



## Feeling me, feeling you? Links between the Dark Triad and internal body awareness



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### ABSTRACT

Despite a rapid increase of interest in the Dark Triad of personality (i.e., psychopathy, narcissism and Machiavellianism), very little research has focused on links between the Dark Triad and internal body awareness (i.e., interoception). In an on-line study ( $N = 323$ ), we investigated the relationship between the Dark Triad and different facets of interoception, such as awareness and trust in body sensations, the capacity to regulate attention, and an awareness of mind–body integration. When we controlled for shared variance between the Dark Triad traits, narcissism emerged as a positive predictor for all but one facet of interoception. Primary psychopathy was a positive predictor of attention regulation, whereas secondary psychopathy was a negative predictor of awareness of body sensation and attention regulation. Machiavellianism emerged as a negative predictor of trusting body sensations. The findings are discussed within an evolutionary framework.

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### 1. Introduction

Awareness of one's internal bodily signals (i.e., interoception, or body awareness) and the capacity for empathy and emotional experience are intricately linked to each other (Damasio, 2008; Grynberg & Pollatos, 2015; Zaki, Davis, & Ochsner, 2012). Interoception is a trait-like ability that can be measured experimentally (Herbert, Herbert, & Pollatos, 2011), as well as utilising questionnaire measures (Bornemann, Herbert, Mehling, & Singer, 2014), and could potentially have a relationship with other traits that are characterised by low empathy. In the present study, we were interested in investigating how body awareness relates to the Dark Triad (i.e., narcissism, Machiavellianism, and psychopathy), a constellation of traits characterised by low empathy (Jonason, Lyons, Bethell, & Ross, 2013; Wai & Tiliopoulos, 2012).

In the recent decades, there has been a mushrooming of theoretical and empirical studies investigating manipulative personalities, or the Dark Triad constellation (Furnham, Richards, & Paulhus, 2013). The Dark Triad consists of a set of overlapping, yet distinct personality traits: narcissism (i.e., vanity and grandiose self-view), Machiavellianism (i.e., cynicism and distrust in others), and psychopathy (primary psychopathy: callous and unemotional tendencies; secondary psychopathy: anti-social and risk-taking behaviours). Theoretically, the Dark Triad has been placed within the evolutionary Life History framework, where individuals vary from slow (late maturation and reproduction, altruistic and cautious inter-personal styles) to fast

(early maturation and reproduction, exploitive and impulsive inter-personal styles) in an adaptive continuum (Jonason, Koenig, & Tost, 2010). Low empathy could be useful for individuals who are enacting a fast life history strategy, enabling them to efficiently manipulate and use others (Jonason et al., 2013). It is possible that the fast end of the life history continuum relates to poorer interoceptive ability. Perhaps diverting attention away from oneself, and focusing on the external setting allows for better extraction of immediate resources from the environment, further enabling the execution of an exploitive life history strategy. So far, the links between interoceptive awareness and the Dark Triad have not been investigated together.

Psychopathy, especially secondary psychopathy, is a feature of the Dark Triad that has been proposed as a candidate for a fast life history strategy (McDonald, Donnellan, & Navarrete, 2012). Secondary psychopathy is associated with a diverse range of fast life history indicators, such as opportunistic thieving (Lyons & Jonason, *in press*), diverse risk-taking (Lyons, 2015), and the propensity to stay up late (Jonason, Jones, & Lyons, 2013). Interestingly, a study on incarcerated men found that the anti-social behavioural facet of psychopathy related to poorer interoception (Nentjes, Meijer, Bernstein, Arntz, & Medendorp, 2013). Out of the dark traits, we would expect that secondary psychopathy, which has the most convincing evidence for being a fast life history strategy, would be related to indicators of poor body awareness.

Furthermore, primary psychopathy and Machiavellianism are characterised by pronounced empathy deficits (Ali, Amorim, & Chamorro-Premuzic, 2009; Jonason et al., 2013), which also suggests poor interoceptive awareness. Indeed, Gao, Raine, and Schug (2012) proposed that psychopathy may have a causal relationship with a disconnection between the mind and the body. In the present study, we

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expect that primary psychopathy and Machiavellianism, too, relate to poor body awareness.

Narcissism has been suggested as the least “dark” of the Dark Triad traits (Jonason et al., 2010), and may even be linked to heightened empathy (Vonk, Zeigler-Hill, Mayhew, & Mercer, 2013). Thus, it is possible that narcissism relates to an enhanced awareness of one’s internal body. In fact, recent experiments have found that participants had increased interoception ability when they were asked to concentrate on their own mirror image (Ainley, Tajadura-Jiménez, Fotopoulou, & Tsakiris, 2012), self-related words, or a photograph of the self (Ainley, Maister, Brokfeld, Farmer, & Tsakiris, 2013). It seems that activating aspects of the self is associated with being more in tune with the internal workings of the body. Thus, we expect that out of the Dark Triad traits, narcissism relates to increased interoception, because individuals high in this trait are more focussed on the concept of the self. Further, aspects of narcissism may even be related to a slow life history strategy (McDonald et al., 2012), which could be facilitated by internal body awareness.

To conclude, the present questionnaire study investigated the relationship between the Dark Triad of personality, and different facets of interoception. We explored these relationships using a multi-dimensional questionnaire for interoception, which includes facets for awareness and trust in body sensations, the capacity to regulate attention, and the awareness of mind–body integration.

## 2. Method

### 2.1. Participants

Three hundred and twenty-three (69 men, 254 women,  $M_{\text{age}} = 24.65$ ,  $SD = 10.36$ ) students and community members were invited via email and social media advertisements to take part in an on-line study. Participants were informed of the nature of the study, including relevant ethical information on the first page of the survey. Consent was obtained on-line. Upon completion of the survey, participants were given a full debriefing.

### 2.2. Measures

Interoceptive awareness was measured using the 32-item Multidimensional Assessment of Interoceptive Awareness (MAIA) measure (Mehling et al., 2012). Items measure five dimensions of body awareness on a 5-point Likert scale (0 = Never, 5 = Always): (i) Awareness of Body Sensations (i.e., “When I am tense, I notice where the tension is located in my body”); (ii) Emotional Reaction and Attention (i.e., “I distract myself from discomfort and pain”); (iii) Attention Regulation of Body Sensations (i.e., “I am able to consciously focus on my body as a whole”); (iv) Mind–Body Integration (i.e., as “I listen to my body to inform me about what to do”); and (v) Trusting Body Sensations (i.e., “I feel at home in my body”). The items for each subscale were summed and averaged.

Psychopathy was measured using the 64-item Self-Reported psychopathy scale (Paulhus, Neumann, & Hare, in press). Participants indicate how much they agree (1 = strongly disagree, 5 strongly agree) with statements such as “I never cry at movies” and “I have tricked somebody into giving money to me”. Thirty-two items are summed to form an index of secondary psychopathy, and 32 to form an index of primary psychopathy.

Machiavellianism was measured using the 20-item IV Mach scale (Christie & Geis, 1970). Participants rate their agreement (1 = strongly disagree; 7 = strongly agree) with statements such as “Never tell anyone the real reason you did something unless it is useful to do so” and “It’s hard to get ahead without cutting corners here and there”, which were summed together to form an index of Machiavellianism.

Narcissism was measured using the 40-item forced-choice Narcissistic Personality Inventory (Raskin & Terry, 1988). Statements of items relating to high narcissism include “I know that I’m good because everybody keeps telling me so”. Statements relating to low narcissism include “When people compliment me I sometimes get embarrassed”. Participants chose one of two statements. A score of 1 was given for each high

narcissism statement and a score of 0 for each low narcissism statement. The scores were summed together to form an index of Narcissism. All of the scales and subscales in the study had acceptable internal reliability (Cronbach’s alphas .67–.91).

## 3. Results

Descriptive statistics (Table 1) show that men scored significantly higher than women on measures of primary and secondary psychopathy, narcissism and Machiavellianism. For interoceptive awareness, men scored significantly higher than women on the Emotional reaction and Attention Regulation dimension. Women scored significantly higher than men on dimensions of Awareness of Body Sensation, and Mind–Body Integration.

We conducted bivariate correlations (Bonferroni corrected,  $p < .002$ ) to explore the relationships between the Dark Triad and each of the five interoceptive awareness variables (Table 2). Secondary psychopathy was negatively correlated with Awareness of Body Sensations, and Machiavellianism correlated negatively with Trusting Body Sensations. Only two of these correlations were significantly different depending on the sex of the participant. There was a negative correlation trend between primary psychopathy and Emotional Reaction and Attention in men ( $r = -.16$ ,  $p = .16$ ), which did not exist in women ( $r = .09$ ,  $p = .18$ ; Fisher’s  $z = -1.80$ ,  $p = .04$ ). Although these correlations were in different directions, they were insignificant, and will not be discussed further. The second sex difference was between narcissism and Trusting, where in women, there was a positive ( $r = .24$ ,  $p = .001$ ), and in men, a negative ( $r = -.08$ ,  $p = .48$ ) correlation (Fisher’s  $z = -2.44$ ,  $p = .01$ ).

We then conducted five linear multiple regressions in order to control for the shared variance among the Dark Triad. In these regressions, secondary and primary psychopathy, narcissism, and Machiavellianism were entered as simultaneous predictor variables, and age and sex were entered as control variables. Each of the subscales of the MAIA was entered as outcome variables (see Table 2 for beta values). Narcissism was found to be a positive predictor of most of the subscales in the MAIA questionnaire, including Awareness of Body Sensation, Attention Regulation, Mind–Body Integration, and Trusting. Primary psychopathy was a significant positive predictor for Attention Regulation, and secondary psychopathy was a significant negative predictor of Awareness of Body Sensation and Attention Regulation. Machiavellianism, in turn, was a negative predictor of Trusting.

Taking the positive relationships between narcissism and most of the interoception sub-scales, we wanted to check if the Dark Triad has shared variance with interoception due to a common factor. In order to do this, we conducted a maximum likelihood factor analysis with an oblimin rotation on all of the Dark Triad and interoception variables. We obtained a 2-factor solution that accounted for 55.56% of the variance (see Table 3 for factor loadings). Factor 1 consisted of all of the four Dark Triad variables (Eigen = 2.65, 29.40% of total variance), and Factor 2 consisted of Trusting, Attention Regulation, Mind–Body Integration, and Awareness of Body Sensation (Eigen = 2.35, 26.14% of total variance). This suggests that although there are correlations between individual facets, the Dark Triad and interoception are different factors.

## 4. Discussion

All of the Dark Triad traits were associated with unique multi-dimensional interoceptive awareness profiles. Narcissism had a positive relationship with most aspects of interoception, including awareness and trust in body sensations, the capacity to regulate attention, and the awareness of mind–body integration. These results portray a positive view of narcissism, with an adaptive connection between the body and the mind. Our results back up the research suggesting that narcissism is the “lightest” trait out of the Dark Triad (Rauthmann & Kolar, 2012), unrelated to mental and physical health pathology (Jonason, Baughman,

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