

Running head: *Trends in job level and dark personality*

The higher you climb: dark side personality and job level in a sample of executives, middle managers, and entry-level supervisors

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Abstract

The purpose of this study was to explore the idea that there are dark side personality differences in the profiles of people at different levels on organisations. This study replicates and extends existing leadership research by focusing on the self-defeating behavioural tendencies. A Danish consultancy provided data on 264 adults based on assessment reports. This paper explored linear and quadratic relationships between personality and de facto job level. More senior managers scored high on Cluster B/Moving Against Others scales of Bold, Colorful and Imaginative, and lower on Cautious and Dutiful. These Danish data are compared to data from Great Britain and New Zealand which show very similar findings. Practice should take into account that dark side personality traits associated with an assertive, sometimes hostile, interpersonal orientation, predict leadership level *up to a point*.

Keywords – Dark side, Personality Disorders, Managerial Level

Introduction

This study looks at dark-side personality trait differences between people at different organisational levels. It is theoretically related to the studies relating dark-side traits to leadership failure and derailment (Furnham, Trickey & Hyde, 2012; Kaiser, LeBreton, Hogan, 2015). Specifically it explores the idea that personality is related to management level and that, paradoxically, specific dark side traits are related to the ability to climb the management ladder but that there is a curvilinear relationship between these traits and management success (Hogan & Holland, 2003; Winsborough & Sambath, 2013). Moreover this study explores both linear and quadratic relationships between dark side traits and managerial level.

The literature on leadership derailment and failing leadership borrows its terminology and categorisation from the study of personality disorders. Table 1 presents the 11 personality disorders of the DSM system compared to the 11 scales of the Hogan Development Survey (HDS; Hogan & Hogan, 1997) used in this paper.

Insert Table 1 here

It is important to point out that the HDS assesses dysfunctional interpersonal themes that reflect distorted beliefs about others that emerge when people encounter stress or stop considering how their actions affect others. Over time, these dispositions may become associated with a person's reputation and can impede job performance and career success. The HDS assesses self-defeating expressions of normal personality. The DSM-5 (American Psychiatric Association, 2013; p. 647) makes this same distinction between behavioral traits and disorders – self-defeating behaviors, such as those predicted by the

HDS, come and go depending on the context. In contrast, personality disorders are enduring and pervasive across contexts.

Karen Horney (1950) argued that children develop three normal and spontaneous patterns of relating to others. The three trends have been labelled *moving away* from others, *moving against* others, and *moving toward* others. The *moving away* trend consists of coping mechanisms characterised by isolation and pulling away from others to avoid situations that provoke basic anxiety. The *moving against* trend has a basic hostility and mistrustfulness at its centre. People characterised by this trend cope with their basic anxiety by seeking power and control over others. The third trend of *moving toward* others is characterised by inhibition of own needs to appease others at almost any cost. Horney's theory explains why individuals consistently act in accordance with the derailment tendencies, even when it has obvious negative consequences (Coolidge, Segal, Benight, & Danielian, 2004; Foster & Gaddis, 2014).

Both the DSM personality disorders and the derived personality derailers of the HDS show a clustering around a three-factor structure readily interpretable using the three trends, a finding that has been replicated in several studies (Coolidge, Moor, Yamazaki, Stewart, & Segal, 2001; Furnham & Crump, 2014; Furnham & Trickey, 2011; Furnham, Trickey, & Hyde, 2012; Hogan & Hogan, 2001). Excitable, Cautious, Reserved, Skeptical, and Leisurely load onto the *moving away* trend, while Mischievous, Bold, Colorful, and Imaginative load onto the *moving against* trend. Diligent and Dutiful load onto the *moving away* factor, as presented in table 1.

However, Furnham (2008) and Carson, Shanock, Heggstad, Andrew, Pugh and Walter (2012), in exploratory factor analyses of the HDS, found four factors with eigenvalues

greater than 1. The first two factors corresponded to the *moving away* and *moving against* factors, while the last two factors were each defined by only one scale, namely Diligent and Dutiful.

The “dark side” personality traits are expected to cluster around subclinical versions of the three trends. Furnham, Trickey, and Hyde (2012) found *moving against* to be positively associated with managerial potential in a large working sample ($n = 4,943$). In a meta-analysis, Gaddis and Foster (2015) concluded that the *moving away* trend was negatively associated with overall managerial performance and leadership values. The *moving against* trend negatively predicted managerial trustworthiness, but showed a mixed relationship with overall *performance* and a positive relationship with leadership ability. *Moving toward* others did not predict overall managerial performance.

Personality and Job Level

Only a few of the studies on job level and personality have included dark side measures. Winsborough and Sambath (2013) used the HDS to test a sample of 151 New Zealand CEOs in an exploratory study. They found CEOs to have significantly higher scores on the Colorful scale, but lower on Dutiful, Diligent, Skeptical, Cautious, and Excitable scales, than the New Zealand norms. In a British sample, Palaiou and Furnham (2016), compared 128 CEOs to a large group of 4826 senior and middle managers in terms of the HDS personality derailers. They found CEOs to have higher scores than the other group on Bold and Colorful, but lower scores on Excitable, Cautious, Leisurely, and Dutiful, all with small or medium effect sizes. Furnham, Crump, and Chamorro-Premuzic (2007) found senior managers to be less Diligent and Dutiful, but more Colorful than junior managers.

Furnham and Crump (2015) found senior managers to be higher in Extraversion and Conscientiousness, but lower in Neuroticism and Agreeableness, than middle managers and non-managers. Furnham, Crump and Ritchie (2013) found high scores on Bold and Colorful, but low scores on Cautious, Reserved, and Leisurely to be associated with fewer years to promotion in organisations. Other studies have focused on the bright side personality traits of leaders (Abatecola, Mandarelli, & Poggesi, 2011; Herrmann & Nadkarni, 2014; Moutafi, Furnham, & Crump, 2007) and on correlations between the HDS and sector, career preference, and individual characteristics (Furnham, Hyde, & Trickey, 2012; 2014; Furnham, Treglown, Hyde & Trickey, 2014; Furnham & Trickey, 2011).

Linearity problematique

The primary conclusion from studies using the dark side traits to predict work behaviour is one of mixed, but interpretable results. Some factors, notably Bold and Colorful, are positively associated with leadership behaviours, while Excitable, Cautious, Leisurely, and Dutiful often predict negative work behaviours. An implicit assumption in much of the literature has been that the studied relationships are linear (Whetzel, McDaniel, Yost & Kim, 2010). However, the mixed findings may be due to non-linear relationships between dark side personality traits and work-related behaviour – the idea that derailers sometimes represent “strengths overused” (Kaiser & Overfield, 2011). Le, Oh, Robbins, Ilies, Holland and Westrick (2011) used polynomial logistic regression to demonstrate Conscientiousness and Neuroticism to have a curvilinear relationship with three performance dimensions. Both extremely low and high scores were associated with low job performance.

While most research has looked at non-linearity using the bright side traits (Cucina & Vasilopoulos, 2005; Robbins, Allen, Casillas, Peterson & Le, 2006; Vasilopoulos, Cucina, & Hunter, 2007), few studies have looked at non-linearity using dark side traits. Benson and Campbell (2007) found evidence of inverse U-shaped relationships between HDS scales and supervisory ratings of leadership performance. They found evidence of non-linearity, with the *moving against* scales showing the expected pattern, supporting the findings that elevated scores on these scales can be conducive for leadership. However, even though there were signs of non-linearity, heightened scores on *moving away* scales were always associated with negative leadership abilities. Kaiser, LeBreton, and Hogan (2015) extended these results and showed that both high *and* low scores were associated with extreme leadership behaviours. They proposed that dark side traits be reconceptualised as compound personality traits that extend bright side traits into maladaptive territory: Dark-side and bright-side traits overlap, but dark-side traits extend the continuum beyond the bright-side range.

Central hypotheses

Three hypotheses based on the higher factors were tested: *Moving Away from Others* will correlate negatively with job level because these traits are associated with introversion and social anxiety (H1) while *Moving Against Others* (H2) will positively predict job level because of the boldness, self-confidence and emotionality of those with these traits; and *Motiving Toward Others* (H3) will not be associated with job level. At the level of individual dark-side traits and based on studies reviewed above it is expected that job-level will correlate negatively with Excitable (H4), Skeptical (H5), Cautious (H6), Leisurely (H7), Diligent (H8) and Dutiful (H9). It is expected that Bold and Colorful will be positively correlated with job-level (H10 and H11). If there are signs of non-linearity, it should be most marked

for the central *moving against* scales. Therefore, it is hypothesised that the Bold, Mischievous, and Colorful scales will also show significant quadratic correlations with job-level, with middle managers scoring higher than both entry-level managers and executives (H12-H14).

Methods

Participants

In total, 264 participants who completed the HDS took part in the study. All participants were managers working in a range of Danish private companies within the transport, energy, financial, and manufacturing sectors. Participants were between 27 and 60 years old ($M = 43.20$, $SD = 7.16$), and 59 of the participants were female (22.3 %).

Instruments

Dark side personality. The Hogan Development Survey (HDS; Hogan & Hogan, 1997) was used as the measure of dark side personality. The test-retest reliability ranges from .64 to .75, and the scales are cross-validated with the Minnesota Multiphasic Personality Inventory (MMPI). Reliability estimates have been found to range from .50 (for Dutiful) to .78 (for Skeptical) with an average of .67 (Hogan & Hogan, 1997).

Job level. Job level information was gathered using a self-report item administered at the same time as participants completed the HDS. Three groups were created on this background: Entry-level supervisors, middle managers, and executives.

Procedure

The participants were tested by a Danish psychological consultancy over a 10-year period as part of the consultancy's work with clients in terms of assessment and development,

which included personal feedback on individual scores. Data used in the research were obtained in anonymized form with the permission of the consultancy.

Results

HDS and job level

Descriptive statistics for the three groups – entry-level supervisors, middle managers, and executives – are presented in table 2 with the results of comparisons of the HDS scores between groups. The highest mean scores were observed for Colorful, Diligent and Bold, and the lowest for Excitable and Cautious, mirroring previous studies and norms for the HDS (Hogan & Hogan, 1997; Winsborough & Sambath, 2013).

Because job-level is ordinally scaled with three categories, ANCOVA with orthogonal polynomial contrast codes were used to test for a linear and a quadratic trend in the data, respectively. In all 5 of the 11 linear contrasts were significant at $p < .05$ using an unadjusted p -value. Executives had higher scores than middle manager, who again had higher scores than entry-level supervisors on Imaginative ($d = .403$), Colorful ($d = .415$), and Bold ($d = .322$), while the opposite was true for Cautious ($d = -.352$) and Dutiful ($d = -.496$). No significant differences were found for Excitable, Skeptical, Reserved, Leisurely, Mischievous, or Diligent. The results of the test using quadratic contrasts showed significant non-linear relationships between job-level and the HDS for only two scales: Bold ($d = .250$) and Colorful ($d = .249$).

Insert Table 2

For both scales, entry-level supervisors and executives had significantly lower scores than middle managers. Only two of the scales, Excitable and Cautious, showed signs of a non-normal distribution of errors, with signs of positive skew. However, since the normality assumption is robust, and transformations of the scores did not change the result, the results of the first analysis are reported. Other assumptions were not violated, and there were no serious outliers that influenced the analysis. However, it was necessary to correct for multiple comparisons to avoid inflation in the risk of Type I error. Using Benjamini-Hochberg False Discovery Rate approach, the p -values for the 22 comparisons are sorted in ascending order and numbered. Then, each p -value is multiplied by the number of comparisons and divided by its rank. Keeping the false discovery rate at .05, the p -values for the quadratic trends for Bold and Colorful become non-significant. This supports H6, H9, H10, and H11. However, H4, H5, H7, H8 and H13 were rejected outright, and H12 and H14 were rejected after adjustment for multiple comparisons.

Horney's Types

The EFA used in this analysis was a principal component analysis (PCA) with oblique rotation, because the factors are theoretically expected to be correlated. The measures of appropriateness of factor analysis were both acceptable, with Bartlett's test of sphericity $\chi^2(55) = 585.309, p < .001$ and KMO = .650. Four factors with an eigenvalue over 1 were extracted, accounting for 64.421 % of the variance (table 3). However, a Scree-plot clearly indicated that factors I and II accounted for most of the variance (table 4). Scale loadings show that the first two factors are readily interpretable as *moving away* and *moving against*. The scales have satisfactorily high loadings. Factors III and IV are characterised by Dutiful and Diligent, respectively, and no other scale loads highly on these. As none of these factors seem to encompass *moving toward* people, H3 could not be tested.

Insert Table 3

Insert Table 4

To test hypotheses 1 and 2, the factors that were extracted from the PCA were used as predictors of the ordinal-scale Job Level using multinomial logistic regression, because the dependent variable is non-metric. A central advantage of this method is that it does not make assumptions of normality for the independent variables. The results of this analysis are reported in table 5 and 6.

Insert Table 5

Insert Table 6

The model fit was significantly better than one with only an intercept, $\chi^2(8) = 25.909, p = .001$. The results show that scoring higher on *Moving Against Others* was significantly related to a higher likelihood of being an executive rather than an entry-level supervisor ($p = .01$), while scoring higher on *Moving Away from Others* is significantly related to a higher likelihood of being an entry-level supervisor rather than an executive ($p = .05$). No significant differences for *Moving Away* and *Moving Against* were found for middle managers when compared to executives. These results lend moderate support to H1 and H2.

Discussion

While previous research has focused on job performance indicators (Gaddis & Foster, 2015) or compared the personality of CEOs to normative samples (Palaiou & Furnham,

2014; Winsborough & Sambath, 2013), this study looked at trends in personality derailers in the organisational hierarchy. Although the dark side personality traits are conceptualised as maladaptive characteristics, previous research has pointed to the fact that there might also be *bright sides* to the dark traits. Being interpersonally assertive and competitive, borderline hostile, are behavioural tendencies that are sometimes rewarded with quicker promotion and rise through organisations (Furnham, Crump & Ritchie, 2013). It has also been proposed that neither high nor low scores on the traits are adaptable, but that there is an *optimal* amount associated with each tendency.

The results confirmed some of the previous findings. Executives had a personality profile characterised by low levels of social inhibition, feelings of inadequacy, and eagerness to please, but high levels of expressiveness, need for attention and self-confidence. They were also found to score higher on a scale measuring creativity and unusual thinking, something that has not been found in earlier studies. Signs of non-linear trends were found, but were not entirely clear. The research now seems to converge on cognitive *prototypes* (Winsborough & Sambath, 2013) of leaders across the globe.

The findings regarding the three “neurotic trends” largely confirmed the hypotheses. Individuals with higher scores on the *Moving Against Others* trend were significantly more likely to be executives than to be entry-level supervisors. It is not implausible that the interpersonal behaviour related to the *Moving Against* trend, seeking control and dominating others, is conducive to promotion *up to a point*, and that this point is at the level of middle management. When greater demands and stresses are put on the individual as he or she advances, traits that were previously conducive to performance become detrimental. However, larger sample sizes and a true ratio scaled dependent variable are needed to test this proposition.

Individuals with higher scores on the *Moving Away* trend were significantly less likely to be executives than to be entry-level supervisors. They were also more likely to be executives than they were to be middle managers, but not significantly so. Not surprisingly, tendencies toward isolation and avoidance of others are not qualities that are conducive to promotion in organisations. Since no *Moving Toward* trend was identified in the data, H3 could not be tested directly. Whereas Dutiful is characterised by a reluctance to be critical of others and to be eager to please and rely on others, Diligent is essentially about inflexible perfectionism and being critical of others. The *Moving Toward* trend, which is characterised by seeking others’ acceptance and inhibiting own needs to appease others is much more akin to Dutiful than Diligent, if not almost identical to the scale. If this is the case, the results support the assertion that people with a dominating *Moving Toward* interpersonal style are both less likely to be executives than entry-level supervisors, and less likely to be executives than middle managers.

Although effect sizes were small, according to Cohen’s (1988) guidelines, the results for Cautious, Colorful and Dutiful confirmed the hypotheses associated with each scale, and

supports previously published results. In the UK sample, but not in the New Zealand one, there was a significant difference in the Bold scores for CEOs compared to the norm. This finding is supported by the results of the present study, with an almost identical effect size.

Surprisingly, no significant effect was found for Excitable, which has been one of the most consistent predictors of negative work outcomes in the literature. Part of the explanation for this finding is the skewed distribution. Furthermore, the mean score of 1.66 was lower than the general norm of 3.1 (Hogan & Hogan, 1997), and with little variance. However, *why* most participants did not vary according to job level is uncertain. Looking at the sectors from which the participants were drawn – transport, energy, financial, and manufacturing – does not imply an immediate explanation of this finding. They are not sectors characterised by workers with particularly low scores on Neuroticism (Palaiou & Furnham, 2014), which is closely related to Excitability. Although the HDS items are explicitly phrased to avoid bias (Hogan & Hogan, 1997), the Excitable scale, due to its intuitive undesirability, may be prone to impression management effects.

More interesting are the results for the quadratic trends for Bold and Colorful. Admittedly, since they did not reach significance after adjusting for multiple comparisons, however the observed non-linear effect, with the highest scores for both scales observed for middle managers, however, merits further research.

A surprising finding was that the Imaginative scale significantly – and positively – predicted higher job level. Virtually no effect has been found for Imaginative in the previous studies of job level, and it is negatively related to achievement orientation, trustworthiness, flexibility, and dependability (Gaddis & Foster, 2015). However, Furnham, Crump and Ritchie (2013) found Imaginative to be related to shorter times to promotion. A possible

explanation for these discrepant findings is that when Imaginative is found to be associated with positive work outcomes, it is because of high scores on the creative element of being imaginative.

Table 7 illustrates the results of the two previous papers using the HDS to look at differences between higher and lower job level. The results converge around a pattern indicating that organisational leaders as a group are characterised by an interpersonal orientation dominated by assertive, self-assured and sociable behaviour and low levels of interpersonal insecurity, scepticism, and need to please others.

Insert Table 7

The gender imbalance found in most studies in this field was a potential problem. Also, the cross-sectional data means that it is not possible to assert causality. Therefore, we cannot know if people become leaders based on their derailment tendencies, or if leaders express their personality tendencies differently at different job levels. A natural next step would be to include longitudinal data using the hypotheses derived from the current literature. Another limitation concerns the fact that the focus in this text has been on the leaders as individuals, and neglected the impact of organisational factors such as bureaucratic structures and the nature of followers (Schyns, 2015). This is a relevant limitation because failed leaders often fail *in context* (Padilla, Hogan, & Kaiser, 2007).

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Table 1

The 11 personality disorders and 3 clusters of the DSM system compared to the 11 factors of the HDS.

Horney trend	DSM/HDS	Features in the DSM-5	Features in the HDS
Moving away from	Borderline/Excitable	Instability of interpersonal relationships, self-image, and affect, and marked impulsivity.	Moody, hard to please, enthusiasm for people and projects intense but short-lived.
	Schizoid/Reserved	Detachment from social relationships, restricted range of expression of interpersonal emotions.	No interest in or awareness of others, aloof, detached, uncommunicative.
	Paranoid/Skeptical	Distrust and suspiciousness of others such that their motives are interpreted as malevolent.	Distrustful of others, doubtful of others' intentions, cynical.
	Passive-Aggressive/Leisurely	Negativistic attitudes, passive resistance to others' demands of adequate performance.	Argumentative, overly irritated by others, independent.
	Avoidant/Cautious	Social inhibition, feelings of inadequacy, hypersensitivity to negative evaluation.	Reluctant to take risks, fears negative evaluation and social rejection.
Moving against	Histrionic/Colorful	Excessive emotionality and attention seeking.	Dramatic, expressive, wanting to be noticed and be the centre of attention.

Moving toward	Narcissistic/Bold	Grandiosity (in fantasy or behavior), need for admiration, lack of empathy.	Very self-confident, grandiose feelings and over-valuation of own abilities.
	Antisocial/Mischievous	Disregard for and violation of the rights of others.	Risk-taking and excitement-seeking, deceitful, manipulative, and exploitative.
	Schizotypal/Imaginative	Social and interpersonal deficits marked by discomfort with, and reduced capacity for, close relationships and cognitive or perceptual distortions and eccentricities.	Creative and sometimes odd or unusual behavioural and thinking style.
Moving toward	Obsessive-Compulsive /Diligent	Preoccupation with orderliness, perfectionism, and mental and interpersonal control, at the expense of flexibility, openness, and efficiency.	Precise and perfectionistic, but inflexible about formal procedures, critical about others' performance.
	Dependent/Dutiful	Excessive fear of separation and need to be taken care of that leads to submissive and clinging behaviours.	Reluctant to be critical of others, eager to please, reliant on others for support and guidance.

Note: Passive-aggressive PD was present in DSM-III and –R but absent from DSM-IV onwards. Adapted from the DSM-5 (APA, 2013; p. 645-682) and the HDS Manual (Hogan & Hogan, 1997).

Table 2

Descriptive statistics, Effect Sizes, and *p*-value for comparisons between the HDS scales and job level. Controlled for gender and age.

	Entry-level supervisors	Middle managers	Executives			
HDS scale	<i>Mean(SD)</i>	<i>Mean(SD)</i>	<i>Mean(SD)</i>	<i>Unadjusted p-value</i>	<i>Adjusted p- value</i>	<i>d</i>
Excitable	1.55(1.74)	1.83(1.74)	1.61(1.63)			
Linear				.874		-.018
Quadratic				.164		.174
Skeptical	3.74(2.01)	3.63(2.33)	3.60(2.18)			
Linear				.502		-.084
Quadratic				.980		.003
Cautious	2.37(1.97)	2.09(2.19)	1.51(1.52)			
Linear				.005	.028*	-.352
Quadratic				.599		-.066
Reserved	4.39(2.16)	4.15(2.00)	4.14(2.23)			
Linear				.824		-.030
Quadratic				.537		-.077
Leisurely	2.84(1.98)	2.70(2.10)	2.57(1.89)			
Linear				.363		-.113
Quadratic				.975		-.003
Bold	7.08(2.06)	8.10(2.27)	7.76(2.55)			
Linear				.010	.044*	.322
Quadratic				.048	.151	.250
Mischievous	6.52(2.36)	7.03(2.09)	6.60(2.16)			
Linear				.272		.137
Quadratic				.174		.170
Colorful	7.60(3.11)	9.12(2.49)	8.89(2.61)			
Linear				.001	.011*	.415

Trends in job level and dark personality

Quadratic				.026	.095	.249
Imaginative	5.36(2.55)	5.82(2.40)	5.89(2.45)			
Linear				.001	.007**	.403
Quadratic				.707		.038
Diligent	9.14(2.58)	9.02(2.32)	8.61(2.28)			
Linear				.138		-.185
Quadratic				.611		.060
Dutiful	6.95(1.79)	6.45(1.92)	5.84(1.67)			
Linear				.000	.002**	-.496
Quadratic				.771		.000

Note: * $p < .05$, ** $p < .01$.

Table 3

Resultant loadings for Principal Component Analysis of HDS scales. Loadings < .30 suppressed

HDS Scale	Component			
	I	II	III	IV
Excitable	.557		.348	-.423
Skeptical	.578	.364		
Cautious	.688		.453	
Reserved	.711		-.338	
Leisurely	.696			
Bold		.772		
Mischievous		.586	-.369	
Colorful		.779		
Imaginative		.589		
Diligent				.899
Dutiful			.879	

Table 4

Extraction Sums of Squared Loadings

Component	Eigenvalue	% of variance	Cumulative %
I	2.443	22.206	22.206
II	2.160	19.639	41.846
III	1.364	12.403	54.249
IV	1.119	10.172	64.421

Table 5

Results from Multinomial Logistic Regression with scores on Horney's three types as predictors and Executive as reference category.

Effect	-2log of model	Chi-square	df	Sig.
Intercept only	580.07			
	554.16	25.909	8	.001

Table 6

Parameter estimates with Executive as reference category.

Job Level	Parameter	B	S.E.	Wald	Sig.	Exp(B)	95% CI for Exp(B)	
							Lower	Upper
Entry-level supervisor	Intercept	-.013	.161	.007	.935			
	Moving Away	.369	.164	5.069	.024*	1.446	1.049	1.993
	Moving Against	-.412	.163	6.422	.011*	.662	.481	.911
	III	.381	.163	5.477	.019*	1.463	1.064	2.013
	IV	.106	.154	.476	.490	1.112	.822	.1505
Middle manager	Intercept	.038	.157	.059	.809			
	Moving Away	.230	.162	2.010	.156	1.258	.916	1.729

Moving	.080	.160	.250	.617	1.083	.792	1.481
Against							
III	.317	.160	3.935	.047*	1.374	1.004	1.880
IV	.106	.154	.476	.490	1.112	.822	1.505

Note: * $p < .05$.

Dark Side and Job Level

Comparison of studies.

	Winsborough & Sambath NZ (2013)	Palaiou & Furnham UK(2016)	Oluf Gøtzsche- Astrup Jakobsen & Furnham Denmark(2017)
HDS			
Excitable	-	-	
Skeptical	-		
Cautious	-	-	-
Reserved			
Leisurely		-	
Bold		+	+
Mischievous			
Colorful	++	+	+
Imaginative			+
Diligent	--		
Dutiful	--	-	-

Note: + indicate positive relation to job level. +/- = small effect size, ++/-- = medium effect size based on Cohen's (1988) guidelines.