrong won the Tour de France, prior to his substance abuse scandal?) due to the possibility that Lance Armstrong’s substance abuse scandal may have invalidated the question. The reliability analysis revealed that without the question about Michael Phelps’s Olympic medals ($\alpha = .63$) the reliability coefficient was slightly worse than when this question was included ($\alpha = .66$). Therefore, the analyses are reported with the inclusion of question 4.

Extraversion was controlled in this study because positive emotions have been found to be related to advice taking (Gino & Schweitzer, 2008), and previous research has found that extraversion may have an influence on advice taking (Kausel et al., 2015). In other words, a person who is extraverted may have a stronger desire to form relationships and may be more inclined to consider the advice of others.

Prior to running hypotheses, certain responses had to be removed due to the initial estimate being equal to the advice. WOA responses that were greater than 1 were also removed because this indicates that the final estimate moves away from the advice (Kausel et al., 2015). There was one instance where the participant answered one date as with a four-digit version (e.g. 1964) and one with a two digit (e.g. 64). Given the context of the question, it does not make sense for there to be a 1900 value difference between the estimates. Therefore, I decided to include a “19” in front on this participant’s two-digit answer.

Test of hypotheses

The test of the hypotheses is a close replication of the approach that was used in the Kausel et al. (2015) study. The first hypothesis stated that narcissism would be negatively associated with advice taking (*Hypothesis 1*) and that this relationship would be mediated by perceived usefulness of advice (*Hypothesis 1a*). This hypothesis was tested utilizing Hayes’ (2012) Model 4 procedure to analyze mediation. Accuracy in one’s initial estimate and extraversion were entered as covariates (see Kausel et al., 2015). After controlling for both of these variables, I found that narcissism significantly predicted perceived usefulness of the advice ($\beta = .06, p < .05$). The effect was in the opposite direction than was predicted. Perceived usefulness of advice significantly predicted advice taking ($\beta = .13, p < .01$). Overall, narcissism had a significant indirect effect on advice taking, when mediated by perceived usefulness of advice (*indirect effect* = .008; 95% CI [.002, .015]). Thus, Hypothesis 1 was partially supported. Narcissists are more likely to view the advisor as useful and therefore they are more likely to utilize advice. Further exploration of the data revealed that the direct effect of narcissism on advice taking was in the negative direction (*direct effect* = -0.003, 95% CI [-0.016, .009]).

The second and third hypotheses are competing hypotheses. Hypothesis 2 & 2a stated that Machiavellianism would have a negative indirect effect on advice taking through trust in the advisor and perceived usefulness of advice. In contrast, Hypothesis 3 & 3a stated that Machiavellianism would have a positive indirect effect on advice taking through trust in the advisor, followed by perceived usefulness of advice.

To test these competing hypotheses, I used Hayes' (2012) procedure for testing serial mediation (Model 6). Again, I controlled for extraversion and overall accuracy. After controlling for both of these variables, I found that Machiavellianism significantly (positively) predicted trust in the advisor ($\beta = 1.72, p < .01$). Trust in the advisor significantly predicted perceived usefulness of the advice ($\beta = .04, p < .01$). Perceived usefulness of advice significantly predicted advice taking ($\beta = .12, p < .01$). Overall, Machiavellianism had a significant positive indirect effect on advice taking, when mediated by trust in the advisor and perceived usefulness of advice (*indirect effect* = .007; 95% CI [.000, .015]). Thus, Hypotheses 3 & 3a were supported, and Hypothesis 2 & 2a were *not* supported. These results suggest that Machiavellians are more likely to trust the advisor and find their advice useful, therefore a Machiavellian is more likely to utilize advice. Further exploration of the data revealed that the direct effect of Machiavellianism on advice taking was in the positive direction (*direct effect* = .002, 95% CI [-0.011, .015]).

Hypothesis 4 stated that there would be an indirect relationship between psychopathy on advice taking through perceived usefulness of advice. I controlled for extraversion and overall accuracy. After controlling for these variables, I found that psychopathy did not significantly predict perceived usefulness of advice ($\beta = -.03, p = .22$). Perceived usefulness of advice significantly predicted advice taking ($\beta = .13, p < .01$). Overall, psychopathy did not have a significant indirect effect on advice taking, when mediated by perceived usefulness of advice

(*indirect effect* = -0.005; 95% CI [-.014, .003]). Thus, Hypothesis 3 was not supported. These results show that psychopaths are not more or less likely to take advice. Further exploration of the data revealed that the direct effect of psychopathy on advice taking was in the negative direction (*direct effect* = -0.005, 95% CI [-0.019, .009]).

CHAPTER IV: DISCUSSION

The purpose of this study was to examine the relationship between the dark triad and advice taking. By doing so, this study aimed to replicate and extend the results of Kausel et al. (2015). My results suggest that narcissism is positively related to advice taking in part because narcissists perceived the advice as useful. My results contrast previous research demonstrating that narcissists are more likely to dismiss advice (e.g., Kausel et al., 2015). One explanation for the contrasting results is that the current results may demonstrate narcissists engaging in self-enhancement strategies. For instance, Hart, Adams, Burton, and Tortoriello (2017) found that narcissists engage in assertive impression-management strategies, whereby narcissists actively promote a desired self-image. As such, narcissists may have used advice in this study because they believed it would make them look better.

As expected, I found that Machiavellianism was positively related to advice taking in part because Machiavellians trusted the advisor, which in turn led the Machiavellians to perceive the advice as useful. However, this contrasts previous research that suggests Machiavellians do not trust others (O'Boyle et al., 2011). One possibility for why this study showed that Machiavellians were *more* likely to trust others and use the advice is that Machiavellians may have viewed the advisor as a way to improve their own responses to the trivia questions. The Machiavellians may have used their more mature (albeit somewhat manipulative) decision making process and viewed the advice as a useful way to help them achieve their goal (in this case, correctly answering the trivia questions). As such, the Machiavellians viewed the advisor as trustworthy and viewed the advice as useful. Indeed, this is consistent with previous research showing that Machiavellians will exploit other people if they believe that using another person

will help the Machiavellian achieve his or her own goals (e.g., Furnham, Richards, Paulhus, 2013).

Lastly, contrary to expectations, psychopathy did not have a significant indirect effect on advice taking through perceived usefulness of the advice. This may be because a key aspect of psychopathy is the lack of empathy, and the nature of the advice taking task was not designed to evoke empathic reactions. In other words, psychopaths do not feel empathy, but this trivia task was not designed to evoke empathy. Perhaps if the task or the advice was one that required more emotion, then someone with psychopathic characteristics would have been more likely to reject the advice to avoid a situation that requires empathy or emotion. Perhaps a psychopath's tendency to feel indifferent towards advice may result in the psychopath not caring strongly about the result of their decision (e.g., O'Boyle et al., 2011). The lack of support for this hypothesis also suggests that individuals high on psychopathy are neither more nor less likely to use or dismiss advice. This is important because it differs from past research which suggests that psychopaths might reject advice because they may not care about the advisor's recommendations.

Practical and theoretical contributions

These findings suggest that organizations should be aware of their employee's decision-making processes, especially when it is the organizational leaders who are making the decisions. When making decisions, it is recommended that employees consult with others, but previous research suggests that those with dark triad traits may be less likely to take the advice of others (Kausel et al., 2015). However, I found that narcissists may be more likely to take advice because the narcissist may think that it makes themselves appear more knowledgeable. The narcissist may believe that they appear more impressive when they answer the question correctly.

The narcissist could be perceiving the advice as useful because the advice enhances their appearance to others. Organizations may not need to be as concerned as previously thought (e.g., Kausel et al., 2015) when relying on a leader with narcissistic traits to make a decision because the narcissist may utilize advice in order to make a favorable impression.

Next, we address Machiavellianism. My findings support previous research that shows that Machiavellians have a mature decision-making process (Carre & Jones, 2016), which may be why they are more likely to take advice. Employers should be encouraged that despite their employees having self-serving tendencies, Machiavellians may be willing to utilize advice when making decisions, especially when that advice benefits them. Organizations need to act on the knowledge that a leader with Machiavellian tendencies may be more likely to take advice if the leader believes it will make them look better.

Finally, there were no statistically significant findings related to psychopathy. These non-statistically significant findings have practical significance. Research consistently shows that those with psychopathic tendencies are more likely to steal from the workplace, act violently towards their coworkers, and commonly disagree with those around them (Smith & Lilienfeld, 2013). While selection tests should attempt to screen out applicants who have psychopathic tendencies, it is still important to consider those organizations that do have employees who have psychopathic tendencies. Despite all of these counterproductive work behaviors, my results show that psychopaths are no more likely to reject advice than non-psychopaths.

Limitations and future research

One limitation to the present research is the trivia question relating to Lance Armstrong, which was previously addressed. The researchers were concerned that this question may be invalid due to the recent findings about Armstrong's substance abuse scandal, which led to the

stripping of his titles. As noted, a similar trivia question was added and the reliability score indicated that the replacement question was adequate.

Other limitations include the study being administered online, and therefore, the survey was not able to be supervised. The number of participants who knew the correct answer to multiple trivia questions was above average. There is a possibility that a number of participants utilized the internet to gain quick access to the correct answer. On average, the participants felt that this trivia task was a 4.8 out of 7 on a difficulty scale. MTurk is considered a convenience sample, so it would be beneficial for future researchers to target managers and leaders who work in a corporate environment and who are not able to immediately look up the answers to the questions.

Future researchers may also want to look into how this research can be applied in an organizational setting. An alternative to the trivia questions would be to make the questions more job-related. For example, a job-related task could be geared towards receiving feedback, as opposed to advice. Advice taking is similar to receiving feedback, so organizations may reassess how they deliver feedback to employees who may not be particularly receptive to feedback (O'Boyle et al., 2011). The results would be more easily generalized to working professionals if the survey questions were job related.

Similar to Kausal et al.'s (2015) research, future research could include a priming component because this could be potentially utilized by employers. Kausal et al. (2015) used a priming task because the magnitude of the effect sizes was quite small. If findings are consistent with my results, then it would be likely that those who are primed to be higher on narcissism or Machiavellianism would be more likely to utilize advice. However, the effects would be larger. A high priming condition would shift the distribution and may make it easier to detect an effect.

Due to there being no significant findings regarding psychopathy, it is likely that even with a priming condition, there would be no effect. It could be beneficial to learn about what circumstances result in psychopaths accepting or rejecting advice.

Finally, future research could expand on the number of mediators and moderators that are analyzed. This research looked at how the relationship between the dark triad and advice was mediated by perceived usefulness of advice. Additionally, Machiavellianism was mediated by perceived trust in the advisor. Future research could expand on many of the other mediators and moderators that have been assessed in past research. One moderator may be altering this study which requires the judge to believe that their close friend is the one delivering the advice. Past research indicates that people are more likely to take advice if it comes from someone they know personally, especially if this person's advice has been useful in the past (Van Swol & Sniezek, 2005). Additionally, the participant may be more likely to utilize the advice if they believe they are in a situation where it is crucial that they make the correct decision (Dalal & Bonaccio, 2010). The participants could be given a scenario in which the wrong decision could cause harm in the workplace, such as causing their co-workers to lose their job. Finally, another moderator would be whether or not the judge believed they are an expert on the subject (Sniezek & Van Swol, 2001). For example, due to a Machiavellians tendency to believe they are superior, they may believe they are more knowledgeable on many subjects and therefore this confidence may decrease how useful they perceive the advice of others to be.

Conclusion

Evidence was found suggesting that narcissism and Machiavellianism was positively related to advice taking before making a decision. However, the finding regarding Machiavellianism only occurred when the relationship was mediated by trust in the advisor.

Psychopaths did not strongly prefer accepting or rejecting advice. This research demonstrates how crucial it is to consider the motivational factors behind advice taking and decision making, especially when the decision is being made by some with dark triad personality characteristics.

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APPENDICES

APPENDIX A: TASK 1

In this first task, you will be asked to provide an answer for each of the 12 questions. In addition to your answer, you must indicate how confident you are with each estimate on a scale of 0% (not at all confident) to 100% (completely confident). You are asked to provide estimations for all questions, even if you have no clue.

QUESTIONS:

1. What is the average lifespan for an African elephant in the wild? Years: _____
How confident are you in your estimate? _____%

[SURVEY PAGE BREAK]

2. In what year did the first *Star Wars* movie come out? Year: _____
How confident are you in your estimate? _____%

[SURVEY PAGE BREAK]

3. How old was Elvis Presley when he died? Age in years: _____
How confident are you in your estimate? _____%

[SURVEY PAGE BREAK]

4. How many total Olympic medals has Michael Phelps won? _____
How confident are you in your estimate? _____%

[SURVEY PAGE BREAK]

5. How many stories is the Empire State Building? Stories: _____
How confident are you in your estimate? _____%

[SURVEY PAGE BREAK]

6. How many hot dogs did Joey Chestnut eat to win the 2011 Nathan's Hot Dog Eating Contest? Hot Dogs: _____
How confident are you in your estimate? _____%

[SURVEY PAGE BREAK]

7. How many keys are there on a standard modern piano? Keys: _____
How confident are you in your estimate? _____%

[SURVEY PAGE BREAK]

8. What is the top speed (in mph) that a cheetah can obtain? Speed: _____ mph
How confident are you in your estimate? _____%

[SURVEY PAGE BREAK]

9. In what year did Disney's Magic Kingdom open? Year: _____
How confident are you in your estimate? _____%

[SURVEY PAGE BREAK]

10. How many World Series have the New York Yankees won? Wins: _____
How confident are you in your estimate? _____%

[SURVEY PAGE BREAK]

11. Not including the cue ball, how many balls are in a standard pool (pocket billiards) game? Ball: _____
How confident are you in your estimate? _____%

[SURVEY PAGE BREAK]

12. How many U.S. presidents have there been? Presidents: _____
How confident are you in your estimate? _____%

[SURVEY PAGE BREAK]

13. How many times has Lance Armstrong won the Tour de France, prior to his substance abuse scandal? _____
How confident are you in your estimate? _____%

[SURVEY PAGE BREAK]

APPENDIX B: TASK 2

In this second task, you will be asked the same questions for which you just made estimations. Again, you will be asked to answer each question and indicate how confident you are with each estimate on a scale of 0% (not at all confident) to 100% (completely confident). You are asked to provide estimations for all questions, even if you have no clue. Note that you are also provided with the **actual answers (estimates) that a previous participant gave, in order to help you make your estimations.**

Question #	Estimate	Degree of confidence
1 (average elephant lifespan)	63	67%

Question 1a. What is the average lifespan for an African elephant in the wild?

Years: _____

How confident are you in your estimate? _____%

Perceived Usefulness and Accuracy of Advice

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

Perceived Usefulness of Advice

1. How useful would you rate the “advice” that you received from the previous participant?
Please use the following scale.

1 (Not useful at all), 2 (Not useful), 3 (Somewhat useful), 4 (neutral), 5 (Somewhat useful), 6 (Useful), 7 (Very useful)

2. Did you use the advice?
Select: Yes, No

3. If you did use the advice, did the use of the advice improve your response?
Select: Yes, I am not sure, No

Perceived Accuracy of Advice

How accurate do you think the previous participant’s estimates were? Please use the following scale.

1 (Not accurate at all), 2 (Not accurate), 3 (Somewhat accurate), 4 (neutral), 5 (Somewhat accurate), 6 (Accurate), 7 (Very accurate)

[SURVEY PAGE BREAK]

Question #	Estimate	Degree of confidence
2 (year of <i>Star Wars</i> movie)	1982	93%

Question 2a. In what year did the first *Star Wars* movie come out? Year: _____
 How confident are you in your estimate? _____%

Perceived Usefulness and Accuracy of Advice

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

Perceived Usefulness of Advice

1. How useful would you rate the “advice” that you received from the previous participant?
Please use the following scale.

1 (Not useful at all), 2 (Not useful), 3 (Somewhat useful), 4 (neutral), 5 (Somewhat useful), 6 (Useful), 7 (Very useful)

2. Did you use the advice?
Select: Yes, No

3. If you did use the advice, did the use of the advice improve your response?
Select: Yes, I am not sure, No

Perceived Accuracy of Advice

How accurate do you think the previous participant’s estimates were? Please use the following scale.

1 (Not accurate at all), 2 (Not accurate), 3 (Somewhat accurate), 4 (neutral), 5 (Somewhat accurate), 6 (Accurate), 7 (Very accurate)

[SURVEY PAGE BREAK]

Question #	Estimate	Degree of confidence
3 (age Elvis Presley died)	34	89%

Question 3a. How old was Elvis Presley when he died? Age in years: _____

How confident are you in your estimate? _____%

Perceived Usefulness and Accuracy of Advice

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

Perceived Usefulness of Advice

1. How useful would you rate the “advice” that you received from the previous participant?
Please use the following scale.

1 (Not useful at all), 2 (Not useful), 3 (Somewhat useful), 4 (neutral), 5 (Somewhat useful), 6 (Useful), 7 (Very useful)

2. Did you use the advice?

Select: Yes, No

3. If you did use the advice, did the use of the advice improve your response?

Select: Yes, I am not sure, No

Perceived Accuracy of Advice

How accurate do you think the previous participant’s estimates were? Please use the following scale.

1 (Not accurate at all), 2 (Not accurate), 3 (Somewhat accurate), 4 (neutral), 5 (Somewhat accurate), 6 (Accurate), 7 (Very accurate)

[SURVEY PAGE BREAK]

Question #	Estimate	Degree of confidence
4 (number of total Olympic medals Michael Phelps has won)	23	70%

Question 4a. How many total Olympic medals has Michael Phelps won? _____
 How confident are you in your estimate? _____%

Perceived Usefulness and Accuracy of Advice

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

Perceived Usefulness of Advice

1. How useful would you rate the “advice” that you received from the previous participant?
Please use the following scale.
1 (Not useful at all), 2 (Not useful), 3 (Somewhat useful), 4 (neutral), 5 (Somewhat useful), 6 (Useful), 7 (Very useful)
2. Did you use the advice?
Select: Yes, No
3. If you did use the advice, did the use of the advice improve your response?
Select: Yes, I am not sure, No

Perceived Accuracy of Advice

How accurate do you think the previous participant’s estimates were? Please use the following scale.

1 (Not accurate at all), 2 (Not accurate), 3 (Somewhat accurate), 4 (neutral), 5 (Somewhat accurate), 6 (Accurate), 7 (Very accurate)

[SURVEY PAGE BREAK]

Question #	Estimate	Degree of confidence
5 (Empire State Building stories)	75	67%

Question 5a.

How many stories is the Empire State Building? Stories: _____

How confident are you in your estimate? _____%

Perceived Usefulness and Accuracy of Advice

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

Perceived Usefulness of Advice

1. How useful would you rate the “advice” that you received from the previous participant?
Please use the following scale.

1 (Not useful at all), 2 (Not useful), 3 (Somewhat useful), 4 (neutral), 5 (Somewhat useful), 6 (Useful), 7 (Very useful)

2. Did you use the advice?

Select: Yes, No

3. If you did use the advice, did the use of the advice improve your response?

Select: Yes, I am not sure, No

Perceived Accuracy of Advice

How accurate do you think the previous participant’s estimates were? Please use the following scale.

1 (Not accurate at all), 2 (Not accurate), 3 (Somewhat accurate), 4 (neutral), 5 (Somewhat accurate), 6 (Accurate), 7 (Very accurate)

[SURVEY PAGE BREAK]

Question #	Estimate	Degree of confidence
6 (number of hotdogs Joey Chestnut ate)	42	60%

Question 6a.

How many hot dogs did Joey Chestnut eat to win the 2011 Nathan's Hot Dog Eating Contest?

Hot Dogs: _____

How confident are you in your estimate? _____%

Perceived Usefulness and Accuracy of Advice

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

Perceived Usefulness of Advice

1. How useful would you rate the "advice" that you received from the previous participant?
Please use the following scale.

1 (Not useful at all), 2 (Not useful), 3 (Somewhat useful), 4 (neutral), 5 (Somewhat useful), 6 (Useful), 7 (Very useful)

2. Did you use the advice?

Select: Yes, No

3. If you did use the advice, did the use of the advice improve your response?

Select: Yes, I am not sure, No

Perceived Accuracy of Advice

How accurate do you think the previous participant's estimates were? Please use the following scale.

1 (Not accurate at all), 2 (Not accurate), 3 (Somewhat accurate), 4 (neutral), 5 (Somewhat accurate), 6 (Accurate), 7 (Very accurate)

[SURVEY PAGE BREAK]

Question #	Estimate	Degree of confidence
7 (number of keys on a standard piano)	100	83%

Question 7a.

How many keys are there on a standard modern piano? Keys: _____

How confident are you in your estimate? _____%

Perceived Usefulness and Accuracy of Advice

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

Perceived Usefulness of Advice

1. How useful would you rate the “advice” that you received from the previous participant?
Please use the following scale.

1 (Not useful at all), 2 (Not useful), 3 (Somewhat useful), 4 (neutral), 5 (Somewhat useful), 6 (Useful), 7 (Very useful)

2. Did you use the advice?

Select: Yes, No

3. If you did use the advice, did the use of the advice improve your response?

Select: Yes, I am not sure, No

Perceived Accuracy of Advice

How accurate do you think the previous participant’s estimates were? Please use the following scale.

1 (Not accurate at all), 2 (Not accurate), 3 (Somewhat accurate), 4 (neutral), 5 (Somewhat accurate), 6 (Accurate), 7 (Very accurate)

[SURVEY PAGE BREAK]

Question #	Estimate	Degree of confidence
8 (top speed of cheetah in MPH)	70	89%

Question 8a.

What is the top speed (in mph) that a cheetah can obtain? Speed: _____ mph

How confident are you in your estimate? _____%

Perceived Usefulness and Accuracy of Advice

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

Perceived Usefulness of Advice

1. How useful would you rate the “advice” that you received from the previous participant?
Please use the following scale.

1 (Not useful at all), 2 (Not useful), 3 (Somewhat useful), 4 (neutral), 5 (Somewhat useful), 6 (Useful), 7 (Very useful)

2. Did you use the advice?

Select: Yes, No

3. If you did use the advice, did the use of the advice improve your response?

Select: Yes, I am not sure, No

Perceived Accuracy of Advice

How accurate do you think the previous participant’s estimates were? Please use the following scale.

1 (Not accurate at all), 2 (Not accurate), 3 (Somewhat accurate), 4 (neutral), 5 (Somewhat accurate), 6 (Accurate), 7 (Very accurate)

[SURVEY PAGE BREAK]

Question #	Estimate	Degree of confidence
9 (year Disney's Magic Kingdom opened)	1973	97%

Question 9a.

In what year did Disney's Magic Kingdom open? Year: _____

How confident are you in your estimate? _____%

Perceived Usefulness and Accuracy of Advice

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

Perceived Usefulness of Advice

1. How useful would you rate the "advice" that you received from the previous participant?
Please use the following scale.

1 (Not useful at all), 2 (Not useful), 3 (Somewhat useful), 4 (neutral), 5 (Somewhat useful), 6 (Useful), 7 (Very useful)

2. Did you use the advice?

Select: Yes, No

3. If you did use the advice, did the use of the advice improve your response?

Select: Yes, I am not sure, No

Perceived Accuracy of Advice

How accurate do you think the previous participant's estimates were? Please use the following scale.

1 (Not accurate at all), 2 (Not accurate), 3 (Somewhat accurate), 4 (neutral), 5 (Somewhat accurate), 6 (Accurate), 7 (Very accurate)

[SURVEY PAGE BREAK]

Question #	Estimate	Degree of confidence
10 (number of World Series the Yankees won)	7	70%

Question 10a.

How many World Series have the New York Yankees won? Wins: _____

How confident are you in your estimate? _____%

Perceived Usefulness and Accuracy of Advice

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

Perceived Usefulness of Advice

1. How useful would you rate the “advice” that you received from the previous participant?
Please use the following scale.

1 (Not useful at all), 2 (Not useful), 3 (Somewhat useful), 4 (neutral), 5 (Somewhat useful), 6 (Useful), 7 (Very useful)

2. Did you use the advice?
Select: Yes, No

3. If you did use the advice, did the use of the advice improve your response?
Select: Yes, I am not sure, No

Perceived Accuracy of Advice

How accurate do you think the previous participant’s estimates were? Please use the following scale.

1 (Not accurate at all), 2 (Not accurate), 3 (Somewhat accurate), 4 (neutral), 5 (Somewhat accurate), 6 (Accurate), 7 (Very accurate)

[SURVEY PAGE BREAK]

Question #	Estimate	Degree of confidence
11 (number of balls in pocket billiards)	10	67%

Question 11a.

Not including the cue ball, how many balls are in a standard pool (pocket billiards) game? Ball:

How confident are you in your estimate? _____%

Perceived Usefulness and Accuracy of Advice

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

Perceived Usefulness of Advice

1. How useful would you rate the “advice” that you received from the previous participant?
Please use the following scale.

1 (Not useful at all), 2 (Not useful), 3 (Somewhat useful), 4 (neutral), 5 (Somewhat useful), 6 (Useful), 7 (Very useful)

2. Did you use the advice?

Select: Yes, No

3. If you did use the advice, did the use of the advice improve your response?

Select: Yes, I am not sure, No

Perceived Accuracy of Advice

How accurate do you think the previous participant’s estimates were? Please use the following scale.

1 (Not accurate at all), 2 (Not accurate), 3 (Somewhat accurate), 4 (neutral), 5 (Somewhat accurate), 6 (Accurate), 7 (Very accurate)

[SURVEY PAGE BREAK]

Question #	Estimate	Degree of confidence
12 (number of U.S. presidents)	44	92%

Question 12a.

How many U.S. presidents have there been? Presidents: _____

How confident are you in your estimate? _____%

Perceived Usefulness and Accuracy of Advice

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

Perceived Usefulness of Advice

1. How useful would you rate the “advice” that you received from the previous participant?
Please use the following scale.

1 (Not useful at all), 2 (Not useful), 3 (Somewhat useful), 4 (neutral), 5 (Somewhat useful), 6 (Useful), 7 (Very useful)

2. Did you use the advice?
Select: Yes, No

3. If you did use the advice, did the use of the advice improve your response?
Select: Yes, I am not sure, No

Perceived Accuracy of Advice

How accurate do you think the previous participant’s estimates were? Please use the following scale.

1 (Not accurate at all), 2 (Not accurate), 3 (Somewhat accurate), 4 (neutral), 5 (Somewhat accurate), 6 (Accurate), 7 (Very accurate)

[SURVEY PAGE BREAK]

Question #	Estimate	Degree of confidence
13 (number of Lance Armstrong wins)	7	95%

Question 13a.

How many times has Lance Armstrong won the Tour de France, prior to his substance abuse scandal? _____

How confident are you in your estimate? _____%

Perceived Usefulness and Accuracy of Advice

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

Perceived Usefulness of Advice

1. How useful would you rate the “advice” that you received from the previous participant?
Please use the following scale.

1 (Not useful at all), 2 (Not useful), 3 (Somewhat useful), 4 (neutral), 5 (Somewhat useful), 6 (Useful), 7 (Very useful)

2. Did you use the advice?
Select: Yes, No

3. If you did use the advice, did the use of the advice improve your response?
Select: Yes, I am not sure, No

Perceived Accuracy of Advice

How accurate do you think the previous participant’s estimates were? Please use the following scale.

1 (Not accurate at all), 2 (Not accurate), 3 (Somewhat accurate), 4 (neutral), 5 (Somewhat accurate), 6 (Accurate), 7 (Very accurate)

[SURVEY PAGE BREAK]

APPENDIX C: PERSONALITY MEASURES**The Dirty Dozen (Jonason & Webster, 2010)**

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

1 (Strongly disagree) to 9 (Strongly agree)

1. I tend to manipulate others to get my way. -
2. I have used deceit or lied to get my way.
3. I have used flattery to get my way.
4. I tend to exploit others towards my own end.
5. I tend to lack remorse.
6. I tend to not be too concerned with morality or the morality of my actions.
7. I tend to be callous or insensitive.
8. I tend to be cynical.
9. I tend to want others to admire me.
10. I tend to want others to pay attention to me.
11. I tend to seek prestige or status.
12. I tend to expect special favors from others.

The Short Dark Triad (SD3) (Jones & Paulhus, 2014)

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

1 (Disagree strongly), 2 (Disagree), 3 (Neither agree nor disagree), 4 (Agree), 5 (Agree strongly)

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 a 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) (Jones & Paulhus, 2014).

Big-Five Personality Characteristics

40-Item Mini-Marker Set (Saucier, 1994)

Instructions: How Accurately Can You Describe Yourself?

Please use this list of common human traits to describe yourself as accurately as possible. Describe yourself as you see yourself at the present time, not as you wish to be in the future. Describe yourself as you are generally or typically, as compared with other persons you know of the same sex and of roughly the same age.

Before each trait, please select a number indicating how accurately that trait describes you, using the following rating scale:

After each trait, please enter a number indicating how accurately that trait describes you, based on the following scale: 1 (Extremely Inaccurate), 2 (Very Inaccurate), 3 (Moderately Inaccurate), 4 (Slightly Inaccurate), 5 (Neutral), 6 (Slightly Accurate), 7 (Moderately Accurate), 8 (Very Accurate), 9 (Extremely Accurate)

Inaccurate				?	Accurate			
Extremely	Very	Moderately	Slightly		Slightly	Moderately	Very	Extremely
1	2	3	4	5	6	7	8	9
<input type="checkbox"/> Bashful		<input type="checkbox"/> Energetic			<input type="checkbox"/> Moody		<input type="checkbox"/> Systematic	
<input type="checkbox"/> Bold		<input type="checkbox"/> Envious			<input type="checkbox"/> Organized		<input type="checkbox"/> Talkative	
<input type="checkbox"/> Careless		<input type="checkbox"/> Extraverted			<input type="checkbox"/> Philosophical		<input type="checkbox"/> Temperamental	
<input type="checkbox"/> Cold		<input type="checkbox"/> Fretful			<input type="checkbox"/> Practical		<input type="checkbox"/> Touchy	
<input type="checkbox"/> Complex		<input type="checkbox"/> Harsh			<input type="checkbox"/> Quiet		<input type="checkbox"/> Uncreative	
<input type="checkbox"/> Cooperative		<input type="checkbox"/> Imaginative			<input type="checkbox"/> Relaxed		<input type="checkbox"/> Unenvious	
<input type="checkbox"/> Creative		<input type="checkbox"/> Inefficient			<input type="checkbox"/> Rude		<input type="checkbox"/> Unintellectual	
<input type="checkbox"/> Deep		<input type="checkbox"/> Intellectual			<input type="checkbox"/> Shy		<input type="checkbox"/> Unsympathetic	
<input type="checkbox"/> Disorganized		<input type="checkbox"/> Jealous			<input type="checkbox"/> Sloppy		<input type="checkbox"/> Warm	
<input type="checkbox"/> Efficient		<input type="checkbox"/> Kind			<input type="checkbox"/> Sympathetic		<input type="checkbox"/> Withdrawn	

APPENDIX D: PERCEIVED USEFULNESS AND ACCURACY OF ADVICE

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

Perceived Usefulness of Advice

4. How useful would you rate the “advice” that you received from the previous participant?
Please use the following scale.

1 (Not useful at all), 2 (Not useful), 3 (Somewhat useful), 4 (neutral), 5 (Somewhat useful), 6 (Useful), 7 (Very useful)

5. Did you use the advice?
Select: Yes, No

6. If you did use the advice, did the use of the advice improve your response?
Select: Yes, I am not sure, No

Perceived Accuracy of Advice

How accurate do you think the previous participant’s estimates were? Please use the following scale.

1 (Not accurate at all), 2 (Not accurate), 3 (Somewhat accurate), 4 (neutral), 5 (Somewhat accurate), 6 (Accurate), 7 (Very accurate)

APPENDIX E: PERCEIVED USEFULNESS AND COMPETENCY OF THE ADVISOR

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

Perceived Usefulness of the Advisor

The person whose estimates you were able to see previously participated in the trivia facts study. Although you have limited information about this participant, we would like you to assess this person, making an inference on the basis of their answers. Please answer the following questions about the previous participant, whose answers you were able to see and use in your second estimates.

1 (Not likely at all), 2 (Not likely), 3 (Somewhat likely), 4 (neutral), 5 (Somewhat likely), 6 (Likely), 7 (Very likely)

1. The previous participant is competent.
2. The previous participant tends to make mistakes in tests and assessments.
3. The previous participant is smarter than other people.
4. The previous participant has trouble understanding things that s/he reads.
5. The previous participant does well in anything related to his/her cognitive abilities.

Perceived Demographics of the Advisor

Please indicate if you believe the advisor is a male or female.

Select: male, female

General Knowledge Assessment of the Participant

How hard do you think were the questions included in both tasks? Please use the following scale.

Select: Very easy, easy, somewhat easy, neutral, somewhat difficult, difficult, very difficult

APPENDIX F: IRB APPROVAL

IRB
INSTITUTIONAL REVIEW BOARD
 Office of Research
 Compliance, 010A Sam
 Ingram Building, 2269 Middle
 Tennessee Blvd
 Murfreesboro, TN 37129



IRBN001 - EXPEDITED PROTOCOL APPROVAL NOTICE

Wednesday, August 23, 2017

Principal Investigator Faculty Advisor Co-Investigators Investigator Email(s) Department

Protocol Title Protocol ID

Investigator(s): Dare McNamara (PI) and Dr. Alex Jackson
 (FA) Investigator(s') Email(s): edm3v@mtmail.mtsu.edu;
alexander.jackson@mtsu.com
 Department: Psychology

Study Title: *The dark triad and advice taking*
 Protocol ID: **18-2013**

Dear Investigator(s),

The above identified research proposal has been reviewed by the MTSU Institutional Review Board (IRB) through the **EXPEDITED** mechanism under 45 CFR 46.110 and 21 CFR 56.110 within the category (7) *Research on individual or group characteristics or behavior*. A summary of the IRB action and other particulars in regard to this protocol application is tabulated as shown below:

IRB Action	APPROVED for one year from the date of this notification
Date of expiration	8/31/2018
Participant Size	300 (THREE HUNDRED)

Participant Pool	General adults (18 years or older) recruited through MTurk HIT queue
Exceptions	1. Permitted to conduct the study over the internet. 2. Permitted to compensate the participants. 3. Approved to request forced responses.
Restrictions	1. Mandatory informed consent confirmed through mouse click. 2. The participant exclusion criteria MUST be followed as provided in the protocol application. 3. Study link: https://mtsuppsychology.az1.qualtrics.com/jfe/form/SV_4I733VjJalC7ax7
Comments	NONE

This protocol can be continued for up to THREE years (**8/31/2020**) by obtaining a continuation approval prior to **8/31/2018**. Refer to the following schedule to plan your annual project reports and be aware that you may not receive a separate reminder to complete your continuing reviews. Failure in obtaining an approval for continuation will automatically result in cancellation of this protocol. Moreover, the completion of this study MUST be notified to the Office of Compliance by filing a final report in order to close-out the protocol.

IRBN001 Version 1.3 Revision Date 03.06.2016

Institutional Review Board Office of Compliance Middle Tennessee State University

Continuing Review Schedule:

Reporting Period	Requisition Deadline	IRB Comments
First year report	7/31/2018	TO BE COMPLETED
Second year report	7/31/2019	TO BE COMPLETED
Final report	7/31/2020	TO BE COMPLETED

Post-approval Protocol Amendments:

Date	Amendment(s)	IRB Comments
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NONE	NONE	NONE
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The investigator(s) indicated in this notification should read and abide by all of the post-approval conditions imposed with this approval. [Refer to the post-approval guidelines posted in the MTSU IRB's website](#). Any unanticipated harms to participants or adverse events must be reported to the Office of Compliance at (615) 494-8918 within 48 hours of the incident. Amendments to this protocol must be approved by the IRB. Inclusion of new researchers must also be approved by the Office of Compliance before they begin to work on the project.

All of the research-related records, which include signed consent forms, investigator information and other documents related to the study, must be retained by the PI or the faculty advisor (if the PI is a student) at the secure location mentioned in the protocol application. The data storage must be maintained for at least three (3) years after study completion. Subsequently, the researcher may destroy the data in a manner that maintains confidentiality and anonymity. IRB reserves the right to modify, change or cancel the terms of this letter without prior notice. Be advised that IRB also reserves the right to inspect or audit your records if needed.

Sincerely,

Institutional Review Board
Middle Tennessee State University

IRBN001 – Expedited Protocol Approval Notice