Seeing through crocodile tears? Sex-specific associations between the Dark Triad traits and lie detection accuracy

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ABSTRACT

Although overall people are poor at lie detection, the accuracy depends on the situation (e.g., high versus low-stakes), as well as the characteristics of the person detecting the lie. In an on-line experiment ($N = 347$), we explored the relationship between the Dark Triad (i.e., Machiavellianism, narcissism, and psychopathy), and accuracy in detecting lies in high-stakes, emotional TV appeals. The participants filled in a 27-item Dark Triad measure, and watched 20 video-clips of people appealing to find a missing person, half of whom had murdered the person they were appealing to find. In both cross-correlational and regression analyses, Machiavellianism had a significant positive relationship with accuracy in women, and narcissism had a significant negative relationship with accuracy in men. Our results suggest that the Dark Triad is a relevant individual difference affecting lie detection, but it has different correlates for men and women.

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1. Introduction

Although overall people perform poorly when detecting lies (Bond & DePaulo, 2006), research has shown that certain conditions have an association with increased deception detection. For example, high-stakes (e.g., Lyons, Healy, & Bruno, 2013) and emotional (e.g., Warren, Schertler, & Bull, 2009) lies may be easier to detect than low-stakes lies, non-emotional lies. High-stakes emotional lies, such as those that involve public appeals in order to find a missing relative, are linked to faking emotions (ten Brinke & Porter, 2012; Wright Whelan, Wagstaff, & Wheatcroft, 2015), which could relate to increased detection. Indeed, individuals who use faked emotions as a cue to detecting lies in high stakes public appeals reach a higher accuracy (Shaw & Lyons, 2017). Although it is apparent that high stakes and emotional situations may be the key to successful lie detection, not many studies have investigated whether there are individual differences that could be related to deception detection in these contexts. This is something we intend to address in the present study.

Research has suggested that there are at least two individual differences relevant in detecting lies. First, high emotional intelligence could hinder lie detection (Baker, ten Brinke, & Porter, 2013), possibly via increased emotive truth bias. Second, there is a positive link between lie production and detection, indicating that those who lie more are better at detecting when others are deceitful (Wright, Berry, & Bird, 2012). It is possible that personality traits that relate to both low emotional

intelligence/empathy and high lie production confer advantage in detecting emotional lies. The Dark Triad of personality (i.e., narcissism, Machiavellianism, and psychopathy) is a personality constellation related to both (Baughman, Jonason, Lyons, & Vernon, 2014; Jonason, Lyons, Baughman, & Vernon, 2014; Jonason, Lyons, Bethell, & Ross, 2013). Individuals high in these traits are selfish and cold-hearted (Jones & Figueredo, 2013), with unique profiles associated with each trait. Evolutionary behavioural scientists have suggested that manipulative traits could form an adaptive "cheater strategy", aiming to reap immediate rewards from the environment without paying any costs (Mealey, 1995).

The Dark Triad traits have some common, and some unique associations with lying, manipulation, and empathy. Machiavellianism is connected to strategic manipulation of others (Abell, Brewer, Qualter, & Austin, 2016; Brewer, Abell, & Lyons, 2016), and individuals high in this trait produce more high-stakes (Azizli et al., 2016) and white lies (Jonason et al., 2014). Both narcissism and Machiavellianism link to a self-perception of oneself as being a good liar (Giammarco, Atkinson, Baughman, Veselka, & Vernon, 2013; Jonason et al., 2014). Individuals high in psychopathy feel positive emotions when telling lies (Baughman et al., 2014), and tell lies for no particular reason (Jonason et al., 2014). Overall, Machiavellianism and psychopathy are associated with more deceitfulness than narcissism (Jonason et al., 2014), and would be expected to have a relationship with increased lie detection ability.

With regards to empathy, some studies have found that all Dark Triad traits have an association with lower global empathy (e.g., Jonason et al., 2013), whereas others have suggested that narcissism may be related to no deficits in cognitive empathy, and a higher affective empathy (Jonason & Krause, 2013). As empathy/emotional

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intelligence has been found to be a negative predictor of lie detection (Baker et al., 2013), we predict that those high in narcissism perform poorer when detecting high-stakes lies.

To date, there have only been a handful of studies investigating the Dark Triad traits and lie detection, and the findings are inconsistent. For example, Wright, Berry, Catmur, and Bird (2015) found no relationship between lie detection and any of the Dark Triad traits, shadowed by similar findings in a study on psychopathy (Martin & Leach, 2013). However, these studies were low-stakes laboratory experiments, with relatively little emotional content to the lies. A study that explored the accuracy of detecting high-stakes emotional lies found that men high in primary psychopathy (i.e., coldness and callousness) performed better (Lyons et al., 2013), which could be linked to an increased ability to detect micro-expressions of sadness (Demetrioff, Porter, & Baker, 2016). However, these studies have looked at psychopathy without the two other Dark Triad traits, and it is possible that the associations with lie detection are driven by the common variance that psychopathy shares with the other two traits.

We were also interested in exploring sex differences with regards to deception detection and the Dark Triad. Previous research has found that women perform better than men in detecting high-stakes lies, and psychopathy sub-types have opposing effects on lie detection depending on the sex of the participant (Lyons et al., 2013). Further, relationship between empathy and the Dark Triad depend on the sex of the individual, where empathy deficits are localised to primary psychopathy in men, and narcissism in women (Jonason et al., 2013). As empathy and emotional intelligence could have an impact on lie detection (Baker et al., 2013), it is important to investigate the sex differences between accuracy and Dark Triad as well. However, there is not enough previous literature to make specific predictions for each sex, and therefore, the analyses on sex differences in this study are exploratory in nature.

In summary, the present study is unique in the following ways. First, we add to the existing literature by looking at lie detection and the three Dark Triad traits together, rather than investigating the traits in isolation from each other. Second, we utilise high-stakes emotional TV appeals, which has not been investigated together with the Dark Triad in previous studies. Third, we take into account possible sex differences between personality and ability to detect lies. Based on previous literature on empathy and lie detection (Baker et al., 2013), lie production and lie detection (e.g., Wright et al., 2012), and lie production, empathy, and the Dark Triad (e.g., Jonason & Krause, 2013; Jonason et al., 2014), we expect that those high on narcissism are poorer, and those high on psychopathy and Machiavellianism are more skilful at detecting lies.

2. Methods

2.1. Participants and procedure

The final sample consisted of 347 volunteers (age range 17–80, Mean age = 25.78, SD = 13.40; 98 men), who entered an on-line experiment on "Personality and lie detection". The survey link was advertised to first year psychology students who could participate in exchange of course credits, as well as to the social networks of the researchers and student research assistants. Most participants (n = 320) were from the United Kingdom. On entering the survey, participants were presented with an on-line information sheet, and after giving their consent, they were directed to a page containing the Dark Triad questionnaire, followed by 20 video clips, randomised for lies and truths.

2.2. Materials

The Short Dark Triad (SD-3; Jones & Paulhus, 2014) consists of 27 Likert-scale questions (1 = *disagree strongly*, 5 = *agree strongly*), nine for each trait. Machiavellianism was measured with questions such as "It is not wise to tell your secrets", and "I like to use clever manipulation

to get my way" (Cronbach's alpha = 0.75). Psychopathy items included "I enjoy having sex with people I hardly know", and "People who mess with me always regret it" (α = 0.55). Narcissism items include statements such as "I know that I am special because everybody keeps telling me so", and "People see me as a natural leader" (α = 0.45). The low internal reliability for narcissism and psychopathy are of concern, and the results for these two traits should be treated with caution.

The video clips consisted of 20 short (10–30 s; M = 0.19 s for both lies and truths) recordings from international news websites where people were appealing in front of TV cameras in order to find a missing person. In half of the cases, the individual making the appeal had murdered the person, and convicted for it later based on convincing evidence. In half of the clips, the missing person was found, or someone else was convicted for the murder (see Shaw & Lyons, 2017). For the lie clips, 6 of the liars were men, and 4 were women. For the truths, 4 of the truth tellers were men, and 6 were women. After each clip, participants were asked to indicate whether the person is lying or telling the truth (lie/truth), and if they were familiar with the case (yes/no). Participants who were familiar with one or more cases were dropped from the analyses, resulting in a final sample of 347.

2.3. Data analysis

We used the signal detection theory for estimating bias-free deception detection accuracy (Higham, Perfect, & Bruno, 2009). First, we computed a hit rate (i.e., the probability of correctly identifying a liar), and a false alarm rate (i.e., the probability of incorrectly identifying a non-liar as a liar). We then applied the Snodgrass and Corwin (1988) correction to these rates in order to calculate a non-biased measure of lie detection accuracy (d'), as well as response bias (c), which indicates the likelihood of judging people as liars even when they are telling the truth.

3. Results

In Table 1, we present descriptive statistics for the whole sample. We also analysed the results for sex differences, which were found only for Machiavellianism and psychopathy, where men scored significantly higher than women (please contact the first author for full results). In Table 1, we also present Pearson's cross-correlations separately for each sex. Machiavellianism had a significant, positive association with accuracy in women, but not in men. The differences in the correlations in men and women for Machiavellianism and accuracy were not significant (Fisher's z = 1.17, p > 0.05). Narcissism had a significant, negative correlation with accuracy in men, but not in women. These correlations were significantly different between the sexes (Fisher's z = 2.27, p < 0.01).

Because age had a significant, negative correlation with all the Dark Triad traits (Machiavellianism r = −0.28, p < 0.001; narcissism r = −16, p < 0.01, psychopathy r = −0.40, p < 0.001) as well as a positive correlation with lie detection accuracy (r = 0.12, p < 0.05), age was entered as a control variable in subsequent regression analyses.

We run a linear multiple regression separately for the sexes, where accuracy (d') was entered as the outcome variable, and age, the Dark

Table 1
Descriptive Statistics for the whole sample, and cross-correlations between the Dark Triad and lie detection accuracy, bias, and confidence (men are below, and women above the diagonal).

	Mean (SD)	1	2	3	4	5
1. Psychopathy	2.46 (0.48)	–	0.37**	0.57**	−0.01	−0.07
2. Narcissism	2.86 (0.44)	0.30**	–	0.41**	0.05	0.01
3. Machiavellianism	2.91 (0.62)	0.55**	0.25*	–	0.10**	−0.02
4. d′	0.48 (0.61)	0.03	−0.22*	0.03	–	−0.02
5. c′	0.03 (0.37)	0.06	0.09	−0.05	−0.02	–

* p < 0.05.
** p < 0.01.