Dark Side Correlates of Job Reliability and Stress Tolerance in two large samples.

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Abstract

This study set out to examine how dark-side traits (derailers) are related to Stress Tolerance and Job Reliability. Over 8000 adult Britons from two separate assessment centres completed two validated questionnaires: the first measured the "dark-side" traits which can derail one's career (HDS: Hogan Development Survey) and the second two established, criterion-related, scales called the Occupational Scales (HPI: Hogan Personality Inventory): *Stress Tolerance* which is associated with the ability to handle pressure well and not be tense and anxious; *Job Reliability* which identifies people who are honest, dependable and responsive to supervision. Hierarchical regressions showed that some "dark-side" factors like Excitable and Cautious were related to both Occupational variables while being Leisurely, Bold, Mischievous and Colourful were powerful negative predictors of work reliability. The *Moving Against* People factor was the strongest predictor of Stress Tolerance and Reliability while the *Moving Away* from People factor was also a powerful predictor of Reliability. The results highlight "dark-side" traits (Excitable, Cautious, Mischievous, Imaginative) which were most related to two crucial features of successful management.

Introduction

The extensive data on the relationship between "bright-side" personality traits and job success suggests that three of the Big Five factors (namely Conscientiousness, Extraversion and Neuroticism) are significantly and systematically related to a range of work related measures including productivity, emergent and effective leadership success and satisfaction (Furnham, 2017, Judge, Cable, Boudreau & Bretz 1995; Judge, Higgins, Thoresen & Barrick, 1999; Judge, Piccolo & Kosalka, 2009). There are far fewer studies on "dark-side" personality trait correlates of job success and failure, which is the focus of this paper (Furnham, Trickey & Hyde, 2012).

This study examines "dark-side" trait correlates of two characteristics valued in all jobs, namely stress-tolerance and reliability. Organizations that list the competencies they look for, often include concepts like resilience (composed, calm under pressure, stress coping and tolerance) and integrity (reliability, honesty, good citizen behavior) (Furnham, 2016; Hogan, 2007). There is now an extensive interest in the concept and measurement of resilience (Treglown & Furnham, 2017; Treglown et al,, 2017). . It is about coping and "bouncing back" after significant, as well as minor, setbacks. Resilience is a prophylactic against failure: a way of adapting and thriving, rather than ruminating or falling into depression and stress-related illnesses.

These two characteristics are seen as important for all jobs, though possibly more so at senior levels. It has been suggested that these two characteristics are related to two personality traits namely Neuroticism and Conscientiousness which have been consistently shown to be the most powerful "bright-side" trait predictors of job success across a wide range of occupations (Furnham, 2017; Judge et al, 1995, 1999).

Dark Side Trait Factors

With the increasing interest in leadership and management failure (Dotlick & Cairo, 2003; Hogan, 2007) and the development of reliable instruments to measure the "dark-side" traits (Hogan, Hogan, & Warrenfeltz, 2007) there has been a growing literature of which dark-side variables might be predictable measures of worker derailment and failure across many senior level, jobs (De Haan & Kasozi, 2014).

There are also a number of recent studies that have looked at the paradox that dark-side factors are associated with leadership success as defined by such things as promotion rate and managerial level (Furnham, Crump & Ritchie, 2013; Kaiser, LeBreton, & Hogan, 2015). In this study we used the Hogan Development Survey (HDS) to measure the dark-side derailers. It assesses dysfunctional interpersonal behaviors which reflect distorted beliefs about others. These dispositions may over time become associated with a person's reputation and can impede job performance and career success. The HDS measures self-defeating expressions of normal personality that come and go depending on the context. The HDS uses the same taxonomic framework as earlier studies on the Personality Disorders.

Various relatively small-scale studies have used the HDS and have shown it to be a robust, reliable and valid instrument (De Fruyt et al., 2009; Furnham, 2006; Furnham & Crump, 2005; Khoo & Burch, 2008; Rolland & De Fruyt, 2003). There are now well over two dozen papers looking at the relationship of dark-side variables to issues in the workplace (Furnham, 2015, Furnham et al., 2016)

Some studies have noted that dark-side factors are associated with leadership potential and success as defined by such things as promotion to managerial level (Gaddis & Foster, 2015; Harms & Spain, 2015; Kaiser et al., 2015). One showed that whilst high scores on the derailers seem associated with speed of promotion they are also associated with later leadership failure (Furnham, Crump, & Ritchie, 2013). Further, there is evidence that the pattern of dark-side traits is very

different between job types and sectors (Furnham, Hyde & Trickey, 2014a). Three studies with data from different countries show that dark-side factors can help "climb the greasy pole" of leadership within organisations (Gøtzsche-Astrup, Jakobsen & Furnham, 2016; Palaiou & Furnham, 2015; Winsborough & Sambath, 2013).

Many researchers have pointed out the fact that with regard to many, but not all, dark-side factors, an "optimal" score (usually around 1 standard deviation above the mean) often leads to business success while a "maximal" score (often 2 standard deviations above the norm) can often lead to management problems (Furnham, 2015; Kaiser, Craig, Overfield & Yarborough, 2011; Kaiser et al., 2015). In this sense, dark-side factors can be associated with both managerial and leadership success *and* failure. As a result of the curvilinear hypothesis some studies have used quadratic analyses but found little evidence of those effects, finding that the relationship was linear (Gøtzsche-Astrup et al., 2016).

Most studies have tended to show that the HDS scale has three clear higher order factors labelled *Moving Against People* (Bold, Mischievous, Colorful, Imaginative), *Moving Away from People* (Excitable, Cautious, Reserved, Skeptical, Leisurely) and *Moving Toward People* (Diligent, Dutiful) (Furnham, Trickey & Hyde, 2012: Furnham, Hyde & Trickey, 2013, 2014a, 2014b). This higher order classification often makes for a more parsimonious analysis of issues and data. Further, they match nicely the Cluster A (Odd and Eccentric), B (Dramatic, Emotional and Erratic) and C (Anxious and Fearful) classification of the personality disorders (Furnham, 2016).

Occupational Potential Measures

The criterion measures in this study are two of the six Occupational Scales derived from the Hogan Personality Inventory (Hogan & Hogan, 1997): Stress Tolerance and Reliability. They were chosen because they measure aspects of behavior relevant to all jobs: namely the ability to deal with

stress effectively (i.e. low Neuroticism, high Adjustment) and being reliable, organized and hard-working (i.e. high Conscientiousness, Prudence). The former variables may be thought as occupational resilience and the latter Dependability and Responsibility.

The manual documents the derivation and psychometric properties of these two scales. The *Stress Tolerance Scale* has 25 items and was designed to identify persons who are stable and even tempered as opposed to tense, moody and unstable. The scale was shown to have good internal reliability (alpha =.87) and to correlate with selling success as measured by revenue *(N = 67, r =* .65). Over 30 studies have been published attesting to the scales' predictive validity (e.g. Muchinsky, 1993). The *Reliability Scale* has 18 items and was devised to identify people who are honest, dependable and responsive to supervision, not fault-finding and irresponsible. It has an internal reliability of .83 and the manual reports on validation studies based on performance and rating data across many different jobs including truck drivers, customer service representatives and rehabilitation therapists (Hogan & Hogan, 1997). Numerous studies have validated the scale (Woolley & Hakstian, 1992).

Hypotheses

Based on previous findings and reviews on dark-side correlations of work success (Furnham, 2015) it was predicted that high scores on *all five Moving Away* from people (Cluster A) factors (H1) namely Excitement (H1a), Skeptical (H1b) Cautious (H1C) Reserved (H1d) and Leisurely (H1e) would be negatively related to *both* Stress Tolerance and Reliability This hypothesis is based partly on the previous literature in this area (Furnham et al, 2012, 2013, 2016; Gaddis & Foster, 2015) as well as the data that suggests these dark-side factors are negatively associated with emotional stability and conscientiousness measured at both domain and facet level (Bastiaansen, Rossi, Schotte, & De Fruyt, 2011; Samuel & Widiger, 2007)

It was also predicted that all four *Moving Against* people (Cluster B) factors (H2) namely Mischievous (H2a), Bold (H2b), Colourful (H2c) and Imaginative (H2d) would be negatively related to Reliability. This is based on the extensive literature that suggests these dark-side traits are most strongly related to leadership derailment because of dishonesty, selfishness and the inability to form and maintain relationships (De Haan & Kasozi, 2014; Hogan, 2007). No hypotheses were formulated for the *Moving Towards* others (Cluster C) traits.

Method

Participants

Two studies with different samples were conducted with the same methodology. Group 1, there were 3502 participants: 2487 were male and 1015 were female. Their ages ranged from 22-66 years with a mean of 43.21 years (SD=17.14). Around 80% of them were at manager level. They came from a range of different industries and over 90% of the participants were based in United Kingdom offices.

For Group 2, there were 4957 participants: 3128 were male and 1829 female. Their ages ranged from 22-65yrs with a mean of 37.59 years (SD=3.58). Over 90% of them were native white Britons and all were at managerial level in large organisations.

Measures

1. *Hogan Personality Inventory* (HPI; Hogan, 1997) is a traditional personality measure which is composed of 206 true–false self-report items; it measures seven dimensions of normal personality based on reinterpretation of the FFM and is designed specifically for use with working adults. This measure also has six established criterion related scales called the occupational scales. This study

primarily concerns two: The Stress Tolerance scale has 25 items with an alpha of .86 and the Job Reliability scale has 18 items with an alpha of .75.

2. *Hogan Development Survey* (HDS, Hogan, 2009) is a non-clinical inventory including 168 items, designed to score for 11 scales, each grouping 14 true-false self-report items. These 11 scales measure common dysfunctional behaviours in the workplace that could impact negatively on a person's reputation, interpersonal relationships at work, and therefore derail careers. The scales are interpreted in terms of risk, with higher scores indicating an increased potential for work-related problems. These eleven scales/traits could also be grouped into three categories or higher order factors, which are, following Horney's (1950) three themes of "neurotic needs": *Moving Away From People* (when one manages stress by avoiding contact with others), *Moving Against People* (when one manages stress by dominating others) and *Moving Towards People* (when one manages stress by building alliances with others).

Procedure

Participants were tested by two different British based psychological consultancies over a 10-year period. Each tended to specialise in different sectors and devised assessment centres for mainly as part of middle management development programmes. Some of the assessments were used to inform promotion decisions. What was common to all the data on individuals were the tests used in this study. Each participant completed the measures on-line as part of their development programme and received personal detailed feedback on their score through an external psychological consultant. They also completed other measures including intelligence and creativity tests but these were not comparable across the two consultancies. Anonymised results were supplied to the researcher. Ethics permission was sought and received.

Results

The analysis strategy follows that of Furnham, Humphries and Zheng (2016). The eleven dark side factors were subjected to a Varimax rotated factor analysis to confirm the three higher order factor structure that has been shown may times before. This was confirmed for Group 1, but for Group 2 the final factor (Cluster C) split with Diligent and Dutiful loading on two separate factors (see Furnham et al., 2016 for details). We then computed both step-wise and hierarchical regressions.

Insert Table 1 and 2 here

Table 1 shows the correlations and the step-wise hierarchical regressions with the two occupational scale as the criterion variables. It also shows the results from the two studies for comparison. In Model 1, only age and gender were entered as variables and for Model 2, the 11 dark-side measures were also entered. All four regressions were significant. The F levels and Adjusted R Square are for the second step.

Regarding *Stress Tolerance* the results were broadly similar across both groups. The correlations showed a clear pattern: all five Cluster A disorders (Excitable to Leisurely) were strongly negatively associated with stress tolerance (especially Excitable and Cautious), while Cluster B disorders were modestly positively correlated, and only Dutiful from Cluster C associated with stress tolerance. The regressions however highlighted two disorders: Excitable and Cautious. as being most important. With few exceptions the betas were negative indicating that nearly all dark side factors were implicated in poor stress tolerance.

Regarding *Job Reliability* the correlations indicated that all Cluster A and B disorders were negatively associated with job reliability, while Cluster C disorders were positively related to it. The three disorders that had consistently high correlations in the two samples were Excitable, Mischievous and Imaginative. These three disorders were confirmed in the cluster analysis

Some, but not all the hypotheses were supported: H1a, H1c (but not for Job Reliability), H2a and H2d (but not for group 1)

Table 2 shows the regressions with the higher order factors. In both groups, factor 2 (Cluster A/ *Moving Away* from people) was the strongest predictor of stress tolerance. For Job Reliability it was Factor 1 (Cluster B/ *Moving Against* others) and Factor 2 which were equally powerful predictors of Job Reliability for both samples. In short, those with a tendency to be odd and eccentric and move away from people do not tolerate stress well, nor are they very reliable. Further, those who are dramatic, emotional and erratic tend to be unreliable at work.

After these analyses a series of quadratic analyses were run looking at job levels as done by Gøtzsche-Astrup et al. (2016). As they found there were fewer than chance significant effects suggesting no evidence of curvilinearity.

Discussion

This study confirmed that a number of dark-side factors are associated with poor Stress Tolerance and Job Reliability. Interestingly the Moving Against (Cluster B) traits were essentially unrelated to Stress Tolerance while the Moving Toward (Cluster C) variables were positively related to Job Reliability on the facet but not domain level.

Nearly all organisations wish to appoint leaders and managers who are resilient and able to cope with stress while also being reliable, responsive and conscientious. This study highlighted a

number of dark-side traits that are powerful negative predictors of these two essential job characteristics. Four of these will be discussed in more detail.

The single disorder most associated with both outcomes was *Excitable*. Excitable individuals are essentially those with subclinical Borderline Personality Disorder. They tend to have problems with their self-image often "splitting" their positive and negative views of themselves. They can vacillate between self-idealisation and self-abhorrence (Miller, 2008). They often show chronic instability of interpersonal relationships, self-image, and emotion. Hogan and Hogan (2001) note that they expect to be disappointed in relationships; they anticipate being rejected, ignored, criticized, or treated unfairly. They are on guard for signs that others have or will treat them badly. They are therefore neither predictable nor rewarding to deal with. As a result they have a lot of trouble building and maintaining a team - the fundamental task of leadership.

Dotlick and Cairo (2003) call these individuals *volatile* with sudden and unpredictable mood shifts. They document three tell-tale signs and symptoms. *First,* others "hold back" in their interaction (for fear of out bursts); *second,* everyone seems to be involved in distracting mood management and *third,* others become more distant. They recommend self-awareness and self-regulation for volatile leaders like empowering a trusted adviser to provide alerts like stepping step or out of particular situations. The heroic, idea generating, charismatic but volatile leader often makes a seriously bad manager.

For Stress Tolerance the second most powerful correlate was *Cautious/ Avoidant*. People with this "dark-side" trait appear to be social phobics in that they are socially isolated and withdrawn and seek acceptance, approval, affection. Hogan and Hogan (2001) note their fear being criticized, shamed, blamed, humiliated, or disgraced and that therefore they do not handle failure, rejection, or criticism well which this study documents. Miller (2008) calls those with Avoidant

tendencies "Shrinkers". He notes that because of their social inhibition they tend to lower level jobs with minimal interpersonal contact. He believes that avoidant bosses can do better if they "regularize" with better schedules and standardized procedures. This tends to reduce their anxiety and therefore improve their performance.

Dotlick and Cairo (2003) believe that there are three important subtle signs of this "dark-side" trait. *First,* an unwillingness to fire anyone. *Second*, lots of effort through committees, timetable etc. that achieves very little. *Third,* a serious, conspicuous and important absence of strong opinions in debate. They recommend that often these leaders need for prioritize, focus on past success, confront their worst fears and try something new. Clearly the ponderous, cautiousness, avoidant trait is a serious management derailer.

The two dark-side factors most clearly (negatively) related to Reliability were *Mischievous* and *Imaginative.* Hogan and Hogan (2001) note that Mischievous individuals (sub-clinical Psychpaths) expect that others will like them and find them charming: they expect to be able to extract favours, promises, money and other resources from other people with relative ease. However, they see others as merely to be exploited, and therefore have problems maintaining commitments and are unconcerned about social, moral and economic expectations. They are self-confident to the point of feeling invulnerable, and have an air of daring and sang-froid that others can find attractive and even irresistible. In industries where bold risk-taking is expected they can seem a very desirable person for senior management position (Furnham, 2015).

Miller (2008) calls these subclinical psychopathic bosses "predators" and notes that they are prototype cut-throat, chainsaw type, entrepreneurs. The interpersonal inquisitiveness is more about getting to know how to manipulate people than befriend them. He noted two types: the bright

devious, cunning conning natural manipulator and the less bright psychopathic boss is more likely to use bullying and intimidation.

The other powerful predictor was the *Imaginative* trait, which is essentially a subclinical schizotypal trait. Hogan and Hogan (2001) believe they think about the world in unusual and often quite interesting ways. They are constantly alert to new ways of seeing, thinking, and expressing themselves, unusual forms of self-expression. They often seem bright, colourful, insightful, imaginative, very playful, and innovative, but also as eccentric, odd, and flighty.

The Schizotypal/Imaginative leader can be curiously interesting and maybe fun to be around but are distractible and unpredictable and as managers they often leave people confused regarding their directions or intentions. They tend to mis-communicate in idiosyncratic and unusual ways. At their best, these people are imaginative, creative, interesting, and amazingly insightful about the motives of others, but at their worst, they can be self-absorbed, single-minded, insensitive to the reactions of others, and indifferent to the social and political consequences of their single-minded focus on their own agendas. Under stress and heavy workloads, they can become upset, lose focus, lapse into eccentric behaviour, and not communicate clearly. They can be moody and tend to get too excited by success and too despondent over failure. They do want attention, approval, and applause, which explains the lengths that they are willing to go in order to attract it.

It is interesting to note that all the "dark-side" traits, particularly *Excitable and Cautious* seem strong predictors of *both* poor stress management and reliability and hence worthy to be considered a "select out" variable. The *Moving Against* others factor which have been implicated with success in management and speed of climbing the greasy pole are only negatively implicated with reliability, not stress management.

It has been argued that dark-side trait measures can be very useful in selecting-out and coaching potential leaders and managers. This study has highlighted some of the traits that are most related to two salient occupational measures. It highlights, for instance, the fact that *Moving Against* people tend to be unreliable yet other studies have shown the extent to which these traits are often associated with success as measured by such things as promotion (Winsborough & Sambath, 2013).

One limitations of this study is that there was no detailed information on job, tasks and actual work performance data of individual participants. The study also suffered from method invariance which can often inflate the relationship between variables. There are always problems of inflated findings when both independent and dependent variables are self-report, though studies using observational or behavioral data tend to confirm hypotheses but with smaller effect sizes. Next, this study was cross sectional rather than longitudinal hence it is impossible to infer causality. In an ideal study one would have more objective and behaviour measures of job success and failure as well as longitudinal data which may show possible causal pathways and processes which explain how traits and values are associated with success in various jobs. With large samples small beta's and r's are significant yet in these samples many were sufficiently high to lead to a more confident conclusions.

There are some practical implications of these results. First, the (dark-side) markers of resilience (stress tolerance) are different from those of honesty (job reliability). However a few "dark-side" traits such as *Excitable* and *Cautious* are markers of both poor stress tolerance and job reliability and therefore particularly worth exploring in the selection process. Strong candidates with these two elevated "dark-side" scores may benefit form counselling or coaching. Next, given the powerful negative relationship between *Mischievous* and job reliability it may be wise to always assess this factor to prevent management failure and derailment.

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Table 1
Results of Regressions for Two Occupational Scales with Individual Dark Side Traits.
Number in bold signify the most significant, high loading values.

Group 1	Stress Tolerance			Job Reliability		
	r	Beta	t	r	Beta	t
1. Age		.03	2.64		-.04	-2.92
Gender		**-.10**	-8.49		**-.05**	-3.61
2. Excitable	**-.58**	**-.51**	-37.63	**-.39**	**-.31**	-20.81
Skeptical	**-.25**	-.01	-0.75	**-.28**	-.17	-10.83
Cautious	**-.49**	**-.31**	-20.35	-.13	-.05	-2.92
Reserved	-.15	.06	4.65	-.16	-.03	-1.70
Leisurely	**-.27**	-.04	-3.27	**-.21**	-.03	-2.34
Bold	.01	-.00	-0.05	**-.20**	.04	2.69
Mischievous	.06	-.00	-0.14	**-.43**	**-.30**	-19.06
Colourful	.05	-.07	-4.21	**-.21**	-.07	-3.98
Imaginative	-.13	-.07	-5.19	**-.39**	-.19	-13.01
Diligent	-.02	.02	1.96	.09	.11	8.03
Dutiful	**-.21**	-.06	-4.47	.08	.06	4.25
F(13, 3498)=		**321.20**			**218.52**	
Adj R2		.54			.45	

Group 2	Stress Tolerance			Job Reliability		
	r	Beta	t	r	Beta	t
1. Age		.01	1.19		-.01	-1.28
Gender		**-.08**	-8.45		**-.04**	-3.56
2. Excitable	**-.69**	**-.51**	-44.71	**-.42**	**-.32**	-23.25
Skeptical	**-.30**	-.03	-3.09	**-.38**	-.13	-9.67
Cautious	**-.60**	**-.32**	-24.95	-.11	-.01	-0.64
Reserved	-.19	-.07	6.57	-.18	-.05	-3.92
Leisurely	**-.30**	-.05	-5.23	**-.24**	-.06	-4.81
Bold	.08	.02	1.94	**-.20**	.04	3.09
Mischievous	.08	.05	4.24	**-.43**	**-.28**	-20.50
Colourful	.12	-.05	-4.11	**-.23**	-.05	-3.17
Imaginative	-.11	-.10	-9.14	**-.43**	**-.23**	-18.39
Diligent	-.03	-.01	-0.88	.15	**.10**	8.61
Dutiful	**-.24**	-.07	-6.62	.09	-.03	2.61
F(13, 4942)=		**569.81**			**298.75**	
Adj R2		.60			.44	

Table 2
Results of Regressions for Two Occupational Scales with Clustered Dark Side Traits

Group 1	Stress Tolerance		Job Reliability	
	Beta	t	Beta	t
. Age	.03	2.02	-.03	-2.34
Gender	-.16	-11.83	-.06	-4.65
. Factor 1 (B)	-.02	-1.58	**-.44**	**-32.63**
Factor 2 (A)	**-.57**	**-41.66**	**-.41**	**-30.92**
Factor 3 (C)	-.12	-9.14	-.14	-10.59
Model 1	F(2, 3498)=56.92 ; Adj R2= .03		F(2, 3498)= .12; Adj R2= .00	
Model 2	F(5, 3498)= 395.40; Adj R2= .36		F(2, 3498)= 430.73; Adj R2= .38	

Group 2	Stress Tolerance		Job Reliability	
	Beta	t	Beta	t
. Age	.01	.72	-.01	-.78
Gender	-.12	-11.72	-.03	-3.01
. Factor 1 (B)	.03	3.27	**-.44**	**-39.60**
Factor 2 (A)	**-.65**	-65.99	**-.43**	**-39.35**
Factor 3 (Dil)	.11	10.96	.16	**14.61**
Factor 4 (Dep)	**-.25**	**-25.46**	.07	6.23
Model 1:	F(2, 4942)=87.81 ; Adj R2= .03		F(2, 4942)=2.50 ; Adj R2= .00	
Model 2:	F(6, 4942)= 911.51.40; Adj R2= .53		F(6, 4942)= 562.22; Adj R2= .41	

Note the letter (A,B,C) attached to each factor indicates the DSM Cluster that the factor represents. A is Moving Away, B Moving Against and C Moving Towards Others