



Correlates of the Dark Tetrad

Adrian Furnham^{a,*}, Stephen Cuppello^{b,c}

^a Department of Leadership and Organizational Behaviour, Norwegian Business School, Oslo, Norway

^b Department of Psychology, City University London, United Kingdom of Great Britain and Northern Ireland

^c Thomas International, United Kingdom of Great Britain and Northern Ireland

ARTICLE INFO

Keywords:

Tetrad
Triad
Self-evaluation
Personality disorders
Sadism

ABSTRACT

This study explored demographic, ideological, self-rating and personality traits correlates of the Dark Tetrad (DT4) which measures Narcissism (Special), Machiavellianism (Crafty), Psychopathy (Wild), and Sadism (Mean) traits. In total, 447 adults completed three tests: a bright-side, work-related, personality test (HPTI: High Performance Type Indicator), a dark-side test (Short Dark Tetrad) and a number of self-ratings. Correlations and regressions showed that all four dark traits were associated with low Adjustment (Neuroticism), but also with high Risk-Taking and Competitiveness (low Agreeableness). The various measures accounted for a third of the variance in explaining the Mean (Sadistic) score, and 40 % for Special (Narcissism). Trait Competitiveness was most closely associated with all four dark traits.

1. Introduction

Over the last twenty years there has been a great interest in the “dark-side” of personality (Andersen et al., 2021). The concept and early measures are due largely to the work of Hogan and Hogan (1997), using the Hogan Developmental Survey (HDS), as well as Paulhus and Williams (2002), using the Dark Triad (DT), though there is a great deal of dispute in this area. Various groups of academics including clinical, personality and social psychology continue a number of debates and disputations about the measurement, definition and terminology of the dark-side variables (Jonason, 2022).

There is also an issue concerning the difference between the Personality Disorders and Dark-Side traits. This has been most clearly articulated by Hogan and Hogan (1997) when they note that dark—side traits are dysfunctional dispositions reflect one's distorted beliefs about others that emerge when people encounter stress or stop considering how their actions affect others. These dispositions can over time become associated with a person's reputation and can impede job performance and career success. They are essentially self-defeating expressions of normal personality, that come and go depending on the context.

An issue of concern is the correlates of these dark-side traits which this paper addresses. For instance, are they linked to demography, particularly sex differences? Are they manifest in an individual's personal ideology expressed through their religious and political beliefs? Are they easily observed by a person's self-image which can be assessed

by their self-perceptions? Most importantly where do they sit in personality trait space (Kowalski et al., 2021). Those interested in selection are often as interested in “selecting out” potentially derailing people, as “selecting in” those well suited to the job (Furnham, 2021a, 2021b).

For nearly twenty years the literature was dominated by the *Dark Triad* (DT) which continues to attract a great deal of interest (Dinić & Jevremov, 2019; Furnham et al., 2013, 2014; Jonason et al., 2020; Jonason & Davis, 2018; Koehn et al., 2019; Muris et al., 2017). The Dark Triad literature has spawned many different measures, including the very short, Dirty Dozen (Jonason & Webster, 2010) and the longer SD3 (Short Dark Triad) (Jones & Paulhus, 2014). Researchers in this area have called for a concise and validated measure for some time. This study is about the Dark Tetrad, which conceptually is not new (Chabrol et al., 2017, 2015, 2009) but is an important development in this area as it adds the formerly neglected trait of sadism.

The aim of this study was to examine a new measure which adds a trait (Sadism) to the Dark Triad to make it the *Dark Tetrad* (DT4). There has been a rapid increase in the number of recent papers concerning the DT4 (Blötner, Webster, & Wongsomboon, 2022; Blötner, Ziegler, et al., 2022; Bonfá-Araujo et al., 2022; Branković, Dinić, & Jonason, 2023; Dow, 2023; Fino et al., 2023; Furnham et al., 2020; Gajda et al., 2023; Katz et al., 2022; Li et al., 2020; Međedović & Petrović, 2018; Meng et al., 2022; Ramos-Villagrasa et al., 2022; Rogers et al., 2018; Tucaković et al., 2022; Volkmer et al., 2023; Webster & Wongsomboon, 2020). There is also now proposals for the *Dark Pentad* (DT5) adding

* Corresponding author.

E-mail address: adrian@adrianfurnham.com (A. Furnham).

<https://doi.org/10.1016/j.actpsy.2024.104222>

Received 22 October 2023; Received in revised form 11 March 2024; Accepted 12 March 2024

Available online 18 March 2024

0001-6918/© 2024 Published by Elsevier B.V. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

Spitefulness to the four dark traits (Monteiro et al., 2022). This has led to concerns about the proliferation and validity of dark-side measures (Kowalski et al., 2021).

The aim of this study was to examine in work personality space paying particular interest to the fourth variable sadism. We chose a validated personality test, designed specifically to examine personality traits in the work-place. In this study we focused on the relationship between the four DT4 traits and work personality to understand the relationship between these variables. Moreover, we were interested in demographic (sex, age, education) ideological (political and religious beliefs) as well as self-ratings and the DT4. In doing so we were particularly interested in the different profiles of the four Tetrad traits, to examine both overlap and uniqueness, particularly with reference to Sadism which makes the DT4 unique.

1.1. Dark Tetrad

The Dark Tetrad aims to assess four traits: *Machiavellianism (Crafty)* which refers to manipulative tendencies, highly pragmatic and ethics-free goal-oriented thinking, with a noticeable disregard and relativization of morality. *Narcissism (Special)* is characterised by grandiosity, entitlement, domination, and a pronounced sense of personal and social superiority which rooted in an unrealistic self-image. *Psychopathy (Wild)* is associated with any callousness, lack of empathy and remorse, as well as disinhibited social behaviour. *Sadism (Mean)* is characterised by the enjoyment of inflicting physical, sexual, or emotional pain on others, as well as by the tendency to try to control, humiliate, and punish other people.

The central feature of the Short Dark Tetrad (SD4) is the addition of sadism which concerns callousness and impaired empathy. Sadistic individuals have poor behavioural control, exhibited by a short temper, irritability, and low frustration tolerance. They are hostile, manipulative, lacking in empathy, cold-hearted, and abrasive to others, particularly those they see as their inferiors. They are also cognitively rigid and prone to social intolerance, and to seek social positions that enable them to exercise their need to control others. The trait has recently attracted a good deal of research interest (Buckels et al., 2018, 2014).

Sadism appeared as a personality disorder in DSM-III appendix but was taken out in later editions. Currently there is reference to sexual sadism and the suggestion that it may be either a conduct disorder or more simply a facet of psychopathy. Myers et al. (2006) believed it was dropped from the DSM because of overlap with other traits as well as absence of psychometric data confirming its reliability and validity. It has been suggested that its inclusion as a disorder would be used to legally excuse sadistic behaviour, which is seen more as an immoral act. Some measures of the Personality Disorders do have a Sadism Scale (Coolidge et al., 2010; Davison & Furnham, 2018). Over the years there have been a number of studies on sadism which has incremental validity over other personality disorders in explaining a wide variety of behaviours (Dinić et al., 2020; Foulkes, 2019; Johnson et al., 2019; Kowalski et al., 2019; Paulhus & Dutton, 2016).

As part of the Tetrad scale development Paulhus et al. (2020) reported on an exploratory factor analysis (EFA) to a diverse 48-item pool which revealed a separate sadism factor. In another study they did a confirmatory factor analysis (CFA) of the final selection of 28 items, which showed acceptable fit for a four-factor solution as well as coherent links to the Big Five and adjustment. In a study called the *Tetradic Heart of Darkness*, Furnham and Horne (2021) examined three dark-side measures: the DT4, the SCATI, measuring 14 personality disorders (PDs), and the SAPAS, a single item measure for each disorder. A confirmatory factor analysis confirmed the Tetrad factor structure and they found large sex differences in half of the items.

The DT4 has attracted a number of studies (Hughes & Samuels, 2020; Kay, 2021; Pajević et al., 2018). Recently, Neumann et al. (2022) found good evidence for the factor structure of the SD4. They also found interesting sex differences: men scored higher than women on all traits

except Machiavellianism. Paulhus et al. (2021) found sex differences on each of the four scales, particularly Sadism. Two dark traits – psychopathy and sadism – were strong predictors of self-reported aggression.

Other recent studies have explored correlates of the DT4. Thus, Nott and Walker (2021) looked at the relationship between DT and risk taking. In an important meta-analysis, Bonfá-Araujo et al. (2022) showed The Dark Tetrad traits correlated as predicted with several dysfunctional behaviours and socially maladaptive outcomes. They also found sadism to be potentially more similar to Psychopathy and Machiavellianism than Narcissism. More relevant to this paper, Jordan et al. (2022) in four different studies showed Antagonism (Manipulativeness, Deceitfulness, Grandiosity) from the DSM-5 to be most central to the DT4.

1.2. Personality

This study looks at “bright-side” work-related personality traits and the DT4 using the High Potential Trait Indicator (HPTI) developed to measure specifically personality at work. Clearly personality testing is used extensively in work settings and assessors are eager to select out those with dark-side profiles (Furnham, 2021b). This measure has been used extensively in a number of studies and shown to be both reliable and valid (Cuppello et al., 2023a, 2023b; Furnham et al., 2024).

There is some overlap with the Big Five (FFM) on three traits, but it assesses three additional traits shown to be related to success in a variety of jobs (Teodorescu et al., 2017). It does not assess *Extraversion*. The first is *Conscientiousness*, characterised by self-discipline, planfulness, hard-work and ability to moderate one's own impulses. The second is *Adjustment* (low Neuroticism) which is characterised by emotional resilience to stressors, positive affect, and mood stability and regulation. The third is *Curiosity* (Openness) which is characterised by an interest in new ideas, experiences and situations. There is abundant evidence that these three traits are associated with psychological health and adaptation as well as success at work (Furnham, 2018). Because Conscientiousness and Adjustment are almost always correlated with positive work outcomes we would expect these traits to be negatively correlated with the DT4 traits. However, because Curiosity is often associated with creativity, a rejection of convention and a willingness to be adventurous we anticipate it will be positively correlated with DT4 traits.

The fourth trait is *Approach to Risk (Courage)* which is the ability to combat or mitigate negative or threat-based emotions and broaden the potential range of responses. It is the willingness to confront difficult situations and solve problems in spite of adversity. High scorers are likely to be willing to break many social rules and conventions with impunity: hence we predict positive correlations with DT4 trait Wild, but not Crafty.

Ambiguity Acceptance (Tolerance) assesses how a person processes and reacts to unfamiliarity or incongruence. This trait seems only related to one DT4 trait namely Crafty as Machiavellians like to be able to easily understand others and their situation so that they can manipulate them.

Finally, *Competitiveness* (low Agreeableness) is associated with the drive to win, and have a strong need for power. Competitive people tend to be low on empathy, emotional intelligence and social skills. Individuals with higher competitiveness need to feel that their achievements are recognised and appreciated. Hence, we predict it is the clearest and strongest HPTI trait marker of the DT4 and will be positively correlated with each, particularly Special and Wild.

1.3. Self-perception and personal ratings

It has been suggested that some of the PDs, especially Narcissism are disorders of self-perception (Sedikides et al., 2004). In this study we examined a number of self-ratings such as attractive, IQ and Emotional Intelligence (EQ) which have been used in a number of other studies (Furnham & Cuppello, 2023a, 2023b). As most ratings could be

considered on a positive/desirable vs negative-undesirable dimension they may be combined into a measure of self-esteem and self-worth. We hypothesized that these ratings would be most closely linked to Narcissism.

We also examined demography (sex, age, education) and ideological (political and religious belief) correlates of the DT4. Many studies have shown sex differences with women scoring lower than men on all traits, which we expect to replicate (Furnham & Treglown, 2021). Further given that the DT measures behaviours that are associated with moral reasoning we believed it important to examine whether ideology was in any way related to the four DT scores (Jonason, 2022). Finally given the role self-rated optimism has been shown to relate to social beliefs and issues (Haakonsen & Furnham, 2022) we examined it in relation to the DT4.

2. Method

2.1. Participants

In total, 447 adult participants took part in the study: 248 stated they were women and 199 men. The youngest participant was 19 and the oldest 70 years ($M = 45.69$, $SD = 10.39$). Education was measured by degree status: 66 % were graduates and 34 % not. Most were employed in a variety of skilled and professional jobs. In total 56 % were British, 18 % from North America, 12 % from South Africa and rest from a variety of country including India, Ireland and Germany. All were employed and working in manufacturing, health and education, IT and Finance. They were all fluent in English.

2.2. Measures

- 1. The Short Dark Tetrad (Paulhus et al., 2020).** This is a 28 item measures that assesses Narcissism, Machiavellianism, Psychopathy and Sadism. The calculated alphas in this study were *Crafty* (Machiavellianism) 0.62, *Special* (Narcissism) 0.74, *Wild* (Psychopath) 0.72, and *Mean* (Sadism) 0.70.
- 2. High Potential Trait Indicator (HPTI) (MacRae & Furnham, 2020).** The HPTI is a measure of personality traits, specifically within a workplace context. Each trait was converted into a standardized score to allow for better comparison between traits. It has been used in a number of studies (Furnham & Treglown, 2018; Teodorescu et al., 2017). The alphas for the traits were Conscientiousness 0.76; Adjustment 0.77; Curiosity 0.78; Risk-Approach 0.71; Ambiguity Tolerance 0.70; Competitiveness 0.74.
- 3. Personal Ratings.** Participants rated their beliefs on various dimensions used before in this research programme. All were rated on a 100 point scale (See Table 1). These were treated to a Varimax rotated factor analysis They rated themselves on Physical

Attractiveness, Physical Health, IQ, and EQ, first factor (Eigenvalue 3.17; Variance 38.9 %) as well as Resilient, Honest, Hard-working, and Ambitious which loaded on the second factor (Eigenvalue 1.17; Variance 11.74). These were combined into two self-rating scores, the first about traits and the second about motives.

- 4. Ideology.** Participants rated their beliefs on three scales: Religiousness (1 = Not at all to 9 = Very, $M = 3.38$, $SD = 2.58$), Politics (1 = Conservative to 9 = Liberal, $M = 5.46$, $SD = 1.99$) and Optimism (1 = Not at all to 9 = Very, $M = 6.88$, $SD = 1.87$).

2.3. Procedure

Participants were recruited from a pool of individuals who had completed a psychometric assessment provided by test publisher Thomas International for genuine occupational test use, and subsequently volunteered to take part in psychology research. Participants were incentivised to take part by being offered brief feedback on their results following the study. Participants were emailed to inform them of the study and provide them with a link to complete. The study was conducted on an online survey platform. The research was approved by the committee LSA/TI/2022. Finally, participants were debriefed, thanked for their time, and provided specific feedback on all their scores.

3. Results

3.1. Correlations

Table 2 shows the correlations between all the variables. The DT correlations range from $0.27 < r < 0.55$. All four were correlated with sex (men scored higher than women) and positively with Competitive. Three of the four DT traits were correlated with age and Adjustment, with all correlations being negative. The DT which showed most significant correlations was Special.

3.2. Regressions

Table 3 shows the final step in a series of hierarchical regressions where demography, ideology, self-ratings and personality were entered in that order as predictor (dependent) variables for the four DT traits as criterion (independent) variables. The variables accounted for least of the variance with Crafty (19 %) and most with Special (40 %). In each regression variables were entered in four blocks: demography (sex, age, education), ideology (political and religious beliefs), self-ratings and personality. Demography accounted for between 4 % (Special) and 20 % (Mean). Ideology added little or no variance. For three of the four regressions self-ratings added very little with Special being the exception, adding 16 % above demography and self-ratings. In all the regressions the final step added the most variance: Crafty 13 %, Special 20 %, Wild, 22 % and Mean 13 %.

In three of the regressions sex, Curiosity and Risk Approach were all significant, but in each regression the most powerful correlate was Competitiveness. Crafty (Machiavellian) was highly correlated positively correlated with Curiosity and Competitive but negatively with on Risk Approach and Tolerance of Ambiguity. Special (Narcissistic) traits were associated with high self-ratings on both factors and all six of the personality factors, particularly Competitiveness and Conscientiousness. Wild (Psychopathic) traits were associated with five of the six personality ones: positively with Competitive, Risk Approach and Curious and negatively with Conscientiousness and Adjustment.

Finally, DT4 Mean scores were associated with being young, male, better educated and less religious as well as negatively with Conscientiousness and Adjustment and positively with Competitiveness, and Risk Approach.

Table 1
Factor Analysis of Self-rating Variables (Low 1——High100).

	M	SD	1	2
Attractiveness	59.72	19.36	0.821	0.023
Health	64.91	19.99	0.763	0.066
IQ	75.65	13.47	0.650	0.313
EQ	75.51	18.76	0.543	0.362
Resilience	78.41	17.78	0.422	0.549
Honesty	86.92	13.33	0.138	0.714
Personal Wealth	56.65	21.64	0.457	0.393
Hard Working	82.65	15.24	0.021	0.816
Ambitious	72.49	20.39	0.320	0.608
Creativite	69.01	22.24	0.494	0.288
Eigenvalue		3.17		1.17
Variance		38.9 %		11.74 %

Table 2
Means, SDs and correlations between all factors.

	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
(1)Crafty	23.22	3.75																		
(2)Special	22.20	4.74	0.30***																	
(3)Wild	14.52	4.81	0.27***	0.41***																
(4)Mean	15.52	5.66	0.38***	0.55***	0.37***															
(5)Sex	1.56	0.50	-0.14	-0.16***	-0.30***	-0.37***														
(6)Age	45.69	10.34	-0.21**	-0.10	-0.06	-0.22***	-0.06													
(7)Degree	1.34	0.48	-0.03	-0.07	0.04	0.11	0.04	0.04												
(8)Religious	3.37	2.58	-0.05	0.11	0.03	-0.13	0.03	0.05	-0.08											
(9)Political	5.47	2.00	-0.07	-0.06	-0.05	-0.08	0.11	-0.09	-0.08	-0.18***										
(10)Optimist	6.89	1.87	-0.07	0.24***	-0.05	-0.15	0.08	0.09	-0.02	0.15	-0.01									
(11)Pers1	401.30	77.68	-0.01	0.40***	0.04	0.01	-0.05	0.02	0.02	0.15	0.07	0.35***								
(12)Pers2	320.46	48.42	0.01	0.35***	-0.02	0.00	0.03	0.03	-0.10	0.15	-0.13	0.35***	0.59***							
(13)Conscient	70.70	9.05	-0.02	0.32***	-0.05	-0.11	0.01	0.12	-0.08	0.14	-0.14	0.25***	0.30***	0.65***						
(14)Adjust	63.92	11.72	-0.22***	0.10	-0.19***	-0.16***	-0.03	0.16***	0.02	0.03	0.09	0.42***	0.31***	0.27***	0.25***					
(15)Curious	68.48	8.86	0.02	0.25***	0.14	0.03	-0.07	0.00	-0.11	0.05	0.09	0.26***	0.34***	0.31***	0.33***	0.19***				
(16)Risk App	64.42	10.05	-0.09	0.36***	0.21***	0.12	-0.22***	0.16***	-0.03	0.06	-0.13	0.34***	0.31***	0.47***	0.51***	0.44***	0.49***			
(17)Ambiguity	52.46	10.22	-0.22***	0.14	0.07	-0.05	-0.07	0.27***	-0.12	0.01	0.00	0.20***	0.18***	0.16***	0.26***	0.37***	0.32***			
(18)Compet	49.26	12.24	0.30***	0.36***	0.36***	0.38***	-0.24***	-0.14	-0.05	0.07	-0.23***	0.06	0.16***	0.29***	0.33***	-0.07	-0.01	0.48***		

p < .001 *** Sex: Male = 1 Female = 2.

Table 3
Regressions with the Dark Tetrad as Criterion variables.

	Crafty			Special			Wild			Mean		
	B	SE	t	B	SE	t	B	SE	t	B	SE	t
Sex	-0.73	0.35	-0.10	-0.26	0.38	-0.03	-1.30	0.42	-0.13	-3.06**	0.48	-2.81
Age	-0.03	0.02	-0.07	-0.02	0.02	-0.05	0.00	0.02	0.00	0.10	0.02	-0.08
Degree	-0.41	0.35	-0.05	0.18	0.38	0.02	0.72	0.42	0.07	1.72	0.48	1.29
Religious	-0.08	0.06	-0.06	0.07	0.07	0.04	0.07	0.08	0.04	0.96	0.09	-0.21
Politics	-0.11	0.09	-0.06	0.08	0.10	0.03	0.02	0.11	0.01	0.21	0.12	-0.05
Optimist	0.05	0.10	0.02	0.21	0.11	0.08	-0.06	0.12	-0.02	-0.46	0.14	-0.31
Pers1	0.00	0.00	-0.04	0.01	0.00	0.24	0.01	0.00	0.08	1.36	0.00	0.00
Pers2	0.00	0.01	0.02	0.00	0.01	-0.03	-0.45	0.01	-0.11	-1.74	0.01	0.01
Conscientious	-0.02	0.03	-0.04	0.01	0.03	0.02	-0.12	0.03	-0.23	-3.91***	0.04	-0.17
Adjustment	-0.03	0.02	-0.10	-0.01	0.02	-0.02	-0.51	0.02	-0.26	-5.00***	0.02	-0.05
Curiosity	0.07	0.02	0.17	0.06	0.03	0.11	2.42*	0.03	0.13	2.51*	0.04	0.04
Risk App	-0.05	0.03	-0.14	0.05	0.03	0.10	1.75	0.03	0.30	4.88***	0.03	0.08
Ambiguity Tol	-0.07	0.02	-0.18	0.00	0.02	-0.01	-0.13	0.00	0.00	0.06	0.03	-0.01
Competitive	0.10	0.02	0.32	0.18	0.02	0.46	10.07***	0.02	0.34	6.80***	0.02	0.16
Adjusted R ²							0.405			0.296		
F							22.422			14.218		
p							0.000			0.000		

* *p* < .05.
** *p* < .01.
*** *p* < .001.

4. Discussion

This study looked at the relationship between a relatively new bright- and dark-side personality test. Importantly in a number of recent studies using the HPTI we have found that these traits, outside the traditional Big Five structure, are particularly related to issues like promotion at work as well as issues associated with healthy money management and adopting healthy defense mechanisms (Cuppello et al., 2024; Furnham & Cuppello, 2023a, 2023b; Furnham et al., 2023).

This study investigated four sets of correlates of the DT4: demography (sex, age, education), ideology (religion, politics, optimism), self-ratings and personality variables. The regressions indicated that the DT traits were associated with being male, but with relatively few associations with ideology and self-ratings except for being *Special* (Narcissism) which is to be expected. People who rate themselves higher ratings on such as attractiveness, EQ and IQ had higher Narcissism scores (Table 3).

However, the six personality factors showed a clear pattern. The DT4 traits were associated positively with Competitiveness and Curiosity, and negatively with Conscientiousness and Adjustment. Previous studies using the HPTI have shown that work success has been associated positively with Conscientiousness and Adjustment (Furnham, 2018). In those with DT4 traits would not be expected to be very successful at work, being emotionally unstable and not being hard-working, organized and planful. However, the literature on the dark-side of people at work does suggest that some traits, notably Narcissism (Special) and Psychopathy (Wild), if moderately but not excessively high are indeed associated with climbing the corporate ladder (Göttsche-Astrup, 2018; Göttsche-Astrup et al., 2016). The impressive self-confidence and self-belief of Special Narcissists, and the risk-taking and rule-breaking of Wild Psychopaths can clearly help their business success, particularly in business sectors like finance (Furnham, 2018).

As Table 3 indicates the pattern of associations was fairly different for the four DT traits. Thus, while all were high on Competitiveness, it was only the Wild and Mean types that were low on Conscientiousness and Adjustment. The picture of the under-studied Sadist (high Mean scorer) is, as expected, rather unattractive. as they are low on both Conscientiousness and Adjustment while being risk-takers who tend to be pessimists. They are also more likely to be non-religious and pessimistic. As expected, narcissists (high Special scorer) rate themselves highly and tend to be Curious and Competitive, that is Open-to-Experience and low on Agreeableness.

This study highlighted the role of Trait Competitiveness in the DT4. Trait competitiveness refers to “the enjoyment of interpersonal competition and the desire to win and be better than others” (Spence & Helmreich, 1983, p.83). The concept describes the individual's internal characteristics that drive a person to outperform others. In many ways the term is opposite of co-cooperativeness, agreeableness and selflessness. Clearly competitiveness (low Agreeableness) can have both advantages and disadvantages in extremes. There have been a number of studies that have focused on Trait Competitiveness, which has seen to have both positive and negative outcomes (Elliot et al., 2018; Garcia et al., 2013; Khindri & Tanwar, 2023; Orosz et al., 2018; Ward et al., 2013).

It has been suggested that Agreeable people are empathic, trusting, kind, well-liked, respected and valued as friends as they always seek and attempt to create harmony and concord (Furnham, 2021). Yet being too trusting, particularly of anti-social individuals, can be very unwise. Being too attentive to the needs of others rather than self, may also be less adaptive because they may be easy to exploit and unable or unwilling to assert their rights. Thus tough-minded, sceptical and competitive individuals often do better in work settings though they may be rated as egocentric, selfish and unkind. Indeed Ryckman et al. (2011) found hyper-competitive people were more aggressive, dominant, and exhibitionistic.

This study demonstrates that while the four traits in the DT are

modestly intercorrelated $0.27 < r < 0.55$ which suggests they are sufficiently unique to warrant investigating separately. The focus was on Sadism/Meanness which differentiates the Dark Triad and Tetrad and reveals some very interesting results. There is a significant literature which suggests the theoretical overlap and empirical correlations between Machiavellianism and Psychopath suggests two have too much overlap to warrant them being measured separately (Furnham et al., 2014). Hence the addition of Mean/Sadism suggests the possibility of getting more insight into the workings of dark-side personalities particularly in the workplace. However, there is a concern that the addition of dark-side traits has been done with either sufficient theoretical or empirical evidence (Kowalski et al., 2021).

Ethics approval

UCL Psychology Dept number CEHP/514.2013 granted permission for this study to be done,

Registration

This paper was not pre-registered with the journal.

Ethics

This was sought and obtained (SLA/2022/02).

Informed consent

Participants gave consent for their anonymised data to be analysed and published.

CRedit authorship contribution statement

Adrian Furnham: Writing – review & editing, Writing – original draft, Formal analysis, Conceptualization. **Stephen Cuppello:** Investigation, Data curation.

Declaration of competing interest

There is no conflict of interest in this research or paper. This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Data availability

Data will be made available on request.

References

- Andersen, N., Jonason, P., & Furnham, A. (2021). *Bibliometric analysis of the dark triad: The status of a rapidly developing research area* (Manuscript under review).
- Blötner, C., Webster, G. D., & Wongsomboon, V. (2022). Measurement invariance of the short dark tetrad across cultures and genders. *European Journal of Psychological Assessment*. Advance online publication. <https://doi.org/10.1027/1015-5759/a000715>
- Blötner, C., Ziegler, M., Wehner, C., Back, M., & Grosz, M. (2022). The Nomological network of the short dark tetrad scale (SD4). *European Journal of Psychological Assessment*, 38(3), 187–197. <https://doi.org/10.1027/1015-5759/a00065doi.org/10.31234/osf.io/js5qz>
- Bonfá-Araujo, B., Lima-Costa, A. R., Hauck-Filho, M., & Jonason, P. K. (2022). Considering sadism in the shadow of the dark triad traits: A meta-analytic review of the dark tetrad. *Personality and Individual Differences*, 197(1), Article 111767. <https://doi.org/10.1016/j.paid.2022.111767>
- Branković, I., Dinić, B. M., & Jonason, P. K. (2023). How traditional stalking and cyberstalking correlate with the Dark Tetrad traits? *Current Psychology*, 42(30), 26238–26242.
- Buckels, E. E., Trapnell, P. D., Andjelovic, T., & Paulhus, D. L. (2018). Internet trolling and everyday sadism: Parallel effects on pain perception and moral judgement. *Journal of Personality*, 87(2), 328–340. <https://doi.org/10.1111/jopy.12393>

- Buckels, E. E., Trapnell, P. D., & Paulhus, D. L. (2014). Trolls just want to have fun. *Personality and Individual Differences*, 67(1), 97–102. <https://doi.org/10.1016/j.paid.2014.01.016>
- Chabrol, H., Bouvet, R., & Goutaudier, N. (2017). The dark tetrad and antisocial behavior in a community sample of college students. *Journal of Forensic Psychology Research and Practice*, 17(5), 295–304. <https://doi.org/10.1080/24732850.2017.1361310>
- Chabrol, H., Melioli, T., Van Leeuwen, N., Rodgers, R., & Goutaudier, N. (2015). The dark tetrad: Identifying personality profiles in high-school students. *Personality and Individual Differences*, 83, 97–101.
- Chabrol, H., Van Leeuwen, N., Rodgers, R., & Sejourne, N. (2009). Contributions of psychopathic, narcissistic, Machiavellian, and sadistic personality traits to juvenile delinquency. *Personality and Individual Differences*, 47(7), 734–739. <https://doi.org/10.1016/j.paid.2009.06.020>
- Coolidge, F. L., Segal, D. L., Cahill, B. S., & Simenson, J. T. (2010). Psychometric properties of a brief inventory for the screening of personality disorders: The SCATI. *Psychology and Psychotherapy: Theory, Research and Practice*, 83(4), 395–405. <https://doi.org/10.1348/147608310X486363>
- Cuppello, S., Treglown, L., & Furnham, A. (2023a). Personality and management level: Traits that get you to the top. *Personality and Individual Differences*, 206, Article 112108. <https://doi.org/10.1016/j.paid.2023.112108>
- Cuppello, S., Treglown, L., & Furnham, A. (2023b). Intelligence, personality and tolerance of ambiguity. *Journal of Intelligence*, 11(6), 102. <https://doi.org/10.3390/jintelligence11060102>
- Cuppello, S., Treglown, L., & Furnham, A. (2024). *Intelligence. Consulting Psychology: Personality and Management level*.
- Davison, M., & Furnham, A. (2018). The personality disorder profile of professional actors. *Psychology of Popular Media Culture*, 7, 33–46.
- Dinić, B. M., Allred, T., Petrović, M., & Wertag, A. (2020). A test of three sadism measures. *Journal of Individual Differences*, 41(4), 219–227.
- Dinić, B. M., & Jevremov, T. (2019). Trends in research related to the dark triad: A bibliometric analysis. *Current Psychology*. <https://doi.org/10.1007/s12144-019-00250-9>
- Dow, G. T. (2023). The dark tetrad and malevolent creativity. In *Creativity and morality* (pp. 69–80). Academic Press.
- Elliot, A. J., Jury, M., & Murayama, K. (2018). Trait and perceived environmental competitiveness in achievement situations. *Journal of Personality*, 86(3), 353–367. <https://doi.org/10.1111/JOPY.12320>
- Fino, E., Popuşoi, S. A., Holman, A. C., Illiceto, P., & Heym, N. (2023). Dimensionality, factorial invariance, and cross-cultural differential item functioning of the short dark tetrad (SD4) in Italian, Romanian, and UK samples. *European Journal of Psychological Assessment*. <https://doi.org/10.1027/1015-5759/a000775>
- Foulkes, L. (2019). Sadism: Review of an elusive construct. *Personality and Individual Differences*, 151, Article 109500. <https://doi.org/10.1016/j.paid.2019.07.010>
- Furnham, A. (2018). Personality and occupational success. In V. Zeigler-Hill, & T. K. Shackelford (Eds.), *The SAGE handbook of personality and individual differences* (pp. 537–551). New York: Sage.
- Furnham, A. (2021a). Agreeableness. In V. Zeigler-Hill, & T. Shackelford (Eds.), *Encyclopedia of personality and individual differences*. Springer.
- Furnham, A. (2021b). The bright and dark side of personality. In D. Lusk, & T. Hayes (Eds.), *The good, the bad, and the human dark side at work*. New York: SIOP.
- Furnham, A., & Cuppello, S. (2023a). Maladaptive (dark-side) and adaptive (bright-side) personality traits and defense styles. *Acta Psychologica*, 239, Article e104002.
- Furnham, A., & Cuppello, S. (2023b). Exploring the relationship between personality and money scripts while controlling for demography, ideology, and self-esteem. *Financial Planning Review*, 6(3), Article e1167.
- Furnham, A., Cuppello, S., & Fenton O'Creery, M. (2024). Correlates of stock market investment. *Journal of Neuroscience, Psychology, and Economics*.
- Furnham, A., Cuppello, S., & Semmelink, D. (2024). *The proactive personality: Bright-side trait correlates*. Frontiers in Psychology.
- Furnham, A., & Horne, G. (2021). The Tetradic heart of darkness: Comparing three dark-side instruments. *Personality and Individual Differences*, 179(1), Article 110918. <https://doi.org/10.1016/j.paid.2021.110918>
- Furnham, A., Horne, G., & Grover, S. (2020). Correlates of the militant extremist mindset. *Frontiers in Psychology*, 11, 2250. <https://doi.org/10.3389/fpsyg.2020.02250>
- Furnham, A., Richards, S., Rangle, L., & Jones, D. (2014). Measuring malevolence: Quantitative issues surrounding the dark triad of personality. *Personality and Individual Differences*, 67, 114–121.
- Furnham, A., Richards, S. C., & Paulhus, D. L. (2013). The dark triad of personality: A 10-year review. *Social and Personality Compass*, 7, 199–216.
- Furnham, A., & Treglown, L. (2018). High potential personality and intelligence. *Personality and Individual Differences*, 128, 81–87.
- Furnham, A., & Treglown, L. (2021). Sex differences in personality scores on six scales: Many significant, but mostly small, differences. *Current Psychology*, 42, 3449–3459. <https://doi.org/10.1007/s12144-021-01675-x>
- Gajda, A., Moroň, M., Królik, M., et al. (2023). The dark tetrad, cybervictimization, and cyberbullying: The role of moral disengagement. *Current Psychology*, 42, 23413–23421. <https://doi.org/10.1007/s12144-022-03456-6>
- Garcia, S. M., Tor, A., & Schiff, T. M. (2013). The psychology of competition: A social comparison perspective. *Perspectives on Psychological Science*, 8(6), 634–650. <https://doi.org/10.1177/1745691613504114>
- Götzsche-Astrup, O. (2018). The bright and dark sides of talent at work: A study of the personalities of talent-development-program participants. *Consulting Psychology Journal: Practice and Research*, 70(2), 167–181. <https://doi.org/10.1037/cpb0000105>
- Götzsche-Astrup, O., Jakobsen, J., & Furnham, A. (2016). The higher you climb: Dark side personality and job level. *Scandinavian Journal of Psychology*, 57, 535–541.
- Haakonsen, J., & Furnham, A. (2022). COVID-19 vaccination, conspiracy theories, and ideology. *Health Psychology*, 42(3), 205.
- Hogan, R., & Hogan, J. (1997). *Hogan development survey manual*. Tulsa: HAS.
- Hughes, S., & Samuels, H. (2020). Dark desires: The dark tetrad and relationship control. *Personality and Individual Differences*, 171, Article 110548.
- Johnson, L. K., Plouffe, R. A., & Saklofske, D. H. (2019). Subclinical sadism and the dark triad: Should there be a dark tetrad? *Journal of Individual Differences*, 40(3), 127–133. <https://doi.org/10.1027/1614-0001/a000284>
- Jonason, P. K. (Ed.). (2022). *Shining light on the dark side of personality*. Berlin: Hofgreve.
- Jonason, P. K., & Davis, M. D. (2018). A gender role view of the dark triad traits. *Personality and Individual Differences*, 125, 102–105. <https://doi.org/10.1016/j.paid.2018.01.004>
- Jonason, P. K., Underhill, D., & Navarrate, C. D. (2020). Understanding prejudice in terms of approach tendencies: The dark triad traits, sex differences, and political personality traits. *Personality and Individual Differences*, 153, Article 109617.
- Jonason, P. K., & Webster, G. D. (2010). The dirty dozen: A concise measure of the dark triad. *Psychological Assessment*, 22(2), 420.
- Jones, D. N., & Paulhus, D. L. (2014). Introducing the short dark triad (SD3): A brief measure of dark personality trait. *Assessment*, 21(1), 28–41. <https://doi.org/10.1177/1073191113514105>
- Jordan, D. G., Jonason, P. K., Zeigler-Hill, V., Winer, E. S., Fletcher, S., & Underhill, D. (2022). A dark web of personality: Network analyses of dark personality features and pathological personality traits. *Journal of Psychopathology and Behavioral Assessment*, 44(1), 186–201. <https://doi.org/10.1007/s10862-021-09882-3>
- Katz, L., Harvey, C., Baker, I. S., & Howard, C. (2022). The dark side of humanity scale: A reconstruction of the dark tetrad constructs. *Acta Psychologica*, 222, Article 103461. <https://doi.org/10.1016/j.actpsy.2021.103461>
- Kay, C. (2021). Actors of the most fiendish character: Explaining the associations between the dark tetrad and conspiracist ideation. *Personality and Individual Differences*, 171(1), Article 110543. <https://doi.org/10.1016/j.paid.2020.110543>
- Khindri, A., & Tanwar, S. (2023). Trait-competitiveness and life-satisfaction: A moderated mediation model of hard-work and leisure. *Personality and Individual Differences*, 200, Article 111873.
- Koehn, M. A., Okan, C., & Jonason, P. K. (2019). A primer on the dark triad traits. *Australian Journal of Psychology*, 71(1), 7–15. <https://doi.org/10.1111/ajpy.12198>
- Kowalski, C., Di Piero, R., Plouffe, R., Rogoza, R., & Saklofske, D. (2019). Enthusiastic acts of evil: The assessment of sadistic personality in Polish and Italian populations. *Journal of Personality Assessment*, 1673760.
- Kowalski, C. M., Rogoza, R., Saklofske, D. H., & Schermer, J. A. (2021). Dark triads, tetrads, tents, and cores: Why navigate (research) the jungle of dark personality models without a compass (critique)? *Management and Organizational Studies Publications*, 76. <https://ir.lib.uwo.ca/mospub/76>
- Li, C., Murad, M., Shahzad, F., Khan, M. A. S., & Ashraf, S. F. (2020). Dark tetrad personality traits and counterproductive work behavior among doctors in Pakistan. *International Journal of Health Planning and Management*, 35, 1173–1192. <https://doi.org/10.1002/hpm.30251192LIETAL>
- MacRae, I., & Furnham, A. (2020). A psychometric analysis of the high potential trait inventory (HPTI). *Psychology*, 11, 1125–1140. <https://doi.org/10.4236/psych.2020.118074>
- Mededović, J., & Petrović, B. (2018). The dark tetrad: Structural properties and location in the personality space. *Journal of Individual Differences*, 36, 228–236. <https://doi.org/10.1027/1614-0001/a000179>
- Meng, X., Li, C., Liu, D., & Xu, Y. (2022). The super-short dark tetrad: Development and validation within the Chinese context. *Personality and Individual Differences*, 188, 111459. <https://doi.org/10.1016/j.paid.2021.111459>. ISSN 0191-8869.
- Monteiro, R. P., Coelho, G., Hanel, P., et al. (2022). The dark side of Brazil: Effects of dark traits on general COVID-19 worry and responses against the pandemic. *Personality and Individual Differences*, 185, Article 111247. <https://doi.org/10.1016/j.paid.2021.111247>
- Muris, P., Merckelbach, H., Otgaar, H., & Meijer, E. (2017). The malevolent side of human nature: A Meta-analysis and critical review of the literature on the dark triad (narcissism, Machiavellianism, and psychopathy). *Perspectives on Psychological Science*, 12(2), 183–204. <https://doi.org/10.1177/17456916166666070>
- Myers, W. C., Burket, R. C., & Husted, D. S. (2006). Sadistic personality disorder and comorbid mental illness in adolescent psychiatric inpatients. *Journal of the American Academy of Psychiatry and the Law Online*, 34(1), 61–71.
- Neumann, C. S., Jones, D. N., & Paulhus, D. L. (2022). Examining the short dark tetrad (SD4) across models, correlates, and gender. *Assessment*, 29(4), 651–667. <https://doi.org/10.1177/1073191120986624>
- Nott, D., & Walker, B. (2021). The dark tetrad in the prediction of self-reported and behavioural risk-taking. *Australian Journal of Psychology*, 73(4), 569–577. <https://doi.org/10.1080/00049530.2021.1955224>
- Orosz, G., Tóth-Király, I., Bülki, N., Ivaskevics, K., Bóthe, B., & Fülöp, M. (2018). The four faces of competition: The development of the multidimensional competitive orientation inventory. *Frontiers in Psychology*, 9(1), 779. <https://doi.org/10.3389/fpsyg.2018.00779>
- Pajević, M., Vukosavljević-Gvozden, T., Stevanović, N., & Neumann, C. S. (2018). The relationship between the dark tetrad and a two-dimensional view of empathy. *Personality and Individual Differences*, 123(1), 125–130. <https://doi.org/10.1016/j.paid.2017.11.00>
- Paulhus, D., Gupta, R., & Jones, D. (2021). *Dark or Disturbed? Under review: Predicting Aggression from the Dark Tetrad and Schizotypy*. *Aggressive Behaviour*.

- Paulhus, D. L., Buckels, E. E., Trapnell, P. D., & Jones, D. N. (2020). Screening for dark personalities: The short dark tetrad (SD4). *European Journal of Psychological Assessment*, 37(3), 208–222. <https://doi.org/10.1027/1015-5759/a000602>
- Paulhus, D. L., & Dutton, D. G. (2016). Everyday sadism. In V. Zeigler-Hill, & D. K. Marcus (Eds.), *The dark side of personality: Science and practice in social, personality, and clinical psychology* (pp. 109–120). American Psychological Association.
- Paulhus, D. L., & Williams, K. M. (2002). The dark triad of personality: Narcissism, Machiavellianism and psychopathy. *Journal of Research in Personality*, 36(6), 556–563. [https://doi.org/10.1016/S0092-6566\(02\)00505-6](https://doi.org/10.1016/S0092-6566(02)00505-6)
- Ramos-Villagrasa, P. J., Fernández-del-Río, E., & Castro, Á. (2022). Analysis of a brief biodata scale as a predictor of job performance and its incremental validity over the big five and dark tetrad personality traits. *PLoS One*, 17.
- Rogers, K.H., Le, M.T., Buckels, E.E., Kim, M., & Biesanz, J.C. (2018). Dispositional malevolence and impression formation: Dark tetrad associations with accuracy and positivity in first impressions. *Journal of Personality*;86:1050–1064. doi:<https://doi.org/10.1111/jopy.12>.
- Ryckman, R. M., Hammer, M., Kaczor, L. M., & Gold, J. A. (2011). Construction of a hypercompetitive attitude scale. *Journal of Personality Assessment*, 55(3–4), 630–639. <https://doi.org/10.1080/00223891.1990.9674097>
- Sedikides, C., Rudich, E., Gregg, A., Kumashiro, M., & Rusbult, C. (2004). Are normal narcissists psychologically healthy? Self-esteem matters. *Journal of Personality and Social Psychology*, 87(3), 400–416. <https://doi.org/10.1037/0022-3514.87.3.400>
- Spence, J. T., & Helmreich, R. L. (1983). Achievement-related motives and behavior. In J. T. Spence (Ed.), *Achievement and achievement motives: Psychological and sociological approaches* (pp. 10–74). New York: Freeman.
- Teodorescu, A., Furnham, A., & MacRae, I. (2017). Trait correlates of success at work. *International Journal of Selection and Assessment*, 25, 36–42.
- Tucaković, L., Bojić, L., & Nikolić, N. (2022). The Battle between light and dark side of personality: How light and dark personality traits predict mating strategies in the online context. *Interpersona: An international journal on. Personal Relationships*, 16(2), 295–312. <https://doi.org/10.5964/ijpr.7869>
- Volkmer, S. A., Gaube, S., Raue, M., & Lermer, E. (2023). Troll story: The dark tetrad and online trolling revisited with a glance at humor. *PLoS One*, 18(3), Article e0280271. <https://doi.org/10.1371/journal.pone.0280271>
- Ward, E. A., Eagle, B. W., & South, F. A. (2013). Are competitive and / or contentious college graduates more satisfied with life? *International Journal of Business, Humanities & Technology*, 3(1), 14–20.
- Webster, G., & Wongsomboon, V. (2020). *The hateful eight (H8): An efficient multifaceted approach to the short dark tetrad (SD4)*. Unpublished paper.