

CREATIVITY AND VERACITY

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ABSTRACT

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Lying is an everyday occurrence; individuals tell white lies, bluffs, lies of omission, malingering, and even use sarcastic lies (Vrij, 2008; Wright, Berry, & Bird, 2013). The purpose of this study was to investigate the relationship between creativity, personality, and lying. Individuals who are better divergent thinkers tend to be more creative liars, and creative individuals are more likely to be dishonest (Harris, Reiter-Palmon, & Kaufman, 2013). Creativity may be important in the generation of falsehoods. There are also some malevolent personality characteristics that are prevalent in creative individuals. Previous research has shown that there is a relationship between the dark triad personality traits and creativity (Jonason, Richardson, & Potter, 2015). Deception is also related to the personality traits of honesty and humility on the HEXACO-PI-R (Oh, Lee, Ashton, & de Vries, 2011). I was interested in the associations between the variables of creativity, deception, and the personality traits of the dark triad and honesty and honest-humility. I hypothesized that someone who is more creative would be more deceptive, lower in honesty and humility, and higher in Machiavellianism, narcissism, and psychopathy. I did not find a strong overall link between creativity, deception and personality measures, although there were a handful of significant relationships.

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CHAPTER I

INTRODUCTION

The psychological research literature provides ample evidence of many positive traits and characteristics associated with creativity. Creative people tend to be more autonomous, open to new experiences, self-confident, self-accepting, driven, and ambitious (Furnham, Zhang, & Chamorro-Premuzic, 2005). Creativity is associated with numerous positive personal attributes, such as humor, altruism, wellbeing, and a better mood (Liu & Ye, 2015). People who are creative also tend to score higher on standardized measures of intelligence (Batey, Furnham, & Safiullina, 2010). Other researchers have noted that people place a high value on creativity and prize individuals who possess creative qualities (King, Walker, & Broyles, 1996). When interpersonally assessing creative people, others tend to make positive attributions about them, such as higher levels of energy, greater intuition, and higher levels of self-confidence (King, Walker, & Broyles, 1996). While there has been a tremendous amount of research that explored the relationship between a person's creativity and their positive traits and characteristics, far less research has explored the relationship between creative abilities and more negative traits such as unethical behavioral patterns. What is the relationship between unethical behavior and dishonesty, negative personality characteristics, and having a creative mentality? Perhaps a more thorough examination of the relationship

between combinations of personality traits, dishonesty, and creativity can shed more light on the darker side of creative mental processes.

Creativity is defined as the generation of new, different, novel, or original ideas that are effective or useful (Liu & Ye, 2015). Originality is an essential element of creative thoughts, processes, and products; material, concepts, and individuals that lack originality are typically considered mundane and not creative (Runco & Jaeger, 2012). Creative cognition and creative production often rely on divergent thinking processes (Runco & Chand, 1995). Divergent thinking is a mental process or capacity in which a person can spontaneously generate numerous ideas or connections between ideas in a free-flowing manner; divergent thinking often leads to original ideas and facilitates flexible thinking (Runco & Acar, 2012). Flexible thinking is defined as the generation of diverse ideas from their core conceptual categories (Runco & Jaeger, 2012). Flexibility allows for a different viewpoint in altering something that is pre-existing. Individuals who are creative exhibit more cognitive flexibility that can allow for better problem-solving skills (Jonason, Strosser, Kroll, Duineveld, & Baruffi, 2015). Having creative capacities such as originality, divergent thought, and cognitive flexibility certainly allow people to generate a wide variety of unique and useful mental and behavioral outputs.

While there is considerable evidence for positive characteristics associated with creativity, there is also evidence of negative facets of creativity. Negative interpersonal traits are typically defined by a lack of warmth, compassion, and consideration for others (Lee & Dow, 2011). Creativity has been associated with the disagreeableness, facets of hostility, and arrogance (Silvia, Kaufman, Reiter-Palmon, & Wigert, 2011). Creativity,

specifically in the arts, has been associated with being low in conscientiousness, with a tendency to be irresponsible in cooperation with others (Goldberg, 1993; Lynam, Leukefeld, & Clayton, 2003; Wolfradt & Pretz, 2001). Creativity is often marked by a certain level of risk-taking and impulsivity (Friedman & Förster, 2001; George & Zhou, 2007). In social situations, this impulsivity and risk-taking may translate into unethical behavior. Creative individuals are more likely to cheat and be dishonest, and they are more likely to generate justifications and rationalize their unethical behavior (Gino & Ariely, 2012). One explanation for why creative people may decide to engage in dishonest behavior is because they feel less constrained by rules and regulations (Galang, Castelo, Santos III, Perlas, & Angeles, 2016). Researchers have also found that people who score higher in divergent thinking fluency were also more likely to lie (Walczyk, Runco, Tripp, & Smith, 2008). Together, these findings suggest that various forms of dishonesty can be associated with certain elements of creativity.

Lying is widely viewed as a threat to the moral fabric of society (Bok, 1999; DePaulo, Kashy, Kirkendol, Wyer, & Epstein, 1996). Lying is considered a selfish act in which people distort the truth to advance their own interests over the interests of others (DePaulo et al., 1996). There are many different types of lies, and they are all told with intention to mislead someone (DePaulo, & Kashy, 1998). On average, people tell a lie or two per day (DePaulo, et al.1996) and lie in 31% of their social interactions (DePaulo et al., 1996). While the average number of lies told per day is around two, it should be noted that the distribution is quite skewed, with the majority of people reporting telling no lies

or very few lies per day, and a few reporting a significant amount of lying per day (Serota, Levine, & Boster, 2010).

There are several ways of altering the truth. The first is through the manipulation of the amount of information that is offered (Masip, Garrido, & Herrero, 2004). An individual may only present partial information, so the receiver of the lie may not benefit from the omitted information. An example would be telling someone that they will be at the coffee shop, but withholding that they will be meeting a lover there. Secondly, they can fabricate or distort the information offered (Masip et al., 2004). An example might be saying that one stayed home from work due to illness when they were not ill at all. Next, lies can present information in an equivocal or ambiguous fashion (Masip et al., 2004). Equivocations capitalize on the ambiguity that stems from words and phrases having two different meanings. Another example would be someone saying that they went to Harvard, leaving the impression that they attended college at Harvard when actually they only *went* to Harvard for an afternoon tour. Next, people can present information that is irrelevant to the preceding discourse (Masip et al., 2004). An illustration of this would be a person avoiding the question of what they had for lunch while presenting information that they have been eating healthy all week long. These varieties of lies represent a handful of the strategies people use to deceive each other. Liars lie more about themselves than anything else; 80% of the lies told by participants in one study were about themselves (DePaulo et al., 1996). Such self-serving lies can be said to make themselves appear kinder, or smarter or more honest than they believe themselves to be

and to protect themselves from embarrassment or disapproval or conflict (DePaulo et al., 1996).

DePaulo et al. described lies as fitting into one of five categories: People lie about (1) their feelings and opinions; (2) their actions, plans, and whereabouts; (3) their knowledge, achievements, and failings; (4) explanations for their behaviors; and (5) facts and personal possessions (DePaulo, Ansfield, Kirkendol, & Boden, 2004). Though people tell an average of two lies per day, the more lies they report, the more likely they are to engage in higher levels of other deceptive behaviors (Levine, Clare, Green, Serota, & Park, 2014). Dishonest people are often confronted spontaneously with situations in which they choose to deceive, and they must then generate a strategic lie to conceal the truth (DePaulo et al., 1996). In many cases, a liar must possess quick thinking in order to deceive someone. Lying can be viewed as a form of social problem-solving. Depending on the uniqueness of the circumstances, a liar may require divergent thinking abilities to be effective in misleading the target, which generally includes not damaging the liar–target relationship while taking account of nuances of a social situation (DePaulo et al., 2004; DePaulo & Kashy, 1998).

It seems clear from previous research that there is an association between dishonesty and creative behavior (Gino & Ariely, 2012). Malevolent creativity is defined as the creative potential to cause harm; examples can include unethical behavior such as lying and opportunism (Liu & Ye, 2015). Harris (2013) opined that malevolent creativity has led individuals to be more creative liars and more likely to be dishonest. Walczyk, Runco, Tripp, and Smith (2008) have found that creative individuals were likely to

generate more novel and a greater number of lies when lying was a form of social problem-solving. Creative individuals can use their cognitive flexibility to create deceptive ideas to meet their personal objectives (Jonason et al., 2015a). People who are more creative can tell more convincing lies and engage in more creative criminal behavior (Jonason et al., 2015a). A mindset that is geared toward dishonesty such as rule-breaking can encourage an individual to think creatively in order to achieve divergent results that can go beyond the social convention; thus, not only can creativity be a causal factor of lying, it can also be a product of lying (Galang, et al. 2016). Research has also demonstrated that the ability to rapidly construct divergent ideas, a form of creativity, was associated with lower levels of overall interpersonal integrity (Beaussart, Andrews, & Kaufman, 2013). This is interesting because it suggests a link between creative mental capacities and the more general pattern of unpleasant manipulative personality traits and interpersonal style often referred to as the Dark Triad.

The Dark Triad characteristics include Machiavellianism, narcissism, and psychopathy. The Dark Triad consists of undesirable traits that share a core of callous social manipulation (Furnham, Richards, & Paulhus, 2013). Research has explored the Dark Triad in the areas of occupation, education, mating, interpersonal, and antisocial behavior (Furnham et al., 2013). These personality characteristics are associated with malevolent behaviors that violate social norms, including lying (Giammarco, Atkinson, Baughman, Veselka, & Vernon, 2013). Previous research has shown that individuals with higher composite Dark Triad scores were more likely to engage in creativity when given the option, and more likely to choose a harmful, creative option than those with a lower

Dark Triad scores (Kapoor, 2015). In another study, researchers found that creativity was a predictor of engaging in malevolent creative behavior (Jonason, et al., 2015b).

Creativity might facilitate the deceptive approach to social manipulation that characterizes the Dark Triad traits (Jonason, Richardson, & Potter, 2015).

Machiavellianism is characterized by manipulation, deceitful tendencies, and social charm (Baughman, Jonason, Lyons, & Vernon, 2014; Giammarco et al., 2013). Machiavellianism is a predictor of telling lies for self-gain, but not for telling altruistic lies, lies to avoid conflict, or lies for social acceptance (Giammarco et al., 2013). There is also evidence that Machiavellianism is linked to telling more white lies (Jonason, Lyons, Baughman, & Vernon, 2014). The characteristic of social charm among Machiavellian people could be the reason they tell more white lies, in that they use charming white lies as tools to manipulate others. While Machiavellianism is clearly associated with lying, there is no substantial evidence that it is associated with creativity; however, some claim that all the Dark Triad are related to creativity (Jonason, Richardson, & Potter, 2015; Kapoor & Khan, 2017).

Narcissists are aggrandized and have an overly enhanced sense of self while devaluing others (Rauthmann & Kolar, 2012). This is often accompanied with extreme vanity, self-absorption, arrogance, and entitlement (Rauthmann & Kolar, 2012).

Narcissism is positively correlated with lying for the primary purpose of self-enhancement (Giammarco et al., 2013). Narcissists are often impulsive, and this may influence the types of lies they tell. Research from Jonason et al. (2014) shows that narcissists tell lies in association with intersexual deception for dominance and

appearance. While some researchers suggest that narcissists only appear creative on self-report measures (Furnham, Hughes, & Marshall, 2013), others have found that they are also more creative on performance tasks (Martinsen, Arnulf, Furnham, & Lang-Ree, 2019).

Psychopathy is the third component of the Dark Triad. Psychopaths exhibit high thrill-seeking, impulsivity, low empathy, irresponsibility, interpersonal manipulation, and antisocial behavior (Baughman et al., 2014; Rauthmann & Kolar, 2012). Psychopathy is associated with a lack of sincerity and fairness (Furnham, Richards, & Paulhus, 2013). Furnham, Richards, and Paulhus (2013) claim that psychopaths and Machiavellians find ways to claim credit for things they have not earned. Giammarco et al. (2013), found that psychopathic offenders are actually less successful at deceiving others in comparison to non-psychopathic individuals. But when psychopaths do lie, it is for claiming dominance, sincerity, and sexual intentions (Jonason et al., 2014). Psychopaths have shown a preference for engaging in negative creativity (Kapoor, 2015), and in other research, psychopathy was associated with harm-based creativity (Jonason, Abboud, Tomé, Dummett, & Hazer, 2017).

Another pair of personality traits related to deception are honesty and humility. Honesty and humility are components of the HEXACO personality structure that consists of six dimensions: Honesty-Humility, Emotionality, Extraversion, Agreeableness, Conscientiousness, and Openness to Experience (Ashton & Lee, 2014). Honesty and humility are defined by sincerity, fairness, greed-avoidance, and modesty (Silvia, Kaufman, Reiter-Palmon, & Wigert, 2011). Low honesty and humility have been associated with

antisocial and counterproductive behaviors, as well as a propensity toward opportunism, greed, deviance, and lying (De Vries, de Vries, & Feij, 2009; Oh et al., 2011). There is a negative correlation between measures of lying and honesty, as seen from the HEXACO (Lee & Ashton, 2004). This research has also shown that liars are intentionally deceitful and care more about what others think of them (Feldman, 2018). This type of profiling fits the narrative that the majority of their lies are self-centered as stated earlier. The types of lies that are told captures the idea that dishonesty may often be related a need for social desirability. There have been reports that low scores of honesty and humility on the HEXACO model are correlated with manipulateness and egotism (Lee, Ogunfowora, & Ashton, 2005). Narcissism, Machiavellianism, and psychopathy are negatively associated with honesty and humility (Ashton & Lee, 2007; Bresin & Gordon, 2011; Weller & Tikir, 2011). Individuals who report low on honesty and humility tend not to feel bound by traditional rules and restrictions, and they are more inclined to violate societal conventions, laws, and norms (Weller & Tikir, 2011). Silvia et al. (2011), found that low Honesty-Humility on the HEXACO model is correlated with creative achievement. It could be that a creative mindset can help a person fabricate plausible lies (Galang, et al. 2016).

My objective was to extend the research literature that pertains to creativity and malevolency. This study was important because relatively little research has focused on the more sinister aspects of creativity. Specifically, I added to the body of literature examining whether creativity is important in understanding deception and the negative malevolent personalities. In my study, I explored whether there is a clear relationship

between creativity, deception, and personality characteristics. My hypotheses were as follows:

Hypothesis 1: Creativity will be positively correlated with self-reported deception, acceptance of deception, and actual deceptive behavior.

Hypothesis 2: Creativity will be positively correlated with Dark Triad personality traits and negatively correlate with honesty and humility.

Hypothesis 3: Self-reported deception, acceptance of deception, and actual deceptive behavior will be positively correlated with dark triad personality traits and negatively correlate with honesty and humility.

CHAPTER II

METHOD

Participants

I recruited 262 students from Texas Woman's University for this study.

Undergraduate students 18 and older, signed up to participate in this study in exchange for credit in their psychology courses. No demographic information was included in the analysis; this crucial aspect of the study was missed during the development of the study.

I have learned that it is important to gather demographic data to better understand the research questions that are asked and to whom they are asked. This mistake on my part has dramatically limited my ability to explore how participants' sex and age moderated any relationships between variables in my study. In the future, I will certainly be more cautious in including a full set of demographic measures. The participants enrolled in the study and scheduled a time to participate through the SONA system.

Materials

Deception

The Matrix Task is a self-scored mathematical task. The matrix task consists of 20 matrices, each based on a set of 12 three-digit numbers. Participants must find the two digits within each matrix that sum up to 10 (see Appendix A.1). This mathematical task is challenging. Participants are told before they begin the task that they are to write their responses on an answer sheet and pass their matrix task sheet through a shredder when they

are done. However, unbeknownst to the participants, the shredder is modified so that it does not actually tear the sheet, but only passes it through and stores the worksheet inside. The response matrix worksheets can later be retrieved in order to measure whether the participants lied about how many matrix problems they solved correctly. The matrix task has been used to measure deceptive behavior in previous studies (Mead, Baumeister, Gino, Schweitzer, & Ariely, 2009). As stated by Mazar & Ariely (2015) This test has found consistent findings that “On average, participants cheat by 2 to 3 matrixes” (p.1). The shredder design has shown that more participants will lie and believe that their response are being shredded in comparison to a control group that does not have a shredder (Gino, Ayal, & Ariely, 2013). “We find that almost everyone cheats but only by a limited amount” (Mazar & Ariely, 2015, p.1). Several versions of this experiment, with thousands of participants in various countries, consistently find that, despite random assignment participants “solve” more matrixes, evidence for dishonesty (Mazar & Ariely, 2015).

The Revised Lie Acceptability Scale (RLAS) is an 11-item scale developed by Oliveira and Levine (2008; see Appendix A.2). This scale was developed to examine a person’s willingness to lie. Responses are indicated on a Likert-scale of 1 (*strongly agree*) to 7 (*strongly disagree*). The items are scored so that high scores reflect high levels of lie acceptability (Oliveira & Levine, 2008). Some questions are reverse coded. In this study, the RLAS scale had a Cronbach’s alpha of .79. This has a good internal consistency.

The 24 hour lie scale is an open-ended question that asks participants to report how many times they have told a lie in the past 24 hours (Serota, Levine, & Boster, 2010). The question is:

Think about where you were and what you were doing during the past 24 hours, from this time yesterday until right now. Listed below are the kinds of people you might have lied to and how you might have talked to them, either face-to-face or some other way, such as in writing or by phone or over the Internet. In each of the boxes below, please write in the number of times you have lied in this type of situation. If you have not told any lies of a particular type, write in ‘0.’ In the past 24 hours, how many times have you lied? (Serota, Levine, & Boster, 2010, p.8)

In previous studies, the majority of people who were asked how many lies they told in the past 24 hours reported telling no lies, while only 40.1% reported telling lies in the past 24 hours (Serota, Levine, & Boster, 2010).

The LiES scale is a 14 -item scale developed by Hart, Jones, Terrizzi and Curtis (in press; see Appendix A.3). The scale was developed to examine a person’s tendency to lie in everyday situations. Responses are measured on a Likert-scale of 1 (*strongly disagree*) to 7 (*strongly agree*). In this study, the LiES scale had a Cronbach’s alpha of .81, and has been concurrently validated with several other deception measures. This has a good internal consistency.

Creativity

The Sternberg Triarchic Abilities Test (STAT) measures intelligence, analytical, creative, and practical abilities (Sternberg, 2006). I used 20 questions, from the STAT that measure creativity. These questions are multiple-choice (see Appendix A.4).

Participants completed the test in paper and pencil format. In this study, the STAT had a Cronbach's alpha of .71. This has an acceptable internal consistency.

The Divergent Thinking Fluency test was developed from the Guilford's Alternate Uses Test (Lee, Huggins, & Therriault, 2014). In the divergent thinking fluency test, participants have to generate as many possible uses as they can for a brick, wooden pencil, and a wire coat hanger. They are allotted three minutes per prompt item. Divergent thinking is assessed by counting the number of different uses generated for each item. In this study, the Divergent Thinking Fluency test had a Cronbach's alpha of .84. This has an acceptable internal consistency.

The Remote Association Task (RAT) was developed to assess the ability to identify associations between words (Lee, Huggins, & Therriault, 2014). The participants were given 30 RAT items to solve in eight minutes. An example would be rat, blue, cottage, and the answer would be cheese (Mednick, 1962). The questions were presented in an increasing order of difficulty (see Appendix A.5). In this study, the RAT had a Cronbach's alpha of .89. This has a good internal consistency.

Personality

The SD3 is a 27-item questionnaire that measures the Dark Triad personality traits (Paulhus & Williams, 2002). This instrument is a self-report measure of Machiavellianism, narcissism, and psychopathy. The subsection of Machiavellianism includes items that are related to cynicism and manipulation tactics. The psychopathy subscale includes items that are related to impulsivity, callous manipulation, and antisocial behavior. The narcissism subscale includes items related to selfishness and a

sense of grandiosity (see Appendix A.6). In this study, the SD3 scale had a Cronbach's alpha of: Machiavellianism =.77, narcissism =.69, and psychopathy =.69. These have an acceptable internal consistency.

The Dirty Dozen is a 12-item scale to measure the Dark Triad personality traits (Jonason, Kaufman, Webster, & Geher, 2013; see Appendix A.7). The Dirty Dozen has four items per subscale for psychopathy, narcissism, and Machiavellianism. All the items are scored on a Likert scale of 1 (*strongly disagree*) to 7 (*strongly agree*). In this study, the Dirty Dozen scale had a Cronbach's alpha of: Machiavellianism =.69, psychopathy = .71, and narcissism = .82. These have a good internal consistency.

To assess participants' honesty and humility, I used the honesty and humility subscale of the HEXACO-PI-R (see Appendix A.8; Ashton & Lee, 2009). All the items are answered on a Likert scale of 1 (*strongly disagree*) to 5 (*strongly agree*). In this study, the HEXACO scale had a Cronbach's alpha of .64.

Procedure

When the participants arrived at the designated testing room, they were given an informed consent sheet to read and sign. Each participant was given a badge with an identification number on it; no names were used during the course of the study. All materials were administered in paper and pencil format. The participants first completed the Matrix Task. The participants were told before they began the task that they were to write their responses on an answer sheet and pass their matrix task sheet through a shredder when they were done. Participants had five minutes to attempt to complete all the matrices. Once they had completed the task, they wrote down how many matrices they

solved on an answer page and passed their matrix worksheet through a faux shredder. The faux shredder did not actually tear the sheet, but only passed it through and stored the worksheet inside. It gave me the opportunity to view the actual results of the matrices completed by the participants while convincing the participants that the researchers could not verify the number of matrices they solved. The matrix task has been used to measure deceptive behavior in previous studies (Mead et al., 2009). Once the participants completed the matrix task, they completed the SD3 (Paulhus & Williams, 2002), and also the Dirty Dozen (Jonason, & et al. 2013). The next measurement the participants took was the Honesty/Humility HEXACO-PI-R (Ashton & Lee, 2009). It was followed by the STAT, the RAT, and the Divergent Thinking Fluency test. Lastly, the participants completed three self-report lie scales: the 24 hour lie scale, the LiES scale, and the revised lie acceptability scale. Before they left, participants were debriefed about the purpose of the study and were invited to ask any questions they had about the study. Once the participants completed their participation and left the testing room, I retrieved the matrix sheet from the faux paper shredder.

Statistical Analysis

To test each hypothesis, a multiple regression was conducted. All variables were entered in the forced entry method. I chose a forced entry to test each hypothesis because I wanted to examine if several independent variables predicted my dependent variables. To assess multicollinearity, I used variance inflation factor (VIF).

CHAPTER III

RESULTS

Separate correlation analyses were performed for the deception, the creativity, and the personality measures. In Table One (see Appendix B.1), one can view the means and standard deviations for each measure that was used. Correlation matrices are presented in Appendices B.2, B.3, and B.4. For each regression analysis used to test the three hypotheses, the VIF values indicated that there was no substantial multicollinearity. All VIF values are presented in Appendix B.5.

Hypothesis One

To test the hypothesis that creativity was positively correlated with self-reported deception, acceptance of deception, and actual deception, I conducted four multiple regressions. All variables were entered in the forced entry method. In all four analyses, the creativity measures (STAT, RAT, Divergent Thinking task) were the independent variables.

In the first analysis, the LiES scale was the dependent variable. The three creativity measures were not significant predictors for the LiES scale ($R^2 = .016$, $F(3, 252) = 1.38$, $p = .24$). There was no multicollinearity between these variables.

In the second analysis, the RLAS was the dependent variable. The three creativity measures were not significant predictors for the Revised Lie scale ($R^2 = .006$, $F(3, 256) = .54$, $p = .65$).

In the third analysis, the 24 hour lie scale was the dependent variable. The Sternberg test and the Divergent Fluency Thinking test were not significant predictors of the 24 hour lie scale ($R^2 = .022$, $F(3, 225) = 1.67$, $p = .17$).

In the fourth analysis, the Matrix Task was the dependent variable. The three creativity measures were not significant predictors for the Matrix Task ($R^2 = .009$, $F(3, 251) = .76$, $p = .14$). To assess multicollinearity, I used variance inflation factor, it is presented in Appendix B.5.

Hypothesis Two

To test the hypothesis that creativity was positively correlated with Dark Triad personality traits and negatively correlated with honesty and humility, three multiple regressions were conducted. All variables were entered in the forced entry method. In all three analyses, the personality measures (SD3: Machiavellianism, Psychopathy, and Narcissism, Dark Triad: Machiavellianism, Psychopathy, and Narcissism, HEXACO: Honesty and Humility) were the independent variables.

In the first analysis, the STAT was the dependent variable. The overall regression was significant ($R^2 = .156$, $F(7, 83) = 2.197$ $p = .043$). Dirty Dozen Narcissism was a significant predictor ($\beta = .252$, $p < .03$). SD3 Machiavellianism was a significant predictor ($\beta = -.259$, $p < .04$).

In the second analysis, the RAT was the dependent variable. None of the measures were significant predictors for the RAT ($R^2 = .113$, $F(7, 83) = 1.51$, $p = .17$).

In the third analysis, the Divergent Thinking Fluency Test was the dependent variable. None of the measures were significant predictors for the Divergent Thinking Fluency Test ($R^2 = .12$, $F(7, 83) = 1.62$, $p = .14$).

Hypothesis Three

To test the hypothesis that self-reported deception, acceptance of deception, and actual deception would be positively correlated with Dark Triad personality traits and negatively correlate with honesty and humility, four multiple regressions were conducted. All variables were entered in the forced entry method. In all four analyses, the personality measures (SD3: Machiavellianism, Psychopathy, and Narcissism, Dark Triad: Machiavellianism, Psychopathy, and Narcissism, HEXACO: Honesty and Humility) were the independent variables.

In the first analysis, the LiES scale was the dependent variable. The overall regression was significant, ($R^2 = .396$, $F(7, 82) = 7.67$, $p = .01$). SD3 Narcissism was a significant predictor for the LiES scale ($\beta = -.256$, $p < .01$). SD3 Machiavellianism was a significant predictor for the LiES scale ($\beta = .327$, $p < .01$). Dirty Dozen Machiavellianism was a significant predictor for the LiES scale ($\beta = .379$, $p < .01$).

In the second analysis, the RLAS was the dependent variable. The overall regression was significant ($R^2 = .226$, $F(7, 82) = 3.42$, $p = .03$). HEXACO honesty-humility was a significant predictor ($\beta = .296$, $p < .02$).

In the third analysis, the 24 hour lie scale was the dependent variable. The personality measures were not significant predictors for the 24 hour lie scale ($R^2 = .073$, $F(7, 69) = .774$, $p = .61$).

In the fourth analysis, the Matrix Task was the dependent variable. The personality measures were not significant predictors for the Matrix Task ($R^2 = .067$, $F(7, 79) = .807$, $p = .12$).

CHAPTER IV

DISCUSSION

The goal of this study was to explore the relationship between creativity, deception, and personality characteristics. The results of this study suggest that very few significant relationships exist between these variables. Hypothesis One predicted that creativity would be positively correlated with self-reported deception, acceptance of deception, and actual deceptive behavior. The results showed that the STAT and the Divergent Thinking Fluency Test were not significant predictors of any of the deception measures. The RAT was a significant predictor for the 24 hours lie scale. Perhaps the RAT was the sole creativity predictor because of the unique way in which it measures creativity. For instance, performance on the RAT, unlike the other two creativity measures, is significantly correlated with verbal fluency and mathematical fluency (Ochse, & Van Lill, 1990). It could be that such fluency is a construct that drives the capacity to deceive. Perhaps the vastly different cognitive processes associated with the various creativity measures can explain why one measure correlated with deception while others did not.

The second hypothesis predicted creativity would be positively correlated with the Dark Triad personality traits and negatively correlate with honesty and humility. The results showed that STAT, Divergent Thinking Fluency Test, and the RAT were not significant predictors for Machiavellianism, psychopathy or honesty and humility. The

STAT was a significant predictor of narcissism. The literature supports that finding, in that narcissistic individuals are more creative on performance tasks (Martinsen, et al., 2019). Also, there is an association between creativity and arrogance, a characteristic that is seen in narcissism (Silvia, et al., 2011). The lack of a relationship between Machiavellianism and creativity was also found in Jonason et al. (2015a). Jonason et al. (2015a) also claimed there was no strong research that Machiavellianism and creativity are associated with one another. While others have found a relationship between psychopathy with creativity (Kapoor, 2015), I did not find such a relationship; it could be that psychopathy is mostly seen in male offenders (Strachan, 1993), whereas most of our participants were women. The mean score in males in a study conducted by Jones and Paulhus (2014) was 2.26, while our study yielded a mean score in psychopathy of 1.12.

The third hypothesis predicted deception, acceptance of deception, and actual deceptive behavior would be positively correlated with Dark Triad personality traits and negatively correlated with honesty and humility. Psychopathy and honesty and humility were not significant predictors of deception. However, Machiavellianism and narcissism were significant predictors of the LiES scale. These results support the hypothesis that malevolent personality characteristics are related to deception. Machiavellians tend to be manipulators and have deceitful tendencies (Baughman, et al., 2014; Giammarco et al., 2013). The literature supports that Machiavellians tell lies for self-gain, and are also linked with telling white lies (Giammarco et al., 2013; Jonason, et al., 2014). As stated previously, the psychopathy mean score for our study was low in comparison to other

studies that included more men. It may be that a lower level of psychopathy in our sample from a predominantly female college led to a floor effect, limiting our ability to detect any relationship between psychopathy and deception. As for honesty and humility, only 99 participants completed the survey correctly. This smaller sample may have limited our ability to detect a small relationship between deception and honesty and humility. In past research there has been a relationship between the HEXACO measure and deception (Oh, Lee, Ashton, & de Vries, 2011), but I did not see this in my findings.

As stated earlier, there are various reasons for lying (e.g., malevolent and benevolent), and there are there are different ways a person can present a lie. There is, through the manipulation of the amount of information that is offered, distortion of information, presenting statements in an ambiguous fashion, and presenting information that is irrelevant to the preceding discourse. It seems likely that some degree of creative problem solving is important for each type of lie. After all, the concoction of new narratives is, at its core, a creative endeavor. Having more creative potential seems likely to play a central role in the generation of all novel lies. Though each lie is used in a different context and for a different reason, they can all be viewed as creative solutions to dilemmas.

A limitation for my study was the limited amount of participants who completed the HEXACO survey. I initially included contradicting instructions on how to answer the HEXACO survey. When I noticed the problem, more than 160 participants had already completed the survey. I was able to fix the problem and properly insert the instructions, and I had roughly 100 students successfully complete the HEXACO survey. This issue

limited my data and possibly skewed my results. If I had properly inserted the directions, I would have had 262 participants complete the survey, and would have had a greater amount of participant responses to analyze. A limitation of the HEXACO model was that the Cronbach alpha was $=.64$. The internal consistency for this measure would be considered questionable. From previous research conducted by Jonason & McCain (2012), they had a Cronbach alpha of $=.71$, which is considered acceptable. Our cohort had the same population of college students, and had over 200 students who participated in the study. The only difference between my study and Jonason and McCain's study, was that mine was completed in person while their study was completed online. There is not much of a difference in the reliability. My lower Cronbach alpha could be due to student's motivation to complete the survey and/or an administration error.

Another limitation of this study is that I did not provide any motivation to lie for the matrix task measure. There are two kinds of motivation, intrinsic and extrinsic. Several studies on deception have included an extrinsic reward, and that motivated the participants to deceive to receive a reward (Masip et al., 2004). It is possible that since I did not offer a reward for completing the matrix task, the participants may not have been extrinsically motivated to deceive. In a study by Bond, Howard, Hutchison, and Masip (2013), the researchers found that incentive states almost perfectly predicted lying. My results are congruent with this notion, as I did not incentivize lying, and not many participants lied on the Matrix task. For future studies, I can add in an extrinsic motivation to lie such as monetary compensation to see if there are any differences in deceptive behavior. I believe that the Matrix task was a valid measure of deception. At

the end of the study, I asked participants to write their assumptions of what the study was about. They all wrote a short one to two sentences as to what the study was about. None of the participants identified the purpose of the study, and no one mentioned any suspicion that the Matrix task was a deception measure, nor did they mention any suspicion that the shredder was not actually destroying their documents. It is possible they just thought the Matrix task was part of the creative part of the study, as the Matrix task immediately followed several creativity measures.

In previous studies, the Matrix task was found to be a valid measure, as participants did not identify the actual purpose of the Matrix shredder task or seem to be aware that the shredder was not actually destroying the documents (Mazar, Amir, & Ariely, 2008). Mazar, et al. (2008) performed six experiments, which showed that when participants were given the opportunity to cheat, they were much more likely to do so when the faux shredder was used. The authors argued that those results provided compelling evidence that the shredder task is a valid measure of proclivities to deceive. Mazar and Ariely (2015) wrote that, they had used several version of the shredder task using thousands of participants across numerous countries. They reported that in each of those cases, participants who believed they were going to shred their documents consistently reported solving two to three more matrices than participants who believed they would not be shredding their documents. The researchers also found compelling evidence that participants do not know the actual purpose of the matrix shredder and are not aware that their documents were not actually being shredded (Mazar, et al., 2008).

Another limitation of the study was the gender distribution of my sample. The student population of Texas Woman's University is predominantly female, while males only make up 12% of the population. Having the majority of my participants be female rather than male may have resulted in a sampling error that skewed my results. Even though I did not collect demographic data, from being present at each study session, I was able to verify that the vast majority of the participants were females. However, the absence of valid demographic data is a weakness. Failing to collect demographic data such as gender, prevented me from assessing the role of gender in my results. In previous research, demographic data has been thoroughly analyzed to examine gender differences between negative personalities. In failing to do so myself, I cannot correctly identify the impact gender had in my study. If I had retrieved such information from my participants, I would have been able to compare gender groups within each hypothesis. Regardless of the relative lack of males that participated in my study, collecting gender information, would have allowed me to identify more specifically how gender plays a role with deception, creativity, and personality characteristics. For instance, there is past research that shows a significant relationship between sex and the Dark Triad traits, with males scoring higher on those traits (Jonason et al., 2017). Having a more representative distribution between genders would allow for my data to reflect the overall population rather than a selected population.

In future studies, in addition to looking into personality characteristics, another area that should be looked into is emotional intelligence. It would be interesting to know how emotional intelligence plays a role in creativity, deception, and personality

characteristics. Emotional intelligence is defined as “one’s awareness of one’s feelings and the feelings of others and the capacity to utilize this in directing one’s behaviors” (Olatoye, Akintunde, & Yakasi, 2010, p. 766). Perhaps the ability to have a better emotional understanding of others can increase one’s ability to be a more successful interpersonal manipulator.

In future studies, I would also like to expand my current study to involve competitiveness. Currently, my study looks into deception, creativity, and personality characteristics, but there were no strong incentives to deceive. Competition between people for resources or other opportunities for gain often drive deceptive behavior. It seems that competition can motivate people to lie. For instance, competition over monetary benefits could drive some participants to lie and cheat in order to receive a monetary benefit. Competition for limited resources might actually impel people to seek out creative ways to best their opponents. While I did not find a substantial link between creativity and deception in my current study, a more competitive context could reveal a link between those variables.

It is a novel idea because in my study, students had to work on creative measures, where as in other studies, the participants simply self-reported how creative they believed they were. An example of an article where participants had to answer a survey to evaluate their own creative abilities is Carroll, Latulipe, Fung, & Terry’s (2009). Having participants complete a survey of their creative abilities can create a bias by the individual and it does not actually evaluate if they are creative. With my project, participants had three different creativity tasks to complete, ranging from multiple choice

to open ended questions. This gave me the ability to evaluate each participant's actual creative performance, which is a unique methodology for this type of study. Even though this study found very few associations between creativity and deception, with a few of the findings, it did demonstrate how creativity is associated with deception, and that personality characteristics can be an additional factor in predicting who is more likely to lie.

In conclusion, this study has provided insights into the relationship between creativity, deception, and personality traits. This study has added to the body of literature in how deception is intertwined with creativity. Along with the previous research, it is important to gather more data about malevolent creativity, because as stated, there is more literature exploring the positive aspects of creativity, while there is a lack of attention given to the negative aspects of creativity. Having more literature about deception can help provide a better understanding of how and why deceptive behavior emerges. Past research and, to a certain extent, this study suggests a relationship between creativity and some forms of deception. That knowledge can be applied to better understand which individuals seek to behave with deception and dishonesty. With proper guidance, we can redirect individuals to control their urges to deceive, and instead lead them to fulfill their creative aspects for the benefit of them and others. This could lead to them achieving more in their lives. Even though this study found very few associations between creativity, with a few of the findings, it did demonstrate how creativity plays a role in deception, and that personality characteristics can be additional factors in predicting who is more likely to lie.

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APPENDIX A
MEASURES

A.1. Matrix Task

1.69	1.82	2.91
4.67	2.81	3.15
5.82	5.06	4.28
6.36	7.19	4.57

1.17	4.83	7.76
5.66	1.86	5.17
6.83	5.95	4.25
7.01	6.28	3.82

0.49	0.74	1.13
3.72	2.66	1.22
3.75	5.22	5.67
8.87	8.23	7.71

0.47	4.61	2.57
3.17	3.82	4.38
4.94	5.39	5.98
2.15	4.86	7.54

2.92	4.98	4.34
1.39	0.72	5.53
8.61	3.57	3.36
6.8	0.53	7.58

0.81	1.31	2.09
4.55	3.75	3.12
5.62	9.41	6.88
7.02	8.48	8.51

0.17	3.46	2.44
6.02	2.46	2.63
6.05	6.21	6.61
8.22	8.19	7.54

4.74	4.78	0.83
1.61	5.97	4.09
5.96	3.29	9.09
0.87	9.13	2.71

6.21	2.47	9.57
2.68	9.52	4.52
8.72	7.69	1.47
6.41	4.44	7.32

3.08	9.42	5.87
3.94	5.41	3.42
4.02	5.06	4.12
4.13	4.65	2.86

3.15	0.95	1.31
4.98	2.9	2.88
6.66	6.73	7.67
9.75	6.85	8.17

0.63	0.65	1.02
2.64	2.34	2.12
2.89	5.98	8.89
9.49	9.37	9.33

2.22	4.51	7.13
9.33	9.77	5.86
7.04	4.14	5.22
2.28	1.72	8.16

0.74	4.55	3.19
8.51	7.91	8.68
5.62	0.81	2.11
3.75	3.72	2.09

5.97	9.62	9.41
3.61	7.39	7.01
5.49	0.59	2.62
7.51	5.71	0.49

4.73	2.12	8.99
0.63	8.89	9.33
1.02	2.34	4.98
1.11	0.65	2.91

0.12	0.71	0.74
4.27	3.07	2.27
5.09	5.73	5.82
9.27	7.03	6.79

0.74	1.93	2.76
7.24	5.03	3.14
7.71	6.38	3.19
8.28	9.18	9.48

0.14	2.67	2.22
5.96	5.58	5.22
7.04	7.78	9.33
9.77	9.5	8.52

4.16	4.51	1.66
8.29	8.05	9.03
4.73	5.84	9.86
5.21	3.94	7.18

A.2. The Revised Lie Acceptability Scale

1. Never tell anyone the real reason you do anything unless it is useful to do so.
2. Lying is immoral.
3. It is ok to lie in order to achieve one's goals.
4. What people don't know can't hurt them.
5. The best way to handle people is to tell them what they want to hear.
6. There is no excuse for lying to someone else.
7. Honest is always the best policy.
8. It is often better to lie than to hurt someone's feelings.
9. Lying is just wrong.
10. Lying is no big deal.
11. There is nothing wrong with bending the truth now and then.

A.3 LiES

1. I lie in order to escape conflicts or disagreements with other people.
2. I lie to hide the bad things I've done.
3. I tell lies so I will not have confrontations with people.
4. I lie in order to hide shameful things about myself.
5. I lie to stay out of arguments with people.
6. I tell lies in order to spare another's feelings.
7. I lie in order to be friendly and cordial with others.
8. I lie in order to punish people.
9. I lie in order to take people down.
10. I lie for revenge.
11. I use lies to attack people I don't like.
12. I tell lies in order to hurt, annoy, or upset others.
13. I lie because it is exciting.
14. I lie to people because it is amusing.

A.4. STAT

DIRECTIONS

In each question below, there are three underlined words. The first two underlined words go together in a certain way. Choose the word that goes with the third underlined word in the same way that the first two go together.

Each question has a “Pretend” statement. You must suppose that this statement is true. Sometimes the statement will be important in helping you choose the correct answer and sometimes it will not. Think of the statement, and then decide which word goes with the third underlined word in the same way that the first two underlined words go together.

SAMPLE A

Money falls off trees.
snow is to shovel as dollar is to

- A. bill
- B. rake**
- C. bank
- D. green

SAMPLE B

Birds live in caves.
fish is to scale as bird is to

- A. tree
- B. egg
- C. feather**
- D. nest

1. Birds sing in choirs. Actor is to monologue as canary is to

- A. robin
- B. soprano
- C. solo
- D. music

2. Prophets procrastinate. Historian is to past as prophet is to

- A. present
- B. memory
- C. future
- D. delay

3. Colors are audible. Flavor is to tongue as shade is to

- A. ear
- B. light
- C. sound
- D. hue

4. The sea cries. Water is to sand as ocean is to

- A. salt
- B. tear
- C. beach
- D. sob

5. Roses grow in snow. Oak is to tree as rose is to

- A. flower
- B. winter
- C. cold
- D. daffodil

6. Lions live in the arctic. Penguin is to lion as whale is to

- A. polar bear
- B. ice berg
- C. catfish
- D. mammal

7. Horses fly. Fish is to stream as horse is to

- A. soar
- B. sky
- C. wing
- D. gallop

8. Telephones are made from yarn. Pen is to write as telephone is to

- A. call
- B. sew
- C. sign
- D. cot

DIRECTIONS

In each problem below, you will employ unusual mathematical operations in order to reach the solution. There are three unusual operations: graf, flix, and trup. First, read how the operations are defined. Then, decide what is the correct answer to the question.

There is a new mathematical operation called graf. It is defined as follows:

$$\begin{array}{l} \text{but} \quad x \text{ graf } y = x + y, \text{ if } x < y \\ \quad \quad x \text{ graf } y = x - y, \text{ if otherwise} \end{array}$$

There is a new mathematical operation called flix. It is defined as follows:

$$\begin{array}{l} \text{but} \quad a \text{ flix } b = a + b, \text{ if } a > b \\ \quad \quad a \text{ flix } b = a \times b, \text{ if } a < b \\ \text{but} \quad a \text{ flix } b = a \div b, \text{ if } a = b \end{array}$$

There is a new mathematical operation called trup. It is defined as follows:

$$\begin{array}{l} \text{but} \quad t \text{ trup } v = \sqrt[4]{v}, \text{ if } t > v + 1 \\ \quad \quad t \text{ trup } v = t \times v, \text{ if } t < v - 1 \\ \text{and} \quad t \text{ trup } v = \sqrt[4]{t}, \text{ if otherwise} \end{array}$$

SAMPLE A

How much is 4 graf 7?

- A. -3 B. 3 C. **11** D. -11

SAMPLE B

How much is 4 flix 7?

- A. **28** B. 11 C. 3 D. -11

1. How much is 13 graf 5?

A. 5 B. 18 C. 13 D. 8

2. How much is 3 flix 7 ½?

A. 10 ½ B. 21 ½ C. 22 ½ D. 4 ½

3. How much is 15 trup 3?

A. 18 B. 45 C. 12 D. 5

4. How much is 100 flix 50?

A. 2 B. 150 C. 1 D. 50

5. How much is 4 trup 20?

A. 1/5 B. 24 C. 80 D. 5

6. How much is 7 graf 7?

A. -7 B. 49 C. 14 D. 0

7. How much is (7 flix 3) graf 12?

A. -2 B. 9 C. 22 D. 33

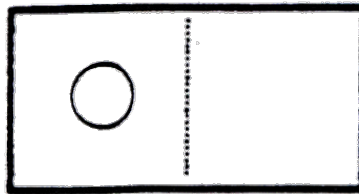
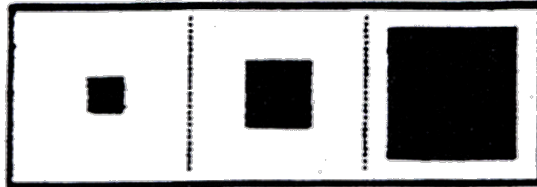
8. How much is (16 graf 8) trup 8?

A. 3 B. 1 C. 16 D. 64

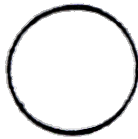
DIRECTIONS

In each question, the shapes in the first row of boxes go together in a certain way to form a pattern. The second row of boxes follows the same pattern. Decide what shape goes in the empty box.

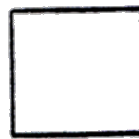
Sample A:



A.



B.

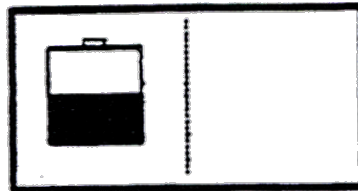
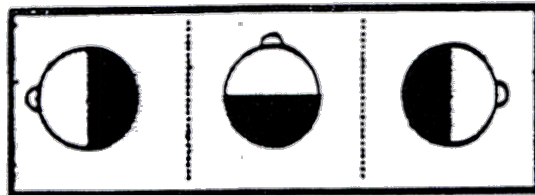


C.



D.

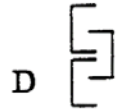
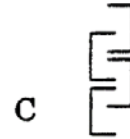
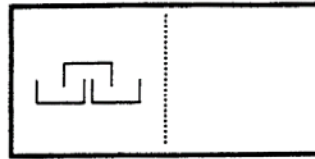
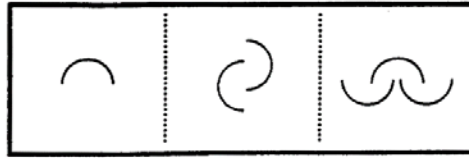
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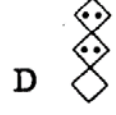
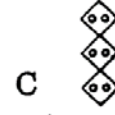
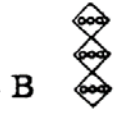
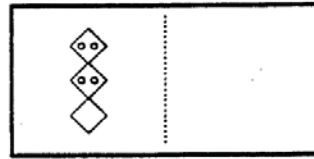
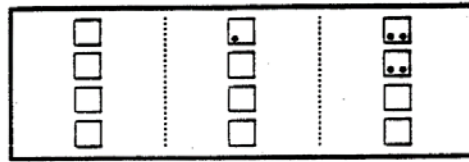
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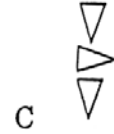
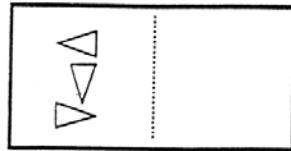
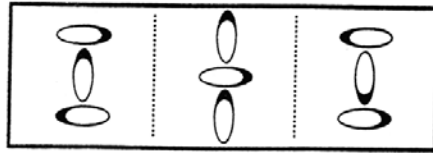
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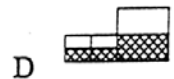
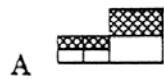
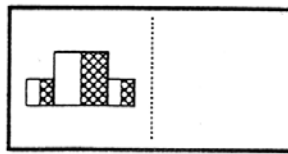
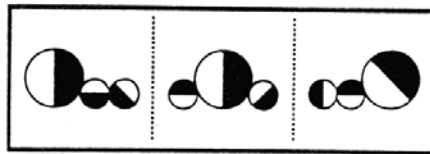
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3.



4.



A.5 Remote Association Task

RAT1 Cottage/swiss/cake
RAT2 Cream/skate/water
RAT3 Fountain/baking/pop
RAT4 Show/life/row
RAT5 Opera/hand/dish
RAT6 Safety/cushion/point
RAT7 Cane/daddy/plum
RAT8 Duck/fold/dollar
RAT9 Loser/throat/spot
RAT10 Aid/rubber/wagon
RAT11 Flake/mobile/cone
RAT12 Cracker/fly/flight
RAT13 Preserve/range/tropical
RAT14 Dream/break/light
RAT15 Dew/comb/bee
RAT16 Sense/courtesy/place
RAT17 Fish/mine/rush
RAT18 Political/surprise/line
RAT19 Worm/shelf/end
RAT20 Piece/mind/dating
RAT21 River/note/account
RAT22 Print/berry/bird
RAT23 Night/wrist/stop
RAT24 Food/forward/break
RAT25 Hound/pressure/shot
RAT26 Fur/rack/tail
RAT27 Basket/eight/snow
RAT28 Nuclear/feud/album
RAT29 Main/sweeper/light
RAT30 Carpet/alert/ink

A.6. SD3

Machiavellianism

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

Narcissism

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

Psychopathy

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

A.7. The Dirty Dozen

Machiavellianism

3. I tend to manipulate others to get my way.
9. I have used deceit or lied to get my way.
8. I tend to exploit others towards my own end.
10. I have used flattery to get my way.

Psychopathy

1. I tend to lack remorse.
2. I tend to be callous or insensitive.
11. I tend to be unconcerned with the morality of my actions.
12. I tend to be cynical.

Narcissism

4. I tend to want others to admire me.
5. I tend to want others to pay attention to me.
6. I tend to seek prestige or status.
7. I tend to expect special favors from others

A.8. The HEXACO PI-R

1. I wouldn't use flattery to get a raise or promotion at work, even if I thought it would succeed.
2. If I knew that I could never get caught, I would be willing to steal a million dollars.
3. Having a lot of money is not especially important to me.
4. I think that I am entitled to more respect than the average person is.
5. If I want something from someone, I will laugh at that person's worst jokes.
6. I would never accept a bribe, even if it were very large.
7. I would get a lot of pleasure from owning expensive luxury goods.
8. I want people to know that I am an important person of high status.
9. I wouldn't pretend to like someone just to get that person to do favors for me.
10. I'd be tempted to use counterfeit money, if I were sure I could get away with it.

APPENDIX B
STATISTICS

B.1

Means and standard deviations for each measured used.

	Mean	Std. Deviation
STATTOTAL	11.35	3.51
REMOTETOTAL	8.87	6.55
DivergentTotal	11.75	7.02
LiESTotal	2.86	.81
RevisedLiesTotal	3.25	1.03
Total24Liescale	5.37	9.21
SD3Mach	2.80	.70
SD3Narc	2.79	.64
SD3Psycho	1.93	.59
DirtyDozenMach	2.78	1.20
DirtyDozenPsychopathy	2.37	1.19
DirtyDozenNarc	3.45	1.43
HEXACOTotal	3.25	.64
MatrixDifference	.48	2.02

B. 2

Correlation matrix was performed between the creativity measures.

	STAT	REMOTE	DivergentTotal
STAT			
REMOTE	-.035		
Divergent	-.057	.286**	

** . Correlation is significant at the 0.01 level (2-tailed).

B. 3

Correlation matrix was performed between the lie surveys.

	LiES	RevisedLies	Total24Lie	MatrixDifference
LiES				
RevisedLies	.485**			
Total24Lie	.145*	.182**		
MatrixDifference	.011	.110	-.039	

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

B. 4

Correlation matrix was performed between the personality characteristics.

	1	2	3	4	5	6	7
1. SD3Mach							
2. SD3Narc	.394**						
3. SD3Psycho	.565**	.346**					
4. DirtyDozenMach	.574**	.257**	.553**				
5. DirtyDozenPsycho	.492**	.246**	.521**	.508**			
6. DirtyDozenNarc	.391**	.399**	.295**	.450**	.224**		
7. HEXACO	-.526**	-.296**	-.311**	-.359**	-.094	-.456**	

** . Correlation is significant at the 0.01 level (2-tailed).

B. 5

Multicollinearity was assessed for hypothesis 1.

Variable	VIF
Sternberg Test	1.00
Remote Association Task	1.09
Divergent Thinking Fluency Test	1.09

Multicollinearity was assessed for hypothesis 2.

Variable	VIF
Dirty Dozen Machiavellianism	1.73
Dirty Dozen Psypathy	2.15
Dirty Dozen Narcissism	1.37
SD3 Machiavellianism	2.08
SD3 Psypathy	2.11
SD3 Narcissism	1.38
Hexaco	1.80

Multicollinearity was assessed for hypothesis 3.

Variable	VIF
Dirty Dozen Machiavellianism	1.70
Dirty Dozen Psypathy	2.20
Dirty Dozen Narcissism	1.40
SD3 Machiavellianism	2.10
SD3 Psypathy	2.20
SD3 Narcissism	1.40
Hexaco	1.80