THE INFLUENCE OF THE DARK TRIAD AND COMMUNICATION MEDIUM ON
DECEPTIVE OUTCOMES

by

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Abstract

The present study examined the influence of dark personality traits (i.e., psychopathy, narcissism, and Machiavellianism) and communication condition (i.e., face-to-face [FtF] or computer-mediated communication [CMC]) on success in a persuasive deception task. Dark personality traits commonly have been associated with manipulative behaviour in a variety of FtF contexts (e.g., workplace interactions, interpersonal relationships). However, less is known about whether dark personality traits function in the same manner online. Research on negotiation has found that individuals high in Dark Triad traits tend to perform better FtF than through CMC, and that they are outperformed by individuals lacking in dark personality traits in the context of online negotiations (Crossley, Woodworth, Black, & Hare, 2016). The current study utilized a decision-making task in which participants (N = 204) worked in dyads. One participant was randomly assigned as the deceiver and was instructed to attempt to persuade their opponent in order to increase their own chances of winning a $500 raffle. Participants consisted of both psychology and business students. Previous research has found that business students have heightened levels of dark personality traits (e.g., Hassall, Boduszek, & Dhingra, 2015). Further, the language from both the FtF and CMC dyads were recorded and analyzed to assess for differences. Results indicated that certain dark personality traits (i.e., psychopathy and narcissism) were associated with decreased deceptive success in the online context, but only for those individuals who scored the highest on the traits (i.e., typically business students). Additional results emerged in relation to language, indicating that psychopathy and Machiavellianism are related to a more guarded style of discourse.
Preface

The Behavioural Research Ethics Board of the University of British Columbia’s Okanagan
Campus granted ethics approval for this research. The certificate approval number for the project
is H15-00442. To date, the results of this study have not been published.
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Dedication

To Matilda and Milhouse.
CHAPTER I Introduction

Deception is a common occurrence in daily interactions. In fact, one study found that 60% of people lied at least once in a ten-minute introductory conversation (Feldman, Forrest, & Happ, 2002). Reasons for lying can range from benign white lies to more malicious lies intended to do harm. Recent research has found that the majority of people engage in mostly white lies, while bigger more important lies are told by a relatively smaller group of prolific liars (Serota & Levine, 2015). A great number of larger lies involve the use of persuasion and are aimed at obtaining a reward or positive outcome for the deceiver (Dunbar et al., 2014). Although deception is prevalent in our daily lives, the impact of this deception depends in large part on whether the lie is successful. The deceptive success of an individual can be influenced by a number of factors, including their personality, as well as the communication medium used to deceive. One area of personality that has been studied in relation to deception is that of the Dark Triad (DT). The Dark Triad of Personality is a set of three personality constructs, which represent distinct yet similar interpersonal characteristics (Paulhus & Williams, 2002). The first of these constructs, psychopathy, is characterized by shallow affect, callousness, and deceptive and manipulative interpersonal behaviour. Psychopathic individuals are known for their ability to con others and represent a substantial proportion of incarcerated individuals, particularly at the Federal level (Hare, 1999). Narcissism is characterized by an inflated view of the self, grandiosity, and a sense of entitlement (Baughman, Dearing, Giammarco, & Vernon, 2012). Individuals who are highly narcissistic tend to view themselves as superior and do not exhibit a great amount of care or empathy toward other people. Lastly, Machiavellianism is a personality trait typified by manipulative and calculating behaviour toward others (Baughman et al., 2012). People with this trait care about others insofar as they represent an opportunity to further
themselves. Their philosophy tends to revolve around an ‘ends-justify-the-means’ type of mentality that compromises ethics in lieu of personal advancement. In sum, selfish and manipulative interpersonal behaviour is what lies at the core of the Dark Triad. The malevolent nature of these personality traits highlights the importance of examining them in relation to manipulative behaviours such as persuasion and deception. In addition to personality, communication medium is an important consideration when examining deception. Different communication environments provide varying cues that may help a deceiver succeed, or conversely, help an individual identify that they are being deceived. Face-to-face (FtF) communication allows for a wealth of nonverbal information, including body language, as well as paraverbal behaviours, such as tone and intonation. However, over the past several decades, computer-mediated communication (CMC) has become an increasingly common and convenient form of interaction. This type of communication, which is still most often text-based (rather than video-based, such as Skype), lacks the presence of nonverbal behaviour and therefore relies entirely on language. Not only do these factors appear to play a role in the outcomes of deception, but they also may interact with the deceiver’s personality characteristics (Hancock & Woodworth, 2013). This study aimed to uncover the influence of dark personality traits and communication medium as they relate to persuasive deceptive outcomes.

To date, there has been only a limited amount of research exploring the relationship between deception and the Dark Triad. A recent study found that both psychopathy and Machiavellianism were related to an individual’s propensity to deceive others, and that psychopathy was related to experiencing more positive emotions while lying (Baughman, Jonason, Lyons, & Vernon, 2014). Other research has found that psychopathy is related to lying for no reason at all (so called ‘duping delight’), narcissism is related to lying for self-gain,
whereas Machiavellianism is related to telling more white lies (Jonason, Lyons, Baughman, & Vernon, 2014). All three DT traits have been related to the perceived ability to deceive others (Giammarco, Atkinson, Baughman, Veselka, & Vernon, 2013). Although the DT has been linked to an inclination to deceive others, whether this deception is actually successful is less clear. A recent study that examined the Dark Triad and the ability to deceive others found no relationship during a group-based deception task in which participants attempted to deceive each other by providing a false opinion on a social topic (e.g., animal testing; Wright, Berry, Catmur, & Bird, 2015). Despite limited results, more research clearly is required to determine the exact circumstances under which dark personality traits may or may not be beneficial to deception.

Most of the research that has examined whether dark personality traits are related to deceptive success has focused on psychopathy. One study that had psychopathic and non-psychopathic offenders tell either a genuine or false story found that psychopathic offenders were actually less successful than their non-psychopathic counterparts at deception, and that their psychopathic traits were linked to decreased credibility (Klaver, Lee, Spidel, & Hart, 2009). It should be noted that this study used videotaped accounts of deception, which may differ substantially from direct face-to-face communication in terms of the impact nonverbal behaviour has on the listener. However, other research using videotaped communication of psychopathic offenders has found that they are actually better able to feign remorse and fear (Book et al., 2015). ‘False remorse’ stories told by psychopathic offenders were rated as more genuine, as were feigned expressions of fear. This suggests that psychopathy is related to being skilled at affective mimicry, which may serve as an advantage when deceiving others FtF. Psychopathy also has been linked to specific nonverbal behaviours during deception that differ from those typically seen in nonpsychopathic samples (Klaver, Lee, & Hart, 2007). These behaviours
include increased blinking and head movements, as well as faster speech. Researchers theorized that this nonverbal behaviour may come across as confidence or exhibiting a commanding disposition, or may even help to distract the listener from what they are saying. Other research examining psychopathy in relation to physiological indicators of deception (i.e., using polygraph tests) has found that guilty psychopathic offenders were just as easily identified as guilty nonpsychopathic offenders during a mock theft paradigm (Patrick & Iacono, 1989). In sum, research on psychopathy and deceptive success is mixed, with some studies suggesting that they may be at a disadvantage and others pointing to unique characteristics of psychopathic individuals that may actually help them succeed. Further, the exact conditions (e.g., communication media) under which success may vary has received a relatively scant amount of empirical enquiry.

To my knowledge, narcissism has not been examined in relation to deceptive success. This may be a result of the type of deception that narcissists tend to typically engage in (Jonason et al., 2014). As previously mentioned, narcissists tend to lie for self-gain and recent research has suggested that this may manifest in new ways as a result of social media. For example, it’s been found that narcissists are more likely to alter their self-presentation online by editing ‘selfies’ before posting (Fox & Rooney, 2015). This type of deception is not as focused on deceiving any one person in particular, but rather on creating a misleading persona that the narcissistic individual may use as a way to bolster his or her own self-esteem. Previous research has associated narcissism with the practice of self-deception, with the likely goal being to maintain the appearance of high self-esteem (Paulhus & John, 1998). Some researchers have theorized that self-deception is actually an evolutionary strategy meant to enhance deceptive success by diminishing the amount of cue leakage (von Hippel & Trivers, 2013). However, Wright et al.’s
(2015) study on the Dark Triad and deception found a link between self-deception and decreased credibility during the deceptive task, though they did not find this link between narcissism and decreased credibility. The relationship between narcissism and the use of deception to persuade or manipulate others remains unclear.

Though not as widely studied as psychopathy, there has been some research conducted on the relationship between Machiavellianism and deceptive success. One study found that individuals high in Machiavellian traits were more successful at denying knowledge of a theft compared to individuals low in the trait, suggesting that Machiavellianism may be an advantage to individuals during deception (Geis & Moon, 1981). The often calculating and cutthroat approach to success that characterizes these individuals may serve as an asset when attempting to persuade others. In fact, an early study that examined Machiavellianism during negotiations in which individuals were either FtF or had a screen between them found that individuals low in Machiavellianism performed better when there was a screen shielding them from their high Machiavellian counterpart (Fry, 1985). It was theorized that this was due to the individuals low in Machiavellianism not experiencing the same level of emotional arousal that they did when they were FtF with high Machiavellians, therefore allowing them to better negotiate. This study was one of the first attempts to examine a Dark Triad trait in a non FtF setting, and highlights the importance of considering communication medium when studying personality.

1.1 Communication Medium as a Clue to Success

Whether or not individuals with DT traits are successful with their deception may be partially dependent on the context in which the deception occurs. A recent study found that liars in physically scarce environments (i.e., lacking richness in colours, objects, and textures) were associated with decreased credibility compared to individuals in enriched environments, possibly
due to feelings of discomfort and powerlessness evoked by the scarcity of the environment (ten Brinke, Khambatta, & Carney, 2015). It would appear that even subtle aspects of the environment, such as lack of colour, can contribute to deceptive outcomes. Conditions in which no visual cues are present may then present a very different picture for individuals trying to deceive. This is in line with media richness theory, which suggests that communication mediums differ in the amount of information and cues that can be conveyed (Poole et al., 1992). These differences in information often result in individuals feeling varying levels of connection with the individuals with whom they are communicating. FtF communication arguably would result in the most connection, as a result of this setting offering the highest possible amount of information (i.e., verbal, paraverbal, and nonverbal cues).

Computed-mediated communication has become increasingly common, as more and more individuals make use of the relative ease of communication that this medium offers. However, there appears to be important differences in the ability to deceive depending on the communication medium (e.g., Hancock, Woodworth, & Goorha, 2010). Accordingly, it is important to note the many ways in which CMC differs from that of traditional FtF communication. Perhaps most notably, there is a complete lack of nonverbal behaviour when communicating online. Rather, individuals must often rely on written language alone in this setting, offering further opportunities for editing and taking time to craft one’s message. There also is a great degree of anonymity in many online interactions and the lack of nonverbal behaviour can result in more ambiguous communication (e.g., cannot rely on facial expressions to determine if someone is joking). Walther (2012) theorized that this ambiguity could result in a more hostile and impersonal style of communication online because individuals are not able to identify the social and emotional cues that they are able to FtF, resulting in confusion and
frustration. This may be particularly relevant to online communication involving deception, as adopting a more hostile and impersonal communication style arguably could make it more difficult for others to deceive you.

Research involving online deception has found that when highly motivated, individuals tend to be more successful at lying than less motivated individuals, which is the reverse of what has been found in face-to-face (FtF) studies where there is a motivational impairment effect (Hancock, et al., 2010). Environments lacking in visual cues may be advantageous for individuals trying to deceive, as any leakage cues of the deception would be unnoticed by the receiver. In fact, Toma, Jiang, and Hancock (2016) suggest that due to the lack of nonverbal behaviour in CMC, deceivers need to be less concerned with potential cue leakage, and do not have to worry about their deception being verified in the same way individuals would FtF (e.g., if lying about one’s whereabouts, this cannot be confirmed through text-based communication).

The truth bias, or tendency to believe people are being truthful, which is often found FtF, also has been found to be present in online environments (Woodworth, Hancock, Agar, Cormier, & Carpenter, 2010). Further, this same study found that priming individuals to be suspicious in online environments did not result in increased deception detection, suggesting that online environments should make it easier for people to deceive. Other research has found that individuals tend to become more aggressive when communicating online, using more persuasion and threats (Giordano, Stoner, Brouer, & George, 2007). The use of these tactics was related to increased success in a negotiation, highlighting the possible benefit of aggressive tactics in an environment devoid of physical cues. The differing nature of online communication environments clearly can result in outcomes that do not parallel those found FtF. For example, unique language patterns have been found in the context of online predation, suggesting that
online child sex predators use grooming strategies in distinct ways from in person child predators (Black, Wollis, Woodworth, & Hancock, 2015). Examining verbal behaviour, the single most important factor in text-based CMC, may shed light on why these differences exist.

1.2 Language as a Clue to Success

Given the significant role that language plays in deception occurring both FtF and online, the nature of the language used by individuals with DT traits is important to consider. A recent review of psychopathy and language found that psychopaths tend to be unaware of the meaning behind what they are saying (de Almeida Brites, 2016). Their so-called “gift of gab” does not appear to come from deliberately planned and thoughtfully constructed language. Rather, it arises from the use of persuasive and misleading words; the meaning and emotional valence of which often are not understood by the speaker. In fact, Cleckley (1976) described psychopaths’ language as hollow, inferring that the words they spoke were not supported by an underlying appreciation for their meaning. This may be a result of a psychopathic individual being unable to properly understand emotion, resulting in the use of language that is incongruent with the psychopathic individual’s true intentions. In fact, a recent study found that psychopathic individuals used fewer anxiety-related words, indicative of their diminished emotional responsiveness (Le, Gillman, Woodworth, & Hare, 2015). The written word of individuals high in psychopathy has long been found to be incoherent and lacking in organization, and their speech has been found to contain a higher amount of disfluencies (e.g. um, uh; Brinkley, Bernstein, & Newman, 1999; Hancock, Woodworth, & Porter, 2013). Other research using a non-forensic sample (i.e., students) has found that the online communication of psychopathic individuals contains more swear words, hostile words, and less positive emotion compared to the language of non-psychopathic individuals, which might affect their ability to deceive online.
where hostility could be perceived differently than FtF (Hancock, Woodworth, & Boochever, 2015). Further, those higher in psychopathy have been found to make fewer references to others, highlighting a tendency toward self-centeredness and lack of concern for others. Psychopathy also is related to impulsivity, which may prevent psychopathic individuals from taking advantage of the increased time and editing available in CMC settings, or result in spontaneously speaking before planning out what they are intending to say.

Similarly, individuals high in narcissism also have been found to use more offensive language, which has been speculated as arising from an attempt to gain attention (Adams, Florell, Burton, & Hart, 2014). Another study on narcissism and language found that, surprisingly and contrary to popular belief, narcissism was not related to the use of first-person pronouns (Carey et al., 2015). The self-centeredness at the root of narcissism may not actually be readily apparent in their written language, perhaps making them seem less socially abrasive than has been previously thought. Despite some research finding narcissism to be related to making more references to friends, they have also been found to use more disagreeable words, suggesting that their arrogant nature may come across through aspects of their language other than pronoun use (Holtzman, Vazire, & Mehl, 2010). Research examining the relation between Machiavellianism and language has been practically non-existent to date, but given that Machiavellianism shares many features with psychopathy (and in fact has been theorized as being a successful version of psychopathy; McHoskey, Worzel, & Szyarto, 1998), it is possible that these commonalities may prove to demonstrate similar linguistic patterns, as well as potential differences. These aforementioned language features, such as hostile and offensive language, may serve as a disadvantage to individuals high in psychopathy, and perhaps other DT
traits, when trying to manipulate or deceive others online, where their language is all they have to rely upon.

Discernible differences between deceptive and genuine language has been examined extensively. While research has consistently found these differences, the circumstances under which they occur have been found to vary. For example, one recent study that investigated genuine versus feigned accounts of remorse found that individuals who were being genuine used more first person pronouns (Moberley & Villar, 2016). Other research that examined deceptive and genuine ‘pleaders’ (i.e., individuals pleading for their missing loved one’s return) found that genuine pleaders used more personalized language (such as “we” terms), whereas deceptive pleaders used more “they” terms (McQuaid, Woodworth, Hutton, Porter, & ten Brinke, 2015). A recent meta analysis suggests that factors such as motivation for deception, and intensity of the interaction (e.g., online, face-to-face) may affect the type of language used during deception (Hauch, Blandon-Gitlin, Masip, & Sporer, 2015). Specifically, with respect to interaction intensity, word count and negative emotions were highest for face-to-face interactions compared to other modes of communications. Further, highly motivated liars were better able to control their verbal behaviour by using fewer words and providing fewer temporal details but they were less able to control both paraverbal (e.g., pitch and tone of voice) and nonverbal behaviour (e.g., eye contact), compared to truth tellers. Clearly, the context of the deception plays a large role in what type of language will be used. The current study’s paradigm examined both face-to-face and computer-mediated contexts with liars who were motivated to succeed.

One aspect of language that has been theorized as important in the context of persuasive deception (e.g., convincing someone to go along with what you want) is dominance (Dunbar et al., 2014). The use of dominant language may help the deceiver essentially pressure their
opponent into agreeing. The efficacy of this type of tactic may depend in large part on whether the dominant language is used in isolation from other tactics (as seen in CMC), or whether it is part of a larger dominant strategy (as may be seen FtF, in conjunction with dominant nonverbal behaviour). A study that examined linguistic dominance in the context of online deception found that deceivers tend to manipulate their use of linguistic dominance more frequently than truth-tellers (Zhou, Burgoon, Zhang, & Nunamaker, 2004). Specifically, they increased their usage of linguistic dominance throughout the interaction, which was theorized as resulting from the deceivers first building a relationship with their partner before attempting to persuade them through dominance. The authors also suggested that more dominant individuals would likely feel more comfortable using dominance FtF, where they could also rely on nonverbal behaviour, whereas less dominant individuals would probably feel most at ease in an online environment where they are kept at a distance from their partner.

Linguistic dominance parallels a strategy often used in another form of persuasive communication: negotiation. Negotiation theory has posited two styles of negotiation, distributive and cooperative (Pruitt, 1981). Distributive negotiation makes use of dominant tactics, as the aim in this type of negotiation is to attain the maximum amount of value for oneself, while leaving your partner with nothing. This is in comparison to cooperative negotiation, which is aimed at coming to mutually beneficial solutions. Both negotiation and deception often make use of persuasion and manipulation in order to obtain a desired outcome. However, deception by its very nature is a calculated act of dishonesty. Conversely, negotiation, though it may involve deception in some cases, more often relies on ‘softer’ tactics, such as enticement or coercion. Understanding how the Dark Triad operates in terms of negotiation provides an opportunity to better understand how individuals with varying levels of Dark Triad
traits are able to deceive, and in particular, their potential propensity to engage in persuasive types of deceit.

Previous research examining the relation between DT traits and negotiating ability both FtF and online found that individuals high in these traits (specifically a composite variable of all three traits) were more successful during negotiations that occur FtF compared to CMC (Crossley, Woodworth, Black, & Hare, 2016). Conversely, individuals lacking in these traits were far more successful when negotiating in a CMC context compared to individuals high in DT traits. It was speculated that individuals high in Dark Triad traits may not demonstrate compelling enough linguistic abilities to be able to persuade others in an online environment, where their language is all they have to rely on and the use of nonverbal behaviour is absent. Further, individuals low on the Dark Triad were found to use more positive emotion and assent terms when FtF compared to online, suggesting that they are able to alter their usually agreeable and unassertive orientation when communicating online (Crossley, Woodworth, Black, & Hare, 2015). By altering their disposition, individuals low in these traits may be able to become more impervious toward attempts at being persuaded. In summary, there is limited research suggesting that individuals with Dark Triad traits potentially have a harder time manipulating others when online, possibly due to both the language features these individuals have been shown to possess, as well as their inability to make use of any advantageous aspects of nonverbal behaviour (e.g., distracting, persuasive, or confident body language). In addition, individuals low on the DT appear to alter their communication strategies online in a skillful way that enhances their negotiation success.

Deception can take on many forms and does not necessarily require the practice of outright lying (Buller & Burgoon, 1996). Indeed, persuasive deception is more heavily focused
on appearing credible, convincing, and evading detection (Dunbar et al., 2014). Research on persuasive deception is limited, and the majority of it has focused on deception as a strategy for negotiation (see Boles, Croson, & Murnigan, 2000; Lount, Zhong, Sivagathan, & Murnighan, 2008). This form of deception was chosen as a focus of this study because it taps into an individual’s ability to manipulate others, which is one of the core traits that encompasses all three components of the Dark Triad. Despite the similarities with negotiation, the nature of persuasive deception requires a higher degree of dishonesty, which may make it quite a different setting for individuals high in Dark Triad traits to navigate. It also is possible that this higher degree of dishonesty required would result in individuals high in DT traits being particularly skillful at this type of task, where they might be able to make use of more manipulative tactics.

Our study made use of a mixed student sample consisting of both business and psychology students. Business students were sought out in particular as a result of their higher levels of psychopathy, narcissism, and Machiavellianism that have been found in previous research (e.g., Hassall, Boduszek, & Dhingra, 2015; McClean & Jones, 1992; Westerman, Bergman, Bergman, & Daly, 2012). These higher levels of DT traits make them a particularly interesting sample to examine in relation to these malevolent traits. Further, the research paradigm chosen is a hiring-based decision-making task relevant to the business realm. In order to further understand the mechanisms behind deceptive success and failure, the participants’ language was analyzed.

1.4 Hypotheses

1.4.1 Hypothesis 1

Individuals who are high in Dark Triad traits previously have been found to possess an increased ability to negotiate FtF (Crossley et al., 2016). It also has been theorized that communicating with individuals high in certain DT traits (i.e., Machiavellianism) can result in
emotional arousal, making it more difficult for their opponent to persuade them (Fry, 1985). It is possible that this proposed emotional arousal could translate to the context of FtF deception as well. Further, it has been speculated that the nonverbal behaviour of psychopathic individuals may make them appear more confident or commanding, and paired with their more hostile use of language, this could be a particularly persuasive combination in person (Hancock et al., 2015; Klaver et al., 2007). I hypothesize that both psychopathy, and Machiavellianism (due to its close similarity to psychopathy) in this study will be related to increased success in FtF deceptions. However, narcissism, which lacks clearly established links with deception, is not hypothesized to result in increased deceptive success, partially due to the less exploitative and more egoistic nature associated with this trait.

1.4.2 Hypothesis 2

Conversely, my second hypothesis is that Dark Triad traits will be related to decreased success in CMC deceptions. Limited previous research suggests that individuals in general tend to become more aggressive online (Giordano et al., 2007), and that individuals low in DT traits in particular adopt a less passive linguistic style when online (i.e., fewer assent and positive emotion terms; Crossley et al., 2016). This may make it harder for individuals high in DT traits to succeed, opening the door for those lacking in these traits to do well at their deceptions. Walther (2012) suggested that the hostile and impersonal communication style individuals possess online in some contexts arises from the lack of socioemotional cues in CMC. I theorize that this will result in a more difficult environment for highly manipulative individuals to succeed in their deception online. In addition, without nonverbal behaviour present online, individuals must rely on their language alone, which for psychopaths in particular has been singled out as lacking in coherence and meaningfulness (Brinkley et al., 1999; de Almeida
Brites, 2015). All three Dark Triad traits are hypothesized to result in decreased success online, due to their proposed inability to take advantage of the unique factors seen in an online environment.

1.4.3 Hypothesis 3

Concerning language, I hypothesize that Dark Triad traits will be related to an increased use of linguistic dominance both FtF and online. However, this linguistic dominance will likely only serve as an advantage FtF when it can be paired with nonverbal behaviour. Psychopathic individuals in particular have been found to use more hostile language (Hancock et al., 2015), and the nature of the Dark Triad is generally congruent with a more manipulative and cutthroat approach in line with using dominant language (Paulhus & Williams, 2002). As previously mentioned, there is some research to suggest that individuals in general have the tendency to become more aggressive online, potentially making this strategy less useful in a CMC setting. When online, the use of linguistic dominance by individuals high in the DT may not yield the same power due to the environment providing their opponents with more anonymity and social distance, thereby shielding them from being persuaded.
CHAPTER 2 Methods

2.1 Participants

The study consisted of a sample of 204 participants ($M = 20.37$, $SD = 2.52$) who were students at a Canadian university. Males comprised 32.8% of participants, while females made up 67.2%. A further 53.9% of participants were students in the business program, while 46.1% were students from other faculties (mainly psychology). Ethnicity wise, 61.8% of participants identified as White, 23.5% as Asian, 2% Aboriginal, 1% Black, and 11.8% identified as “Other”. Participants received 1 course credit for participation in the study and were entered into a $500 raffle.

2.2 Procedure

The study followed, in part, the methodology from a previous study examining deception during a decision making task (Dunbar et al., 2014). This study used ‘persuasive deception’ as the main manipulation. Participants were randomly assigned to a dyad in either a FtF or CMC setting. Upon arrival, participants filled out informed consent forms and were told that they would be working with their partner on a decision-making task. Participants in the FtF dyads were in the same room, while those in the CMC condition were in separate rooms and never met FtF. Participants were given 30 minutes to complete the assigned decision-making task. Audio from the FtF condition was recorded, as well as transcripts from the CMC condition. Participants were informed of these recordings in the informed consent form.

The decision-making task began with participants being told that they should imagine they are ‘co-owners’ of a store and must hire three new people for three different positions (i.e., sales clerk, accountant, and manager). They were presented with three different resumes for each
position and told that they were to come to a joint agreement on which individual should be hired for each position. They also were told that the resumes had already been independently rated, such that there is a resume for each position representing the best candidate that should be chosen. They were told that if they were to pick out the best candidates for each of the three positions, they would both earn 10 raffle tickets for a $500 raffle to be held at the completion of the study. However, if they did not succeed in picking out all three of the best candidates, they would earn nothing, and consequently would have no chance at receiving the $500.

After picking the winning resume for the first position, each participant was presented with a short reading task. They would then choose the candidate for the second position. The deception occurred after they had chosen the candidates to be hired for the first two positions. They were told that they are each to complete another reading task before choosing the last candidate for the third position. One member of each dyad was randomly assigned as the deceiver and given secret instructions, instead of a reading task. This ensured that they were able to carefully read the secret instructions without raising any suspicion from their partner, who was completing an unrelated reading task at the same time. The instructions told the deceiver that they were to imagine that the weakest resume for the third position is that of a close friend and that they were to advocate for that particular resume without divulging this information to their partner. To assist their friend in receiving the job, the deceiver was told to attempt to convince their partner that the weakest resume is actually the best resume, and therefore should be chosen as the applicant to be hired. If the deceiver was able to succeed in convincing their partner to choose the weakest resume, they were told they would earn 50 tickets for the raffle. By doing so, they would be robbing their partner of the 10 tickets they would have earned had they chosen all three of the best resumes.
Once the participants had come to an agreement on all three positions, they wrote down their decisions and gave them to the researcher. They were then asked to fill out a number of measures associated with the Dark Triad (i.e. SRP-III, NPI, MACH-IV), as well as a number of demographic questions. Participants also completed an evaluation survey of their partner.

A delayed debriefing occurred to ensure that participants did not divulge information about the study’s deception to others. Upon the study’s completion, all participants were contacted and informed of the true nature of the study and it was explained to both participants why the deception occurred. Regardless of the outcome of the deception, each participant was given 1 ticket in the raffle to ensure that everyone had an equal opportunity to win the $500.

2.3 Materials

2.3.1 Self-Report Psychopathy Scale – III

The Self-Report Psychopathy Scale-III (SRP-III; Paulhus, Neumann, & Hare, in press) was administered to measure psychopathy. The questionnaire has four subscales comprised of callous affect, criminal tendencies, erratic lifestyle, and interpersonal manipulation. The SRP-III consists of 64 questions to be answered using a 5-point Likert scale ranging from “Strongly Disagree” to “Strongly Agree.” This measure was derived from the Psychopathy Checklist-Revised (PCL-R) and frequently is used to assess psychopathy in community samples (Mahmut, Menictas, Stevenson, & Homewood, 2011; Watt & Brooks, 2012).

2.3.2 Narcissistic Personality Inventory

The Narcissistic Personality Inventory (NPI) was used to measure narcissism. The NPI is the most commonly used tool to measure narcissism and has been shown to display good validity and reliability (Mullins & Kopelman, 1988; Raskin & Terry, 1988). It consists of 40 forced
choice questions that are added to create a total score of narcissism, with higher scores reflecting higher levels of the trait.

2.3.3 Machiavellianism – IV

To measure Machiavellianism, the MACH-IV was administered (Christie & Geis, 1970). The MACH-IV is the most widely used assessment tool to measure Machiavellianism and has demonstrated strong construct validity (Corral & Calvete, 2000; Panitz, 1989; Ramanaiah, Byravan, & Detwiler, 1994). It consists of 20 questions measured on a 7-point Likert-type scale ranging from “Strongly Agree” to “Strongly Disagree” and includes three subscales (Tactics, Morality, and Views).

2.3.4 Partner Evaluation Form

The partner evaluation form was created for the purposes of this study and consisted of five questions related to the respondent’s partner and an additional three questions related to the task itself. The partner questions were rated on a 5-point Likert scale, with 1 being the lowest and 5 being the highest. These questions asked the respondent to rate their partner on the following traits: persuasiveness, hostility, cooperation, dominance, and passivity. Respondents also were asked to rate their satisfaction with the decision-making task, the likelihood of them choosing to work with their partner again, and whether they believed they had made the correct choices during the task.

2.3.5 Language Variables

Participants in the FtF condition were audio-recorded, and these recordings were then transcribed, along with the Skype Chat transcriptions from the participants in the CMC condition. These transcripts were then coded for the Linguistic Inquiry Word Count (LIWC) program. Once entered into LIWC, categories were created to mirror the dominant/passive and
hostile/cooperative partner-evaluation questions posed to participants. Firstly, a dominance category was created based on the linguistic dominance category used in the Dunbar et al. (2014) study from which this study’s methodology was modeled. The dominance category includes the linguistic features of increased negations (e.g., no, never), increased exclusionary terms (e.g., but, without, exclude), increased word count, decreased assent terms (e.g., yes, ok), and decreased positive emotion (e.g., love, nice). High scores on this category reflect higher levels of linguistic dominance, while low scores on this category are reflective of linguistic passivity.

In addition to this category, a linguistic hostility category was created by adding certain linguistic features to the dominance category. Specifically, increased use of anger words (e.g., hate, annoyed), increased swear words (e.g., fuck, shit), and increased negative emotion words (e.g., nasty, ugly) were added to the dominance features, as they were hypothesized to be reflective of more hostile language. Higher scores on this category would indicate a higher degree of linguistic hostility, while lower scores would indicate a higher degree of cooperativeness. All linguistic features and categories were further broken down between “complete” and “third task only”. That is, participants’ language was examined in its entirety (all language used during the study), as well as for the language used during the third job applicant selection task when the deception occurred. This enabled a refined ability to hone in on the precise nature of the language used during deception.
CHAPTER 3 RESULTS

The three measures of personality (SRP-III, NPI, MACH-IV) were scored and correlations were assessed to examine their relationship to one another. Psychopathy and narcissism ($r = .54$, $p < .001$), narcissism and Machiavellianism ($r = .39$, $p < .001$), and psychopathy and Machiavellianism ($r = .66$, $p < .001$) all were significantly positively correlated. Based on the highest correlation of .66, it can be said that these measures tap into related but distinct personality constructs (Paulhus & Williams, 2002).

3.1 Preliminary Statistics

3.1.1 Dark Triad Scales

The reliability of the Dark Triad scales was assessed using Cronbach’s alpha. The commonly used cutoff for reliabilities is .7 (Nunnally & Bernstein, 1994). Reliabilities were .92, .86, and .78, for psychopathy, narcissism, and Machiavellianism, respectively.

The mean score of the SRP was 2.19 ($SD = .45$), with a range from 1.36 – 3.30. The mean score on the NPI was 15.02 ($SD = 7.21$), with a range from 2 – 34. Finally, the mean score for the MACH-IV was 3.59 ($SD = .68$), with a range from 1.8 – 5.75. Mean scores by gender, communication condition, deceiver/receiver roles, and faculty are further broken down in Table 1.

Dark Triad traits were examined to assess if there were any significant differences in scores between males and females, as well as between business students and students in other disciplines. Independent t-tests showed significant differences in gender for psychopathy, $t(202) = 7.08$, $p < .001$, narcissism, $t(202) = 4.73$, $p < .001$, and Machiavellianism, $t(202) = 3.51$, $p = .001$, with males consistently displaying higher levels of these traits compared to females. Further, when faculty is examined, psychopathy, $t(195.98) = 3.63$, $p = < .001$, narcissism,
Independent t-tests also were conducted to discern whether any differences in Dark Triad scores exist between participants in the communication conditions (i.e., FtF vs. CMC) and between participant role (i.e., the deceiver or receiver). No significant differences were found, indicating that levels of the Dark Triad traits were approximately equal across communication conditions and across participant roles.

Correlations between the three Dark Triad traits and demographic variables were examined. In addition, correlations were examined between the Dark Triad and a variety of partner-evaluation questions asked to each participant (e.g., “How persuasive/dominant/passive/hostile/cooperative did you find your partner to be?”). Significant correlations can be found in Table 2. As expected based on independent t-tests, all three Dark Triad components were significantly correlated with gender. Further, psychopathy was correlated with the hostile, cooperative, and persuasive partner-evaluation questions, indicating that individuals higher in psychopathy rated their partners as more hostile, less cooperative and less persuasive. When examined in relation to communication condition, these correlations only remained for the FtF setting, but not CMC. In addition, psychopathy was correlated with lower course averages. In regards to faculty, being an business student was significantly correlated with all three Dark Triad constructs, as well as higher partner hostility ratings, across both FtF and CMC.

Independent t-tests also were conducted to examine differences between gender, communication condition, deceiver/receiver role, and faculty in relation to partner evaluation questions. Gender was significantly related to the dominance question, indicating that females
rated their partners as significantly more dominant than did males, \( t(202) = -2.02, p = .045 \). With regard to communication condition, individuals in the FtF condition rated their partners as significantly more persuasive, \( t(193.3) = 2.16, p = .032 \), and significantly more cooperative, \( t(202) = 2.71, p = .007 \), compared to individuals in the CMC condition, and individuals in the CMC condition rated their partners as significantly more hostile than individuals in the FtF condition, \( t(179) = -3.35, p = .001 \), and specifically when they were being deceived, \( t(88.36) = -3.23, p = .002 \). Further, receivers, when compared to deceivers, rated their partners as more persuasive, \( t(202) = -3.23, p = .001 \), and more dominant, \( t(202) = -3.31, p = .001 \), while deceivers rated their partners as more passive, \( t(202) = 1.96, p = .05 \), compared to receivers.

With regard to faculty, business students rated their partners as more hostile when compared to students in other disciplines, \( t(195) = 3.58, p < .001 \). Further, narcissism was found to be related to believing one had made the correct choices in the decision-making task for deceivers, \( t(100) = 2.60, p = .011 \).

### 3.2 Main Analyses

As the dependent variable in the main analysis was categorical (i.e., deception did or did not occur), logistic regression analysis was used in order to examine whether Dark Triad traits and communication condition were associated with deceptive success. Forced entry method was used with the three Dark Triad traits and communication condition being entered into the model. Dark Triad traits were broken down between receiver DT traits and deceiver DT traits, so that the individual contribution of DT traits belonging to each participant role could be assessed. No significant results were found for either Dark Triad traits or communication condition. Results are presented below in Table 3.
3.3 Business Students

In line with recent research that indicates business students score higher than other groups of students, additional analyses were conducted to parse apart potential differences across faculty (business vs. other disciplines; Hassall et al., 2015; Krick et al., 2016; McClean & Jones, 1992; Westerman et al., 2012; Wilson & McCarthy, 2011). Business students displayed higher levels of Dark Triad traits, as evidenced by the previously described independent t-tests and correlations, and previous research. Firstly, one-way ANOVAs were conducted to examine the relationship between faculty, communication condition, and deceptive success/failure, and the deceiver’s Dark Triad levels. It was found that business student deceivers in the CMC condition who were unable to successfully deceive their partners had higher levels of both psychopathy, $F(1, 29) = 6.55, p = .016$, and narcissism, $F(1, 29) = 6.88, p = .014$ (See Figures 1 and 2). Further, Machiavellianism approached significance, $F(1, 29) = 3.95, p = .056$, showing a similar trend. A logistic regression analysis was conducted based on these results. First, the interaction between communication condition and faculty was entered as predictor, with the interactions between psychopathy, narcissism, Machiavellianism, and faculty being entered as a second block. Results for both models are presented in Table 4 below. When the interaction between communication condition and faculty was considered independently, the model was significant, correctly predicting 38.2% above the baseline model. However, when the interactions between faculty and Dark Triad traits was added to the model, it was no longer significant, predicting 28.4% above the baseline model.

Next a second logistic regression was run using data from only the business participants. In this model, communication condition and its interaction with both deceiver psychopathy and deceiver narcissism scores were entered as predictors. Gender also was entered as a covariate as
the business sample had a higher percentage of males (i.e., 47.7% male, 52.7% female) compared to the other disciplines (i.e., 16% male, 84% female). Communication condition and its interaction with deceiver psychopathy and narcissism scores were found to significantly predict deception outcomes, while gender was found to be non significant. The model correctly predicted successes and failures 25.9% above the baseline model. Results are shown below in Table 5.

3.5 Language Analyses

3.5.1 Main Language Analyses

As with the prior analyses, logistic regression was used to examine the relationship between linguistic dominance and hostility, and deceptive/success failure. As the linguistic dominance and hostility categories are related, separate analyses were conducted to avoid any issues of multicollinearity. No significant results were found for either linguistic dominance or hostility, complete or third-task only. See Table 5 for a breakdown of results.

3.5.2 Additional Language Statistics

Although no logistic regression results were found for linguistic dominance and hostility indicating differences between deceptive success and failure, intriguing results emerged when these categories were examined further. Correlations were conducted to examine the relationship between the Dark Triad traits and the linguistic dominance and hostility categories (both complete and third task only). Linguistic dominance and hostility were not significantly correlated with either psychopathy or narcissism for either deceivers or receivers. However, there were significant correlations between third-task only dominance ($r = .22, p = .028$) and third-task only hostility ($r = .22, p = .028$), indicating that higher scores on Machiavellianism are related to higher linguistic dominance and hostility for receivers. Two regression analyses also were
conducted to predict linguistic dominance and hostility from psychopathy, narcissism, and Machiavellianism. No significant results were found. Further correlations were conducted between linguistic dominance/hostility and the partner-evaluation questions. Third-task only dominance and hostility were positively correlated with finding one’s partner to be less cooperative ($r = -0.200, p = .005$), as well as being less satisfied with the hiring decisions they made ($r = 0.153, p = .033$), and less likely to choose to work with their partner again ($r = -0.147, p = .040$).

Independent $t$-tests were conducted to examine whether there were any differences between gender, communication condition, deceiver/receiver roles, or faculty in terms of linguistic dominance and hostility. No significant findings were found for gender, deceiver/receiver roles, or faculty. However, communication conditions were found to be significantly different in terms of linguistic dominance, both for the complete study, $t(109.77) = 6.92, p < .001$, and third-task only, $t(114.11) = 5.15, p < .001$, and in terms of linguistic hostility, both for the complete study, $t(109.78) = 6.92, p < .001$, and third-task only, $t(114.15) = 5.15, p < .001$, with individuals in the FtF condition being significantly higher on all of these categories compared to CMC participants, regardless of whether they were the deceiver or receiver.

Independent $t$-tests also were conducted to examine the relationship between deceptive success/failure and linguistic dominance and hostility. Although no significant results were found, both third-task only dominance, $t(63.32) = -1.91, p = .054$, and hostility, $t(61.36) = -1.92, p = .053$ approached significance, indicating a trend toward the receiver’s linguistic dominance and hostility increasing when they were not successfully deceived.

In addition to examining linguistic dominance and hostility, certain individual linguistic features from LIWC also were considered. LIWC 2015 introduced a set of four new ‘summary
variables’ based on research done by Pennebaker, Boyd, Jordan, Blackburn, and Chung (2015). These four variables (analytical thinking, clout, authentic, and emotional tone) are intended to reflect the style of the speaker. Both psychopathy ($r = -.157, p = .028$) and Machiavellianism ($r = -.159, p = .026$) scores were found to be negatively correlated with the authentic variable. Higher scores on this variable reflect a more honest and open form of communication, while lower scores indicate a more guarded style of discourse. Further, two simple linear regression analyses were conducted to predict authenticity based on psychopathy and Machiavellianism scores. A significant regression equation was found, $F(1, 195) = 4.89, p = .028 \left( R^2 = .025 \right)$ for psychopathy, and for Machiavellianism, $F(1, 195) = 5.02, p = .026 \left( R^2 = .025 \right)$, indicating that psychopathy and Machiavellianism significantly predict linguistic authenticity.
CHAPTER 4 Discussion

This study was the first of my knowledge to examine Dark Triad traits in the context of face-to-face and computer-mediated deception. In contrast to what was found in Crossley et al.’s (2016) negotiation study (and to my first and second hypotheses), Dark Triad traits were not found to be related to deceptive success either FtF or in CMC when looking at the overall sample. So far, research has been mixed regarding whether Dark Triad traits are associated with deceptive success, with some finding no association at all (Wright et al., 2015) and other research suggesting psychopathy and Machiavellianism may be related to skillful manipulation (Book et al., 2015; Geis & Moon, 1981; Klaver et al., 2007). However, as business students, as well as corporate professionals in general, have been found to possess higher levels of Dark Triad traits in previous research (e.g., Babiak, Neumann, & Hare, 2010; Hassall et al., 2015; McClean & Jones, 1992; Westerman et al., 2012), these participants were examined further to ascertain whether different results would emerge based on their increased scores. Interestingly, when the analyses were confined to the business student sample, findings did emerge that paralleled the previous negotiation findings.

The maximum scores that can be obtained for the SRP-III, NPI, and MACH-IV are 5, 40, and 7, respectively. With the exception of Machiavellianism, which was in the average range, mean scores for the overall sample (2.19, 15.02, and 3.59 for SRP-III, NPI, and MACH-IV) fell within the lower range of possible scores. These scores are comparable to previous research using similar community samples (e.g., Black, Woodworth, & Porter, 2014; Sabouri et al., 2016). Although business student mean scores were significantly higher than other faculties at 2.30 for SRP-III, 16.65 for NPI, and 3.72 for MACH-IV, these scores are still not indicative of the higher possible range of Dark Triad scores. That intriguing findings still emerged with these relatively
low to mid range scores is indicative of the explanatory power of personality differences when examining behaviour.

Participants’ responses to the partner-evaluation questions may help shed light on the findings of the main analyses. Face-to-face participants were found to rate their partners as more persuasive and cooperative, whereas CMC participants rated their partners as more hostile. These findings lend credence to Walther’s (2012) theory of online communication, which he theorized resulted in more hostile communication as a result of the lack of socioemotional cues present in this setting. Notably, being higher in psychopathy was correlated with finding one’s partner to be more hostile, less cooperative, and less persuasive, but only in the FtF setting. This is in direct contrast to what was found for participants overall. Previous research has found that individuals high in psychopathy have a tendency to adopt a “negative other” heuristic whereby they judge everyone as being more disagreeable (Black et al., 2014). For individuals higher in psychopathy, face-to-face communication may actually result in an environment less conducive to making personable connections, though not necessarily indicative of decreased deceptive success.

When the sample was restricted to only those with the highest level of DT traits, results paralleled in part what has been found with negotiation. Why would findings emerge with the business sample but not with the overall sample? The answer may lie in the characteristics that define business students. Gender was considered a possible factor, due to the business sample possessing a higher percentage of males (47%, compared to 16% in the other faculty sample). However, when examined as covariate, gender was not significant. Business students were unique in other ways; for example, they rated their opponents as higher in hostility both in FtF and CMC settings. This “negative other” heuristic, which has been attributed to the DT as well
(Black et al., 2014), may help explain why business students were not able to see the same level of success online as they were FtF, when they were higher in psychopathy and narcissism.

In addition to what was found with psychopathy, business students also were found to rate their partners as more hostile, both FtF and online, compared to students in other faculties. This difference in perception may be an important one, as the results suggest that, amongst business students, possessing a higher level of certain Dark Triad traits serves as a disadvantage when trying to deceive others in an online context. As was found with negotiation, the online environment in which individuals are found to become more aggressive and less passive may make it harder for individuals with Dark Triad traits to succeed. In fact, individuals communicating online in the study were found to rate their partners as more hostile when they were being deceived, suggesting that individuals in this setting may be more vigilant and alert to cues of being taken advantage of. I suggest that a ‘text-based interpersonal manipulation effect’ (TIME) is at work, resulting in impairment for highly manipulative individuals attempting to navigate an online environment in which individuals have become more impervious to persuasive tactics. TIME is in line with Walther’s theory of online communication, as well as Poole’s theory of media richness, which suggests that environments in which fewer cues can be conveyed result in fewer social connections. With respect to individuals who are known to be manipulative, such as those individuals high in Dark Triad traits, the online environment appears to impair the ability to successfully persuade others.

The lack of success exhibited by individuals high in psychopathy and narcissism cannot be explained by TIME entirely. Psychopathy and Machiavellianism were both found to be related to using a less authentic style of speaking (e.g., divulging less information), which, when combined with their nonverbal behaviour, may have worked in their favour FtF, but served as a
disadvantage online when not paired with their nonverbal behaviour. Lacking authenticity in speech results in more guarded and reserved language. For individuals high in psychopathy, this guarded style of speech may, in part, be a result of their tendency to view others as more hostile. Although Machiavellianism was not associated with finding one’s opponent more hostile, it is a trait that is commonly defined by cynicism, which may explain why these individuals would use a less open style of speech when communicating with strangers (Paulhus & Williams, 2002).

These findings yield partial support to hypothesis 2, and provide more evidence that at least certain dark personality traits are not ideal for online communication in which an individual is attempting to persuade another. However, unlike with negotiation, individuals high in Dark Triad traits were not found to perform better FtF than online. It is possible that although individuals with dark traits enjoy lying and lie more often than others, they may not actually be better at it than others (Baughman et al., 2012). Alternatively, it may be that higher stakes and more incentive are needed for these individuals to be sufficiently motivated to succeed, or that their success would be better suited to other types of deception (e.g., deception that relies more on outright lying than persuasion). Future research also should make use of samples with the highest possible level of Dark Triad traits (e.g., offenders, corporate executives) to discern whether results differ when dealing with those at the far end of the DT spectrum.

Narcissism was not found to be associated with authenticity, and in fact was not related to any other aspect of language or partner-evaluations examined. Therefore, the mechanisms that account for narcissism’s relation to decreased success for business students in the online setting require further understanding. The practice of self-deception, which has been linked to narcissism, also has been associated with decreased deceptive credibility in previous research (Paulhus & John, 1998; Wright et al., 2015). Self-deception has been described as a strategy
whereby individuals diminish the amount of deceptive cue leakage by lying to themselves (von Hippel, 2013). Results emerged that indicate that deceivers higher in narcissism were more likely to believe they had made the correct choices in the task (i.e., that they chose the best resume for all three positions), suggesting that these individuals may have been in engaging in self-deception. This self-deception may be one factor that accounts for narcissism’s relationship with decreased success.

With reference to the third hypothesis, I did not find support for linguistic dominance being related to Dark Triad traits, with the exception that Machiavellianism was correlated with using more linguistic dominance (and hostility) for individuals who were being deceived. This would indicate that these individuals are becoming more forceful in their use of language as a result of the attempt by their partner to deceive them. However, the regression analyses yielded non-significant results, suggesting that although Machiavellianism and linguistic dominance covary, it is not a direct relationship. Further, linguistic dominance was not related to increased success, either FtF or online, though it was associated with increased use in the FtF setting. This finding is somewhat surprising given previous research that has found individuals become more aggressive in their online communications (Giordano et al., 2007; Walther; 2012). Despite the increased use of linguistic dominance and hostility when FtF, as previously discussed, individuals in the CMC setting rated their partners as more hostile than those FtF. It is possible that the use of linguistic dominance and hostility may not come across as hostile to others, and may actually help foster cooperation when FtF, as evidenced by individuals rating others are more cooperative in this setting. This could in part result from the use of confident or commanding nonverbal behaviour, which has been theorized to contribute to psychopathic individuals’ persuasion (Klaver et al., 2007). Further, the use of linguistic dominance and
hostility during the deceptive task was associated with finding one’s partner to be less cooperative, being less satisfied with the interaction overall, and being less likely to want to work with one’s partner again. However, there also was a trend that indicated individuals being less likely to be deceived when they used more linguistic dominance and hostility during the deceptive task. The use of this dominant language may act as a protective feature when being deceived, although individuals end up less satisfied with the encounter overall. Further, linguistic dominance and hostility may not actually come across as particularly hostile or abrasive as evidenced by its increased use FtF, where individuals are generally rated as more cooperative.

Although fascinating results emerged in regard to linguistic dominance, it is possible that the strategies that help individuals succeed in deception may be subtler. Interestingly, the category of ‘Clout’, which is indicative of confident and proficient language, was not related to the Dark Triad. Psychopathy has been associated with incoherent and nonfluent language (Brinkley et al., 1999; Hancock et al., 2013), and it is possible that all three components of the Dark Triad rely more heavily on nonverbal aspects of behaviour, rather than their language or speech to compel others. In addition, ingratiation, warmth, or framing outcomes as advantageous to both parties may be strategies that can help an individual succeed without relying on dominance or hostility to persuade. These types of strategies require further examination, and should be investigated from the perspective of a variety of linguistic software, in addition to LIWC, and open-ended questions that tap into the deceiver’s strategies.

4.1 Conclusion

The current study suggests that both communication medium and personality are important factors for determining an individual’s success at deception, and that interactions exist between the two that affect one’s ability to deceive. These findings provide more evidence that at
least in certain contexts dark personality traits serve as a disadvantage when attempting to manipulate someone online and point to possible linguistic differences that may help explain this. For example, the less authentic and open language associated with psychopathy may not hinder them FtF when paired with nonverbal behaviour, but may be a detriment online where they have nothing else to rely upon. Though narcissism was not associated with differences in language, deceivers higher in narcissism were more likely to believe they had made the correct choices in selecting the resumes, even when they had not, indicating that they may have been engaging in self-deception to some degree. Lastly, Machiavellianism’s relationship to decreased success in the online condition approached significance, demonstrating the same relationship to deceptive success as psychopathy and narcissism. Its label as the ‘successful’ version of psychopathy may help explain why this association was not stronger in that individuals high in Machiavellianism may be less impulsive and more cautious with their approach to deception, resulting in slightly better outcomes.

Future research should specifically examine the potential role of nonverbal behaviour to assess whether it has any influence on deceptive outcomes for individuals with varying levels of Dark Triad traits. Other aspects of language, such as ingratiation, also should be considered to better understand the nature of this relationship. In summary, the present study aimed to provide a deeper investigation of the Dark Triad as it relates to manipulation in FtF and CMC contexts and revealed that at least certain dark personality traits result in decreased deceptive success in online environments for those individuals highest in these traits. These results have implications for the business realm, and the usefulness of online communication in situations where one could conceivably be deceived. Individuals who would like to avoid being manipulated may wish to make use of text-based methods of communication, where the interpersonally manipulative have
demonstrated strong defects. These results also may point to new ways of identifying individuals with higher levels of dark personality traits, such as honing in on their language, which for psychopathy and Machiavellianism lacks authenticity. The proposed TIME offers a new and exciting perspective on how the Dark Triad operates across communication mediums and should be considered in a variety of different settings (e.g., video-based online communication) in the future.
References


Table 1

Means, Medians, Standard Deviations, and Ranges for Dark Triad Scores for the Overall Sample, Males, and Females, Communication Conditions, Deceiver/Receiver Roles, and Faculty Sample | SRP-III | NPI | MACH-IV |
--- | --- | --- | --- |
Overall $M, Md (SD)$ | 2.19, 2.14 (.45) | 15.02, 14.5 (7.21) | 3.59, 3.6 (.68) |
Range | 1.36 – 3.30 | 2 – 34 | 1.8 – 5.75 |
Males $M, Md (SD)$ | 2.49, 2.47 (.40) | 18.33, 17 (7.04) | 3.82, 3.80 (.72) |
Range | 1.53 – 3.17 | 4 – 33 | 1.8 – 5.6 |
Females $M, Md (SD)$ | 2.05, 2.05 (.41) | 13.49, 13 (6.77) | 3.47, 3.50 (.63) |
Range | 1.36 – 3.30 | 2 – 34 | 2.2 – 5.75 |
Face-to-Face $M, Md (SD)$ | 2.22, 2.16 (.44) | 15.45, 15 (6.79) | 3.64, 3.60 (.69) |
Range | 1.39 – 3.30 | 4 – 33 | 2.2 – 5.75 |
Computer-Mediated $M, Md (SD)$ | 2.17, 2.11 (.46) | 14.72, 14 (7.61) | 3.54, 3.58 (.67) |
Range | 1.36 – 3.28 | 2 – 34 | 1.8 – 5.6 |
Deceiver $M, Md (SD)$ | 2.21, 2.09 (.49) | 14.79, 14 (7.28) | 3.62, 3.60 (.70) |
Range | 1.36 – 3.28 | 2 – 33 | 1.8 – 5.6 |
Receiver $M, Md (SD)$ | 2.18, 2.19 (.41) | 15.36, 15 (7.16) | 3.56, 3.55 (.66) |
Range | 1.38 – 3.30 | 3 – 34 | 2.4 – 5.75 |
Business $M, Md (SD)$ | 2.30, 2.29 (.43) | 16.65, 16 (7.55) | 3.72, 3.75 (.66) |
Range | 1.47 – 3.28 | 3 – 32 | 1.8 – 5.6 |
Other Faculty $M, Md (SD)$ | 2.07, 2.05 (.44) | 13.24, 13 (6.35) | 3.43, 3.35 (.68) |
Range | 1.36 – 3.3 | 2 – 34 | 2.2 – 5.75 |
### Table 2

*Pearson Bivariate Correlations Between Primary Study Variables*

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. SRP-III</td>
<td>1</td>
<td>.54**</td>
<td>.66**</td>
<td>-.45**</td>
<td>-.14*</td>
<td>.15*</td>
<td>-.14*</td>
<td>-.25**</td>
<td>-.21*</td>
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<tr>
<td>2. NPI</td>
<td>1</td>
<td>.39**</td>
<td>-.32**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-.24**</td>
<td></td>
</tr>
<tr>
<td>3. MACH-IV</td>
<td>1</td>
<td>-.24**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-.22*</td>
<td></td>
</tr>
<tr>
<td>4. Gender</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Cooperative</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Hostile</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-.238**</td>
<td></td>
<td></td>
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<tr>
<td>7. Persuasive</td>
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<td></td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>8. Faculty</td>
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<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Course Average</td>
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<td></td>
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<td></td>
</tr>
</tbody>
</table>

SRP-III = Self-Report Psychopathy Scale, NPI = Narcissistic Personality Inventory, MACH-IV = Machiavellian Scale

*significant at the $p = .05$ level; ** significant at the $p = .001$ level
### Table 3

*Logistic Regression Output for Dark Triad Traits and Communication Condition*

<table>
<thead>
<tr>
<th></th>
<th>B(SE)</th>
<th>Wald</th>
<th>p</th>
<th>Exp(B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Receiver Psychopathy</td>
<td>-.051(.718)</td>
<td>.005</td>
<td>.944</td>
<td>.951</td>
</tr>
<tr>
<td>Deceiver Psychopathy</td>
<td>-.253(.659)</td>
<td>.148</td>
<td>.701</td>
<td>.776</td>
</tr>
<tr>
<td>Receiver Narcissism</td>
<td>.016(.033)</td>
<td>.240</td>
<td>.624</td>
<td>1.02</td>
</tr>
<tr>
<td>Deceiver Narcissism</td>
<td>.025(.035)</td>
<td>.506</td>
<td>.477</td>
<td>1.03</td>
</tr>
<tr>
<td>Receiver Machiavellianism</td>
<td>-.211(.409)</td>
<td>.265</td>
<td>.607</td>
<td>.810</td>
</tr>
<tr>
<td>Deceiver Machiavellianism</td>
<td>.377(.410)</td>
<td>.848</td>
<td>.357</td>
<td>1.46</td>
</tr>
<tr>
<td>Communication Condition</td>
<td>-.477(.412)</td>
<td>1.34</td>
<td>.248</td>
<td>1.17</td>
</tr>
<tr>
<td>Constant</td>
<td>.153(1.72)</td>
<td>.008</td>
<td>.929</td>
<td>1.17</td>
</tr>
</tbody>
</table>

*Note. $R^2=.038$(Cox-Snell), .051(Nagelkerke)*
Table 4

Logistic Regression Output for Dark Triad Traits and Communication Condition

<table>
<thead>
<tr>
<th>Model 1</th>
<th>B(SE)</th>
<th>Wald</th>
<th>p</th>
<th>Exp(B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication Condition*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Faculty</td>
<td>1.32(.526)</td>
<td>6.30</td>
<td>.012</td>
<td>3.75</td>
</tr>
<tr>
<td>Constant</td>
<td>-.280(.227)</td>
<td>1.52</td>
<td>.217</td>
<td>.756</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Model 2</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication Condition</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>*Faculty</td>
<td>1.05(.619)</td>
<td>2.88</td>
<td>.090</td>
<td>2.86</td>
</tr>
<tr>
<td>Psychopathy*Faculty</td>
<td>-.110(.939)</td>
<td>.014</td>
<td>.907</td>
<td>.896</td>
</tr>
<tr>
<td>Narcissism*Faculty</td>
<td>.074(.050)</td>
<td>2.17</td>
<td>.140</td>
<td>1.08</td>
</tr>
<tr>
<td>Machiavellianism*Faculty</td>
<td>-.116(.526)</td>
<td>.049</td>
<td>.825</td>
<td>.890</td>
</tr>
<tr>
<td>Constant</td>
<td>-.477(.293)</td>
<td>2.65</td>
<td>.103</td>
<td>.621</td>
</tr>
</tbody>
</table>

Note. $R^2=.103$(Cox-Snell), .137(Nagelkerke)
Table 5
Logistic Regression Output for Dark Triad Traits and Communication Condition for Business students only

<table>
<thead>
<tr>
<th>Model 1</th>
<th>B(SE)</th>
<th>Wald</th>
<th>p</th>
<th>Exp(B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication Condition</td>
<td>-1.815(.705)</td>
<td>7.14</td>
<td>.010</td>
<td>.163</td>
</tr>
<tr>
<td>Communication Condition*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deceiver SRP*Deceiver NPI</td>
<td>.018(.008)</td>
<td>4.86</td>
<td>.028</td>
<td>1.02</td>
</tr>
<tr>
<td>Gender</td>
<td>-.417(.625)</td>
<td>.445</td>
<td>.505</td>
<td>.659</td>
</tr>
<tr>
<td>Constant</td>
<td>2.81(1.35)</td>
<td>4.28</td>
<td>.038</td>
<td>16.55</td>
</tr>
</tbody>
</table>

*Note. $R^2=.177$(Cox-Snell), .239(Nagelkerke)
**Table 6**

*Logistic Regression Output for Linguistic Dominance and Hostility*

<table>
<thead>
<tr>
<th></th>
<th>$B(\text{SE})$</th>
<th>Wald</th>
<th>$p$</th>
<th>$\text{Exp}(B)$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dominance Full</td>
<td>.001(.001)</td>
<td>2.40</td>
<td>.121</td>
<td>1.001</td>
</tr>
<tr>
<td>Dominance 3</td>
<td>.003(.002)</td>
<td>3.05</td>
<td>.081</td>
<td>1.003</td>
</tr>
<tr>
<td>Hostility Full</td>
<td>.001(.001)</td>
<td>2.40</td>
<td>.121</td>
<td>1.001</td>
</tr>
<tr>
<td>Hostility 3</td>
<td>.003(.002)</td>
<td>3.07</td>
<td>.080</td>
<td>1.003</td>
</tr>
</tbody>
</table>
Figure 1

Psychopathy Level by Deceptive Success Amongst Business Deceivers

Level of Trait

Successful Non-Successful

Deceptive Success
Figure 2