Faculty of Humanities and Social Sciences

Lie to me, lie to yourself: The dark triad, dishonesty and false memory

2018 | Max Draymon

B.A. Applied Psychology (Honours) Thesis

DOUGLAS COLLEGE

LIE TO ME, LIE TO YOURSELF? THE DARK TRIAD, DISHONESTY, AND FALSE MEMORY

by

MAX DRAYMON

B.A. (Honours), Douglas College, 2018

A THESIS PRESENTED TO THE DEPARTMENT OF PSYCHOLOGY IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE BACHELOR OF ARTS WITH HONOURS DEGREE IN APPLIED PSYCHOLOGY

Faculty and Thesis Supervisor
Nicole Vittoz (PhD), Department of Psychology, Douglas College

B.A. Honours Thesis

April, 2016
Douglas College
New Westminster, British Columbia, Canada

DOUGLAS COLLEGE

Acknowledgements

The author would like to thank Dr. Nicole Vittoz for her guidance as the project supervisor. Thanks to Dr. Laura Dane for her feedback as the program supervisor. Thanks to the Douglas College Psychology laboratory for technical assistance, and also thanks to the Douglas College Psychology department for the provision of relevant resources. Lastly, thanks to my family for their ongoing encouragement.

Lie to Me, Lie to Yourself? The Dark Triad, Dishonesty, and False Memory

Max Draymon

Douglas College

Abstract

The Dark Triad Traits (DTT: consisting of Psychopathy, Machiavellianism, and Narcissism) are clearly linked to deceptive and manipulative behaviour, yet little is known about whether people with high levels of DTTs deceive themselves in order to convince others. This online study investigated whether the DTTs predicted false memory levels, assessed by the DRM paradigm (Deese, 1959: Deese & McDermott, 1995), which was modified to include three neutral word lists and three word lists constructed around DTT-related lures (Power, Control, and Status). The sample (n=161) consisted of 136 females and 25 males from the undergraduate research pool and through social networks. Among the three DTTs, psychopathy was most closely predictive of self-reported dishonesty. However, results showed that psychopathy and narcissism significantly predicted lower rates of adopting false memories for neutral lures, whereas Machiavellianism was somewhat predictive of adopting higher false memory levels, particularly for the DTT lure (*control)*. These findings indicate that among the DTTs, psychopathy and narcissism are associated with a lower likelihood of self-deception, while Machiavellianism may increase the probability of self-deception.

Key Words: False Memory, Deception, Dark Triad, Personality, DRM, Psychopathy

Lie to me, Lie to Yourself? The Dark Triad, False Memory, and Dishonesty

Contemporary research in Psychology has examined the contribution of the dark triad traits of personality (DTT: Machiavellianism, narcissism, and psychopathy) to a variety of behaviours (Brewer, Hunt, James & Abell, 2015; Baruffi, Duinevald, Jonasson, Kroll, & Strosser, 2015; Jonasson, Kajonius, & Persson, 2015). Central behaviour traits that define the dark triad include emotional callousness, manipulative tendencies, grandiose views of self, and a general disregard for the welfare of others (Brewer et al., 2015). Although the traits have been explored within social contexts, little is known regarding the underlying cognitive components of the dark triad traits. The tendency of high DTT-individuals is towards dishonesty (Azizli et al., 2016; Halevi, Shalvi & Verschuere, 2013). Intuition may indicate that effective deceivers must also possess strong memories in order to delineate fact from fiction, and to whom they have lied. However, the question of memory accuracy in high-DTT individuals remains understudied. The current study inquires whether high DTT-individuals may fall prone to self-deception (e.g. false memory) in order to effectively mislead others.

It makes logical sense that a liar would require a genuine demeanor in order to successfully trick or manipulate another. Yet, from an evolutionary standpoint, deception may confer evolutionary benefits (Trivers & Von-Hippel, 2011). Deception requires the deceiver to possess adequate cognitive capabilities paired with a superficially-genuine demeanour to successfully manipulate another (Trivers & Von-Hippel, 2011). If the act of lying is cognitively taxing, it appears reasonable to assume that memory distortion would be a plausible mechanism for successful deception. Theoretically, the liar could produce a convincing lie simply by believing the lie, thus conveying an honest demeanor and avoiding the visible signs of deceitfulness (Corson & Verrier, 2007). The question then becomes: can high DTT-individuals

accurately distinguish between falsities and truths in their own memories, if they simultaneously deceive themselves in the process of lying?

Previous research has explored the parameters of dishonesty in high-DTT individuals (McLeod& Genereux, 2008). In general, cheaters presumably do not value following the rules and thereby would have a diminished concern for moral actions. In fact, the reoccurrence of cheating may reduce the ability to retrieve emotionally-related moral information (Shu & Gino, 2012). In order for cheaters to violate rules they would deliberately disregard or suppress any kind of contradictory feedback when considering rule breaking, ultimately resulting from declined importance placed on respecting laws (Shu & Gino, 2012). With regards to the DTTs, previous findings suggested that all three DTTs possessed a fundamental disregard for the rights and welfare of others, with an overall diminished moral concern for society (Jonason, Strosser, et al., 2015). Extending beyond basic cheaters or rule breakers, possessing either one DTT or a combination of the DTTs would imply a more severe and lifelong course of cheating and deception, since these findings were not based upon DTTs (Shu & Gino, 2012). Therefore, it is likely that those with higher DTTs will be more susceptible to memory corruption especially with regards to moral subject matter.

Studies investigating the consistency of memory have considered the question of accidental self-deception (Loftus, 1975). However, deliberate self-deception in order to facilitate the process of other-deception has not been well studied in the research field of false memory. One well-established experimental method of implanting simple false memories is the Deese Roediger Mcdermott (DRM) paradigm. This task predisposes subjects to falsely recall “lure” words based on the semantic themes around which a word list is constructed (Deese, 1959; Roediger & McDermott, 1995). Recent literature suggests that negative

emotional content can encourage false memory as measured by the DRM (Brainerd, Reyna, Rohenkold, Silveira, & Stein, 2008). Furthermore, false memory may be dependent on arousal levels, and some have suggested that high arousal encourages false memory (Corson & Verrier, 2007). Therefore, if we assume that deception correlates with an overall negatively-valenced and a highly-aroused mental state for some, the propensity to deceive may correlate with an increased likelihood to adopt false memories. Whether high-DTT individuals differ from the general population in the area of false memory is a research area requiring examination. The classic deficit evident in psychopathy is emotional callousness, and this trait also applies to a lesser degree to both narcissists and Machiavellians. Emotional callousness would not only diminish the awareness of emotional feedback, but would also significantly impact the appreciation of how unethical actions would influence others (Lyons & Hughes, 2015). To possess a conscience is counterproductive to the deception processes, and with a strategy that bypasses the consideration for moral actions or applies ignorance due to diminished emotional feedback, the adept deceivers would hypothetically give fewer incriminating clues to their audiences. Consequently, an integration of self-deception and emotional callousness may aid high-DTT individuals in deception, and if this is true, DTTs may be predictive of false memory formation.

The present study explored whether DTTs predicted false memory as measured by recall or recognition of lure words in a modified DRM paradigm. We expected false memory to be greater for lure words related to core values of the DTTs (*power*, *control*, *status*). Secondly, we predicted that higher DTTs would predict greater levels of self-reported and behavioural dishonesty. The final hypothesis was that higher levels of dishonesty would be correlated with higher levels of false memory.

Methods

Participants

Participants were 161 undergraduate students from Douglas College and individuals from social networks (136 female, mean age 23.48 years). After the completion of the study, Douglas College participants were given one percent participation credit, as a bonus to their grade in an introductory psychology course.

This study was completed online. Participants were asked to provide consent and were debriefed after their participation was complete. All methods were approved by the institutional research ethics board.

Materials

Die estimation task

At the beginning of the study, participants were told that they had the opportunity to test their luck by reporting the result of die rolls (Shalvi, Dana, Handgraaf & De Dreu, 2011). The die result screen was then shown, and participants were asked to report the results of the die rolls. After each of the 10 die trials, they were given feedback specific to their reported die rolls: a 1 or 2 was followed with a message that they were very unlucky. A dishonesty score was calculated based on the difference between the reported die roll from the actual roll displayed.

DRM word lists

The DRM paradigm was employed to measure the likelihood of false memory formation when influenced by suggestion (Roediger & MacDermott, 1995). The task consisted of six word lists, with the first three based around neutral lures: *window*, *needle* and *foot*. The remaining three lures related to values of the Dark Triad Traits: *power*, *status* and

control. Word list formats all resembled the format of previous DRM paradigm lists (Roediger & McDermott, 1995), but were presented visually in a slideshow format, one word at a time. After the presentation of each list, participants were asked to recall as many words as possible and type them into a text box. Following the presentation of all lists, a recognition task was designed based on previous DRM parameters (Roediger & MacDermott, 1995). For each word list, we derived a binary recall score, and generated a summary recall score based on counting how many lures that participants reported. Recognition scores ranged on a scale from 1 to 4, and summary recognition scores were calculated based on the sums of the scores for the recognition of lure words.

Dishonesty Self-Report Questionnaire

Next, participants were asked to indicate how often they had lied within the past week. Participants were instructed to type in how frequently they had lied in a variety of situations by entering a number into a text matrix corresponding to both the target of the lie and the degree of the lie (see Appendix A).

Dark triad personality scale

The SD3 personality questionnaire contains a total of 27 questions, nine questions each measuring psychopathy, Machiavellianism, and narcissism. (Jones & Paulhus, 2014). Items such as *most people can be manipulated,* or *I like to get revenge on authorities,* were administered with a rating scale of one (strongly disagree) to five (strongly agree). A summary score for each DTT was calculated by summing the scores for each item, with a maximum score of 45 for each DTT.

Statistical Analysis

Pairwise Pearson correlations were obtained for all measures. Multiple linear regression was used to explore the levels to which DTTs and dishonesty could predict false memory scores.

Results

A descriptive summary of the variables measured in the study is displayed in Table 1. Statistical analyses determined the pairwise Pearson correlations among dishonesty measures, DTTs, and false memory levels (Table 2). Notably, psychopathy and narcissism were significantly negatively correlated with recognition of all lures for false memory ($r = -0.22$, $p < .05$; $r = -0.17$, $p < .05$; respectively). Machiavellianism was not significantly correlated with summary measures of recognition of false memory, but significant positive correlations were revealed when the lure word *control* was analyzed with Machiavellianism ($r=.016$, $p<.05$). Psychopathy was the only DTT that was significantly correlated with dishonesty (as measured through self-report, $r=0.19$, $p< .05$).

Multiple regression models were constructed based on all three DTTs, using both dishonesty measures as predictors and each of the false memory measures as criterion variables. The resulting parameters are summarized in table 3a-3f. Within the regression models, two accounted for a significant proportion of variability. For the criterion variables of false memory as measured by recognition for all lures combined and recall for neutral lures, the strongest predictor was psychopathy ($\beta= -0.289$, Std. $\beta= -0.263$, $p= 0.004$, Table 3b; $\beta= -.0.306$, $p=0.001$, Table 3c; respectively). Notably, an interesting directional pattern was consistently displayed in nearly all of the regression models: psychopathy and narcissism generally predicted lower false memory levels, while Machiavellianism predicted higher false memory levels.

In order to determine what combinations of dishonesty and DTTs collectively best predicted false memory, we used best-fit multiple regression models including up to four predictor variables that maximized R^2. The results are summarized in Table 4. The predictor variables best accounted for variability in false memory for neutral lures.

In the best-fit regression models, false memory for DTT lures when measured by recognition was best predicted by psychopathy, narcissism, and the behavioural measure of dishonesty (as measured by the die reporting task). Psychopathy was the most closely associated DTT with dishonesty. We generated a regression model including including psychopathy and behavioural dishonesty, adding a two-way interaction to test the possibility that dishonesty moderates the extent that psychopathy is predictive of false memory. In this model, psychopathy ($\beta = -0.095$, $p = 0.026$) and the behavioural measure of dishonesty ($\beta = -0.566$, $p = 0.012$) both independently predicted lower levels of false memory for recognition of DTT-related lures. There was also a significant interaction ($\beta = 0.026$, $p = 0.033$). To facilitate the interpretation of the psychopathy x dishonesty interaction, Figure 1 presents a scatterplot of dishonesty and false memory for those with low vs. high psychopathy scores (as determined by the median split). For low-psychopathy participants, higher levels of behavioural dishonesty predicted lower levels of false memory. Conversely, higher levels of behavioural dishonesty predicted higher rates of false memory for high-psychopathy participants.

Discussion

The present study postulates evidence that moderately supports the research hypothesis. Overall, we found that DTTs are predictive of adopting false memory for both neutral and DTT-

related lure words. While psychopathy and narcissism were not particularly predictive of false memory for DTT-related lures, both traits were associated with lower levels of false memory for neutral lures. Only Machiavellianism predicted higher rates of false memory for a DTT-related lure, and psychopathy was the only DTT associated with self-reported dishonesty. Exploratory analyses indicate that behavioural dishonesty likely moderates the relationship between false memory and psychopathy; however, dishonesty on its own is not a reliable predictor of adopting false memory.

The Dark Triad Traits

The core unifying features of the DTTs include callousness, superficial charm, and manipulative tendencies (Azizli et al., 2016; Brewer et al., 2015), we predicted that participants testing highly on any of the DTTs will more likely adopt false memories. Our reasoning was that people who habitually lie may use self-deception in aid of telling a more convincing lie, and thus would increase the probability of adopting a false memory. Our findings, however, indicate that individual DTTs are differentially predictive of false memory development. Narcissism and Psychopathy appear to be protective factors against false memory. Concerning the criminal justice system, within which much of the research on personality, dishonesty and memory fallibility has occurred, psychopathy has been the primary trait of focus while narcissism and Machiavellianism have been somewhat under-examined despite sharing overlapping core features (Weir, 2007). The delineations amongst psychopathy, Machiavellianism and narcissism relate to the outcomes of the individual traits, as opposed to the fundamental characteristics that interconnect them. For instance, Machiavellianism is defined by manipulation, deception and an overall disregard for authority, while narcissism can be understood through a primarily self-focused outlook and a grandiose view of one's achievements (Semenyna & Honey, 2015).

Psychopathy's core features include callousness, cold affect, and a disregard for the exploitation of others (Brewer et al., 2015). The distinctions between each DTT will be used to explore the implications of the current findings.

Narcissism

Narcissists tend to adopt socially desirable social characteristics and moral ideals in order to appeal to a wider crowd (Jonason, Strosser, et al., 2015). In fact, they use a higher level of white lies to enhance the public perception of themselves, since values of social acceptability dominate their value systems so highly (Kajonius, Persson, & Jonason, 2015). Narcissism is associated with the possession of highly socially desirable traits like purity, concern for social welfare, and reduced harm models (Jonason, Strosser, et al., 2015). Clearly, this is indicative of a specific social strategy tailored to narcissistic individuals in an effort to maintain a morally-scrupulous appearance, while simultaneously benefitting from this strategy to ultimately enhance the self. The façade of moral concern displayed by Narcissists is in deep contrast with a self-promoting outlook Narcissists possess, to benefit or promote only themselves (Jonason, Strosser et al., 2015). The current finding, that Narcissism predicts lower rates of false memory, suggests that individuals high in this trait are unlikely employ self-deception in order to generate mild forms of dishonesty. The attentional focus of a Narcissist's memory is largely influenced by events that are self-focused in nature (Ritchie, Walker, Marsh, Hart, & Skowronski, 2015). In relation to themes unrelated to oneself, such as community well-being, narcissists have demonstrated a bias towards achievement-based autobiographical information (Hart et al., 2015). It is worth noting, however, that the DTT-relevant words in the DRM paradigm (in particular, *status*), may not have elicited a strong enough memory bias that related to the participants' experiences of personal achievement.

Machiavellianism

Clear relationships exist between increased Machiavellianism and decreased consideration for moral and social values (Jonason, Strosser, et al., 2015). In other words, a slight deviation from narcissism in the sense that Machiavellians do value selfish attributes, yet the value is more strongly emphasized through their desire for social manipulation and deception. This can take the form of revenge, as Machiavellians characteristically possess low self-esteem and engage in manipulative or exploitive behaviour as a compensatory method (Brewer & Abell, 2015). Motivations like revenge and manipulation dominate the mindsets of Machiavellians, yet what is unclear is to what extent Machiavellians are aware of how the deceptive process they routinely employ affect them. Common threads suggest that both narcissists and Machiavellians possess low self-esteem, since narcissists attempt to enhance the social perceptions of themselves to combat feelings of worthlessness while Machiavellians manipulate and deceive in order to compensate for poor self-images (Brewer et al., 2015). However, the two traits had opposing directional relationships with false memory rates: narcissism was correlated with a resistance to false memory, whereas Machiavellianism was correlated with higher levels of false memory. Specifically, higher Machiavellian individuals were more likely to recall the word *control.* This finding suggests that for Machiavellianism, our hypothesis regarding the use of self-deception as a cognitive aid to facilitate trait-specific goals and values may be correct. Indeed, another study also found that the degree of Machiavellianism may predict susceptibility to remembering false information in a misinformation paradigm (Simon, Williams, Wolfe & Hessler, 2015).

Psychopathy

Psychopathy is characterized by emotional callousness, a disregard for the rights and welfare of others, and criminal activity (Craig, Catani, Deeley, Latham, Daly, Kanaan, Picchioni, McGuire, Fahy & Murphy, 2015). In its extreme, psychopathy is considered a clinical personality disorder that is associated with cognitive deficits concerning the dysfunction of emotional-regulatory systems (Newman & Baskin-Sommers, 2012). Since the DRM procedure employed the use of semantically-related lures, the tendency to consistently relate words to an unlisted lure word may have proved more challenging for individuals high in psychopathy. In general, psychopathy may be associated with diminished peripheral attention and association (Newman & Baskin-Sommers, 2012). In clinical psychopaths, poverty of emotional feedback for items peripheral to attentional focus can interfere with emotional attachment to a memory (Glass & Newman, 2009). As a result, in the context of the DRM test, higher-psychopathy participants may exhibit diminished activation of conceptual networks around lure words. Further research is required to investigate the contribution of this potential cognitive difference to both memory accuracy and deceptive capabilities.

The Dark Triad Traits and Deception

The ways in which deception manifests within the DTTs ultimately differs and is context-dependent (Lyons & Hughes, 2015). When considering the individual DTTs and self-deception, motivations to self-deceive or falsely remember would presumably relate to the dominant features or values of the trait. For example, a narcissist may be more inclined to recall significant details of a socially-valued topic (i.e., *status*) whereas a Machiavellian may tend to recall points related to manipulation (i.e., *control*). We found that specific DTT-related lure words were not related to propensity toward false memory, except for the latter case: individuals who received high scores for Machiavellianism were more prone to falsely recall the word *control.* This

finding suggests that this lure was easily primed in the memory of participants with manipulative personality characteristics. Thus, high Machiavellian participants may become more vulnerable to memory revisionism, when seeking control over others.

If the DTTs have maintained prevalence over the course of evolution while providing benefits throughout the course of a DTT holder's life, the situational factors contributing to the adoption of DTT strategies are relevant. As mentioned previously, the process of self-deception involves information being processed preferentially to confirm a bias, while unwanted information is simultaneously prevented from becoming part of one's memory (Trivers & Von-Hippel, 2011). Within the realm of deceiving others, the presentation of either ambiguous or false information would be enhanced if the deceiver conveyed the information through self-assurance and vigor, effectively avoiding some telltale signs of deception (Trivers & Von-Hippel, 2011). Situational factors are another consideration, since it has been postulated that lying is more likely to occur when the probability of apprehension is unlikely, and perceived self-accountability is also low (Dana, Dreu, Handgraaf & Shalvi, 2011). Alternatively, others have suggested that deception is equally likely in both low and high risk scenarios when the potential payoff is large (Trivers & Von-Hippel, 2011). While a conscious, evaluative process may exist when considering the payoffs for one to employ deception, the retrieval of inaccurate information in order to facilitate deception may not be a conscious decision.

When psychopathy was paired with the self-reported measure of dishonesty, an interesting pattern was revealed. Higher levels of psychopathy were correlated with lower levels of false memory; along with this trend, an interaction between psychopathy and behavioural dishonesty was present. Specifically, low-psychopathy participants were more likely to adopt a false memory if they were also dishonest, while high psychopathy paired with high levels of

dishonesty was a combination associated with lower recall of lures (Figure 1). As deficits in the context of psychopathy are clearly linked with emotional callousness, one should not assume that deceptive tendencies universally follow psychopathy (Glass & Newman, 2009; Gino & Shu, 2012). Yet when psychopathy is paired with greater deceptive tendencies, a greater awareness of deception appears to result; thereby allowing these individuals to be aware of false information. Those with low psychopathy are more strongly influenced by the word lures if they demonstrate willingness to lie on the die task. We can interpret this finding to mean that the strategy employed by low-psychopathic individuals may be consistent with the self-deception strategy outlined above. However, high-psychopathy individuals may be resistant to false memory, because they do not need to employ self-deception in order to lie convincingly.

Limitations

The current results should be interpreted with caution. Generalizability of the results to populations outside of college or university settings is limited, as the sample for this study consisted primarily of undergraduate students. As the DTTs exist on a spectrum, qualitative differences may have been present when considering the presentation of the DTTs. This may be attributed to differing motivational factors and life circumstances of undergraduate students, compared to the rest of the population. Furthermore, the mean levels of DTTs in our sample were slightly low compared to the general population. A different sample with higher levels of DTTs may reveal different results.

The die-reporting task used as a measure of behavioural dishonesty in this study was not particularly effective. Most participants did not lie, rendering statistical analysis questionable. The task did not translate well to the online context and without monetary incentive (see Shalvi et al, 2011). Additionally, the DRM paradigm has been criticized as a simplistic measure of false

memory with low real-world validity (Gallo, 2010). The current findings should be replicated using a misinformation paradigm.

Conclusions

The results obtained from this study would indicate that high-psychopathy and narcissism are protective factors against false memory, whereas Machiavellianism predicts greater false memory (particularly false recall of the lure word *control*). These findings suggest that among the DTTs, psychopathy was the only trait correlated with self-reported dishonesty. The current study opens the question of differential deceptive mechanisms employed by each of the DTTs: psychopathy and narcissism may be associated with self-aware deception while Machiavellianism is associated with self-deceptive lying. Further work related to this study would benefit from experimental manipulation of variables like behavioural deception on order to further test the hypothesis.

References

Azizli, N., Atkinson, B. E., Baughman, H. M., Chin, K., Vernon, P. A., Harris, E., & Veselka, L. (2016). Lies and crimes: Dark Triad, misconduct, and high-stakes deception. *Personality and Individual Differences, 89,* 34-39. doi: 10.1016/j.paid.2015.09.034

Brainerd, C. J., Stein, L. M., Silveira, R. A. Rohenkohl, G., & Reyna, V. F. (2008). How does negative emotion cause false memories? *Psychological Science, 19*(9), 919-925. doi: 10.1111/j.1467-9280.2008.02177.x

Brewer, G. & Abell, L. (2015). Machiavellianism and sexual behaviour: motivations, deception, and infidelity. *Personality and Individual Differences, 74*(1), 186-191. doi: 10.1016/j.paid.2014.10

Brewer, G., Hunt, D., James, G. Abell, L. (2015). Dark Triad traits, infidelity and romantic revenge. *Personality and Individual Differences, 83*, 122-127. doi:10.1016/j.paid.2015.04.007

Craig, MC., Catani, M., Deeley, Q., Latham, R., Daly, E., Kanaan, R., Picchioni, M., McGuire, P.K., Fahy, T. & Murphy, D.G.M. (2009). Altered connections on the road to psychopathy. *Molecular Psychiatry, 14*(10), 946-953. doi: 10.1038/mp.2009.40

Corson, Y., & Verrier, N. (2007). Emotion and false memories: valence or arousal? *PsychologicalScience, 18*(3), 208-211. doi:10.1111/j.1467-9280.2007.01874.x

Gallo, D. A. (2010). False memories and fantastic beliefs: 15 years of the DRM illusion. *Memory & Cognition, 38*(7), 833-848. doi:10.3758/MC.38.7.833

Glass, S., & Newman, J. (2009). Emotion processing in the criminal psychopath: the role of attention in emotional facilitated memory. *Journal of Abnormal Psychology, 118*(1), 229-234. doi: 10.1037/a0014866

Halevy, R., Shalvi, S., & Verschuere, B. (2013). Being Honest About Dishonesty: Correlating Self-Reports and Actual Lying. *Human Communication Research*. *40*(1), 54-72. doi:10.1111/hcre.12019

Jonason, P. K., Richardson, E. N. & Potter, L. (2015). Self-reported creative ability and the dark triad traits. *Psychology of Aesthetics, Creativity, and the Arts, 9*(4), p. 488-494. doi:10.1037/aca0000037

Jonason, P. K., Strosser, G. L., Kroll, C. H., Duineveld, J. J. & Baruffi, S. A. (2015). Valuing Myself over others: the dark triad traits and moral and social values. *Personality and Individual Differences, 81,* 72-75. doi: 10.1016/j.paid.2014.10.045

Jonason, P. K., Wee, S. & Li, N. P. (2015). Competition, autonomy, and prestige: mechanisms through which the dark triad predicts job satisfaction. *Personality and Individual Differences, 72,* 112-116. doi:10.1016/j.paid.2014.08.026

Jones, D. N. & Paulhus, D. L. (2011). The role of impulsivity in the dark triad of personality. *Personality and Individual Differences, 51*(5), 679-682. doi: 10.1016/j.paid.2011. 04.011

Jones, D.N., & Paulhus, D.L. (2014). Introducing the short dark triad (SD3): a brief measure of dark personality traits. *Assessment, 21*(1), 28-41. doi:10.1177/1073191113514105

Kajonius, P. J., Persson, B. N. & Jonasson, P. K. (2015). Hedonism, achievement, and power: universal values that characterize the dark triad. *Personality and Individual Differences, 77*, 173-178. doi: 10.1016/j.paid.2014.12.055

Loftus, E. F. (1975). Leading questions and the eyewitness report. *Cognitive psychology, 7*(4), 560-572. doi: 10.1016/0010-0285(75)90023-7

Lyons, M. T. & Hughes, S. (2015). Malicious mouths? The dark triad and motivations for gossip.

Personality and Individual Differences, 78, 1-4. doi:10.1016/j.paid.2015.01.009

McLeod, B. A., & Genereux, R. L. (2008). Predicting the acceptability and likelihood of lying: The interaction of personality with type of lie. *Personality and Individual Differences,45*(7). 591-596. doi:10.1016/j.paid.2008.06.015

Meek, S. W., Phillips, M. C., Boswell, C. P. & Vandemia. J. M. (2014). Deception and the misinformation effect: an event-related potential study. *International Journal of Psychophysiology, 87*(1), 81-87. doi:10.1016/j.ijpsycho.2012.11.004

Newman, J. P., & Baskin-Sommers, A. R. (2012). Early selective attention abnormalities in psychopathy: implications for self-regulation. In *Cognitive neuroscience of attention* (421-440). New York, NY: Guildford.

Pesta, B. J., Murrphy, M. D., & Sanders, R. E. (2001). Are emotionally charged lures immune to false memory? *Journal of Experimental Psychology, Learning, Memory and Cognition, 27*(2), 328-338. doi: 10.1037//0278-7393.27.2.328

Ritchie, T. D., Walker, W. R., Marsh, S., Hart, C., & Skowronski, J. J. (2015). Narcissism distorts the fading affect Bias in autobiographical memory. *Applied Cognitive Psychology, 29*, 104-114. doi: 10.1002/acp.3082

Roediger, H. L. & MacDermott, K. B. (1995). Creating false memories: remembering words not present in lists. *Journal of Experimental Psychology: Learning, Memory, and Cognition, 21*(4), 803-814. doi:0278-7393/95

Semenyna, S. W. & Honey, P. L. (2015). Dominance styles mediate sex differences in dark triad Traits. *Personality and Individual Differences, 83*, 37-43. doi:10.1016/jpaid.2015.03.046

Serota, K. B., Levine, T. R., & Boster, F. J. (2010). The Prevalence of Lying in America: Three Studies of Self-Reported Lies. *Human Communication Research, 36*(1), 2-25

doi:10.1111/j.1468-2958.2009.01366.x

Shalvi, S., Dana, J. Handgraaf, M. J. & De Dreu, C. K. (2011). Justified ethicality: Observing desired counterfactuals modifies ethical perceptions and behavior. *Organizational Behavior and Human Decision Processes, 115,* 181–190. doi: 10.1016/j.obhdp.2011.02.001

Shu, L. & Gino, F. (2012). Sweeping dishonesty under the rug: how unethical actions lead to forgetting of moral rules. *Journal of Personality and Social Psychology, 102*(6), 1164-1177. doi: 10.1037/a0028381

Simon, I., Williams, T., Wolfe, M. & Hessler, J. (2015). I can't remember: the effects of Machiavellianism, mental effort and lying on memory. *Student Summer Scholars, 137,* 1-25. Retrieved from http://scholarworks.gvsu.edu/sss/137

Turnipseed, S. W. & Cohen, S. R. (2015). Academic entitlement and socially aversive personalities: Does the dark triad predict academic entitlement? *Personality and Individual Differences, 83,* 72-75. doi: 10.1016/j.paid.2015.03.003

Van Damme, I. & Smets, K. (2014). The power of emotion versus the power of suggestion: memory for emotional events in the misinformation paradigm. *Emotion, 14*(2), 310-320. doi: 10.1037/a0034629

Von Hippel, W. & Trivers, R. (2011). The evolution of psychology and self-deception. *Behavioural and Brain Sciences: 34*(01), 1-56. doi: 10.1017/S0140525X10001354

Weir, J. M. (2007). Subtyping psychopathy: exploring the roles of degree of punishment, dissonance and optimism. *Graduate Theses and Dissertations, 24(5),* 1-126. Retrieved from http://scholarcommons.usf.edu/etd/2405

Variable	Minimum	Maximum	Median	Mean	SEM
Psychopathy	11	36	21	20.9	0.36
Narcissism	12	38	38	25.3	0.42
Machiavellianism	13	41	41	25.8	0.44
Dishonesty: Behavioural	0	24	0	0.9	0.28
Dishonesty: Self-report	0	675	27	57.4	7.64
False memory: Recall (Neutral)	0	3	1	1.0	0.07
False memory: Recall (DTT)	0	3	0	0.4	0.05
False memory: Recognition (Neutral)	3	12	10	9.7	0.18
False memory: Recognition (DTT)	3	12	9	9.0	0.20

Table 1. Descriptive statistics of all variables measured.

Variables	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
1. Psychopathy	**1**										
2. Narcissism	**0.230**	**1**									
3. Machiavellianism	**0.495**	**0.198**	**1**								
4. False Memory: Recall (Neutral)	**-0.273**	-0.141	-0.041	**1**							
5. False Memory: Recall (DTT)	0.056	-0.013	0.139	0.112	**1**						
6. False Memory: Recall (Overall)	-0.118	-0.055	0.089	**0.782**	**0.616**	**1**					
7. False Memory: Recognition (Neutral)	**-0.221**	-0.116	-0.055	**0.386**	-0.002	**0.255**	**1**				
8. False Memory: Recognition (DTT)	-0.118	**-0.166**	-0.094	0.070	**0.223**	0.147	**0.267**	**1**			
9. False Memory: Recognition (Overall)	**-0.216**	**-0.172**	-0.027	**0.570**	**0.485**	**0.671**	**0.694**	**0.700**	**1**		
10. Dishonesty: Behavioural	-0.120	0.082	-0.068	0.012	-0.064	-0.062	-0.036	-0.131	-0.105	**1**	
11. Dishonesty: Self-report	**0.191**	0.071	0.150	-0.131	0.112	0.013	-0.077	0.020	-0.019	0.031	**1**

Table 2. Correlation matrix for all major variables. Bold numbers represent $p < .05$.

DV: False Memory: Recall (Overall)	Adjusted R^2 =0.02	F(5,155) =1.66	p=0.15
Predictor	Standardized β	p	η^2
Psychopathy	-.221	.018*	.035
Narcissism	-.040	.625	.002
Machiavellianism	.197	.032*	.029
Dishonesty: Self-reported	.031	.699	.001
Dishonesty: Behavioural	-.073	.360	.005

*Table 3a. Summary of regression model. *p < .05*

DV: False Memory: Recognition (Overall)	Adjusted R^2 =0.06	F(5,155) =2.97	p=0.014*
Predictor	Standardized β	p	η^2
Psychopathy	-.263	.004*	.056
Narcissism	-.126	.115	.017
Machiavellianism	.116	.193	.009
Dishonesty: Self-reported	.026	.737	.000
Dishonesty: Behavioural	-.120	.127	.015

*Table 3b. Summary of regression model. *p < .05*

DV: False Memory: Recall (Neutral)	Adjusted R^2 =0.07	F(5,155) =3.52	p=0.005*
Predictor	Standardized β	p	η^2
Psychopathy	-.306	.001*	.050
Narcissism	-.092	.245	.008
Machiavellianism	.141	.111	.016
Dishonesty: Self-reported	-.087	.265	.000
Dishonesty: Behavioural	-.005	.951	.004

*Table 3c. Summary of regression model. *p < .05*

DV: False Memory: Recognition (Neutral)	Adjusted R^2 =0.03	F(5,155) =2.06	p=0.074
Predictor	Standardized β	p	η^2
Psychopathy	-.245	.009*	.044
Narcissism	-.069	.393	.005
Machiavellianism	.082	.367	.005
Dishonesty: Self-reported	-.036	.653	.001
Dishonesty: Behavioural	-.053	.502	.003

*Table 3d. Summary of regression model. *p < .05*

DV: False Memory: Recall (DTT)	Adjusted R^2 =0.00	F(5,155) =1.08	p=0.375
Predictor	Standardized β	p	η^2
Psychopathy	-.033	0.725	.002
Narcissism	-.036	0.663	.002
Machiavellianism	.014	0.121	.016
Dishonesty: Self-reported	.102	0.210	.000
Dishonesty: Behavioural	-.059	0.464	.000

*Table 3e. Summary of regression model. *p < .05*

DV: False Memory: Recognition (DTT)	Adjusted R^2 =0.25	F(5,155) =1.82	p=0.112
Predictor	Standardized β	p	η^2
Psychopathy	-.097	0.293	.007
Narcissism	-.129	0.115	.016
Machiavellianism	-.038	0.678	.001
Dishonesty: Self-reported	.057	0.473	.002
Dishonesty: Behavioural	-.137	0.087	.039

*Table 3f. Summary of regression model. *p < .05*

Dependent Variable	Predictors	Adjusted R^2
False Memory: Recall (Neutral)	Psychopathy, Narcissism, Machiavellianism, Dishonesty: Self-reported	.079
False Memory: Recognition (Neutral)	Psychopathy	.043
False Memory: Recall (DTT)	Machiavellianism, Dishonesty: Self-reported	.015
False Memory: Recognition (DTT)	Psychopathy, Narcissism, Dishonesty: Behavioural	.033

*Table 4. Summary of best-fit regression models. *p < .05*

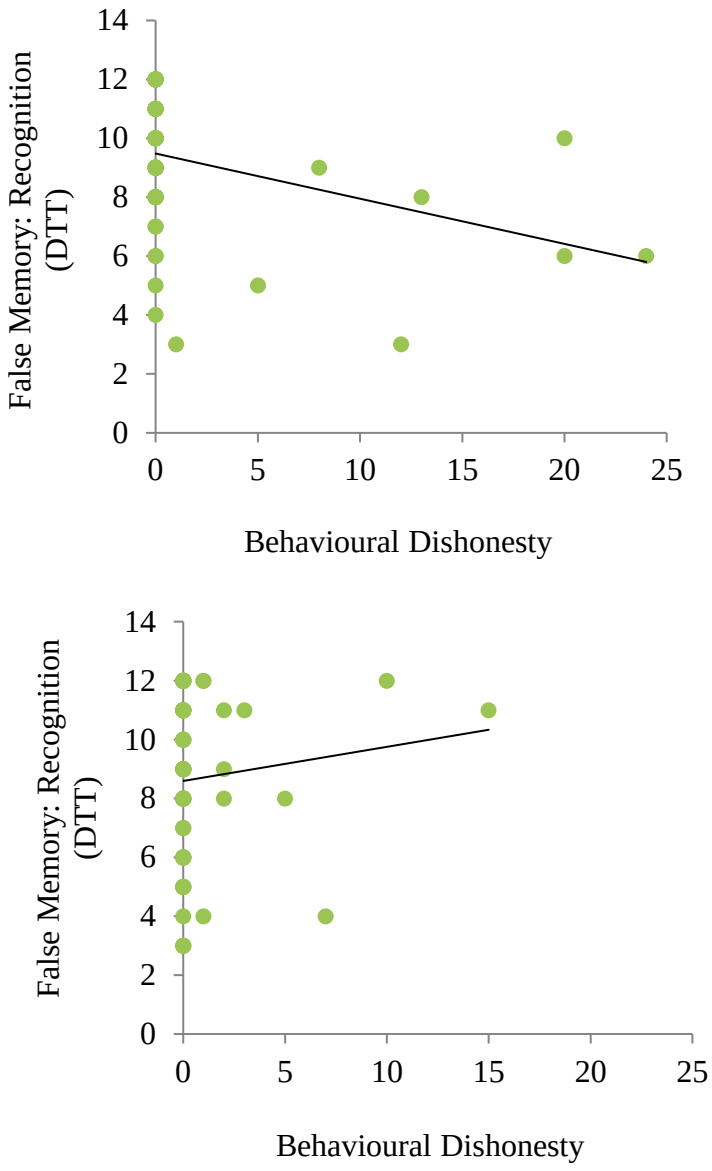

Figure 1. Scatter plots of Behavioural Dishonesty and False Memory: Recognition (DTT lures) for low- (top) and high- (bottom) psychopathy participants.

Appendix A

Self-reported Dishonesty Measure

In the past week, how many times did you lie…

	Small lie to benefit another person	Small lie to benefit yourself and another person	Small lie to benefit yourself only	An exagg-eration	Left out a detail	Big lie to benefit another person	Big lie to benefit for yourself and another's benefit	Big lie for your benefit only
Family								
Friend								
Co-worker								
Acquain-tance								
Stranger								

Adapted from Serota, Levine, & Boster (2010).