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Title Innovation and the 'Dark Side' of Personality: Dysfunctional Traits and their  
Relation to Self-Reported Innovative Characteristics

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## ABSTRACT

This paper explores the relationship between self-reported innovative characteristics and dysfunctional personality traits. Participants (N = 207) from a range of occupations completed the Innovation Potential Indicator (IPI) and the Hogan Development Survey (HDS). Those who reported innovative characteristics also reported the following dysfunctional traits: Arrogant, Manipulative, Dramatic, Eccentric; and lower levels of Cautious, Perfectionist and Dependent. A representative approximation of the higher order factor “moving against people” (Hogan & Hogan, 1997) was positively associated with innovative characteristics. It is concluded that innovation potential may be viewed as a positive effect of some otherwise dysfunctional traits, most notably those encompassed under the second-order HDS factor ‘moving against people’.

## Innovation and Personality: The Dark Side

Do people who positively endorse characteristics related to innovation also endorse specific dysfunctional traits? The often “positive” conceptualization of innovation neglects some of the difficulties involved in managing innovators, despite research pointing to some negative personality traits associated with creativity, a subset of innovation (e.g. Eysenck, 1993; 1995; Burch, 2006). Part of the reason that this association is unclear (Oldham & Cummings, 1996) is due to three generally consistent limitations of research in this area. Firstly, the definition and assessment of innovation has been unclear, with studies tending to focus on the generation of ideas (creativity), rather than on their implementation (Axtell, Holman, Unsworth, Wall, Waterson, & Harrington, 2000). Secondly, the assessment of negative personality traits tends to be broad factors from general models of personality, not explicitly examining negative characteristics in the general population. Thirdly, research in this area typically involves sampling from abnormal or eminent populations, which limits generalisability of findings to the working population. This paper addresses these limitations and presents findings from a study examining the relationship between self-reported innovative characteristics and dysfunctional personality traits assessed by the Hogan Development Survey (HDS) in a sample of working adults from the UK general population.

Historically there has been confusion over the definition of innovation. One problem has been that the terms ‘creativity’ and ‘innovation’ have been used interchangeably (Patterson, 2002; Amabile, 1983; Anderson & King, 1993). A useful perspective is provided by Kirton (1978), who distinguished between adaptive and innovative cognitive styles. The innovative style is characterized by generation of genuinely novel approaches and ideas, and the adaptive style by

working within the constraints of existing approaches. Kirton (1978) suggested that within each style, levels of creativity were consistent, but expressed in different ways (the so-called level-style distinction). In this theory then, innovation represents a characteristic style of expressing one's creativity.

In more recent applied research, the definition of innovation has been refined to encompass the application of the outcomes of the creative process (Mumford, 2003; Burch, 2006; Runco, 2004). In these definitions, novel solutions to problems must be implemented in order to constitute innovation (Axtell et al, 2000). An acceptable definition of innovation is offered by West and Farr (1990, p. 9) "the intentional introduction and application within a role, group or organization of ideas, processes, products or procedures, new to the relevant unit of adoption, designed to specifically benefit the individual, group, organization or wider society."

Whilst many studies use divergent thinking tests to measure creativity (e.g. Martindale & Dailey, 1996), this method has been criticized for not fully capturing the concept (Sternberg & Lubart, 1996; Nicholls, 1972). However, more recent work stipulates that divergent thinking tests are predictors of creativity rather than synonymous to it (Runco, 2006). Nevertheless, one problem for their use in measuring innovation is the omission of the domain of idea implementation (Patterson, 2002; Port, 2004). Patterson (1999) argues that *innovation* might be more accessibly measured in occupational populations as a set of personality characteristics that relate to the propensity to innovate in the workplace. Patterson's framework describes traits relevant to the generation *and* application of ideas in organizations, and conceptualizes this as "innovation potential". This is an important redefinition because it acknowledges the social context of the workplace and the fact that managerial and organizational factors may influence employee

creativity, and therefore innovation (Oldham & Cummings, 1996; Isaksen, Lauer, Ekvall & Britz, 2001). A person may have the potential to innovate, but without some environmental support this propensity may never be displayed.

The model is measured by a self-report instrument: the Innovation Potential Indicator (IPI; Patterson, 1999). The four factors of the IPI are: Motivated to Change (MTC); Challenging Behavior (CB); Adaptation (AD) and Consistency of Work Styles (CWS), representing the motivational, social, cognitive and action components of innovation respectively. The scales and their meanings are described in Table 1. The IPI adopts a psychometric trait approach (e.g. Kirton, 1980), with items designed to assess the degree to which people endorse self-reported attributes that may contribute to or facilitate innovative behavior. The validity of the IPI has been demonstrated in prior studies where it has been shown to relate to managerial reports of innovative behavior (e.g. Patterson, 1999; Francis-Smythe, Tinline & Allender, 2002; Port, 2004).

TABLE 1  
*The four IPI factors*

Scale	Description
<b>Motivated to Change (MTC)</b>	Defined as an intrinsic motivation to change, characterized by persistence and ambition. <i>Positively related to innovation</i>
<b>Challenging Behavior (CB)</b>	Describes a person's tendency to challenge others' points of view. It includes risk-taking behavior and non-conformity. <i>Positively related to innovation</i>

	Relates to tackling issues in evolutionary rather than revolutionary ways.
<b>Adaptation (AD)</b>	Focused on working within existing boundaries rather than novelty. <i>Negatively related to innovation</i>
<b>Consistency of Work Styles (CWS)</b>	Associated with a methodical and systematic approach to work and conforming to organizational norms. <i>Negatively related to innovation</i>

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### Innovation and personality

Over the past few decades the empirical work on the personality characteristics of innovators has revealed a reasonably stable set of core characteristics that consistently relate to innovation and creativity (Patterson, 1999; 2002; King, Walker, & Broyles, 1996). These include: self-confidence, high energy, independence of judgment, autonomy and toleration of ambiguity (Barron & Harrington, 1981; Sternberg & Lubart, 1991). Models of personality have allowed an integration of some of these findings, such as the Five Factor Model (FFM) (See Patterson, 2002, for a review of this relationship) and Eysenck's three-factor model.

Eysenck's (1993) three-factor model of personality consists of three traits: Neuroticism, Extraversion and Psychoticism. Within this model, Eysenck (1993; 1995) claims that psychoticism, a trait associated with dysfunctional characteristics, is most closely linked to creativity. Although creative people are not necessarily psychotic, they may have the same cognitive tendency as psychotic people, for example, over-inclusive thinking (Runco, 2004). There are three lines of evidence that Eysenck (1995) uses to support his view. The first line of



evidence is genetic. Several studies have shown that descendents of psychotic parents show higher levels of creativity than do matched controls, e.g. Heston (1966) and McNeil (1971). The second line of evidence is the association between psychoticism and measures of creativity. Psychoticism positively correlates with various measures of creativity such as: unusual and rare responses in word association tests (Merten, 1993; Eysenck, 1994; Martindale & Dailey, 1996); a preference for complexity on the Barron Welsh Art Scale (Eysenck, 1994); and divergent thinking abilities on the Wallach-Kogan Creativity test (Woody & Claridge, 1977). The third line of evidence is the correlation of psychoticism with creative achievement. It has been found that artists measure higher on psychoticism than non-artists (Götz and Götz, 1979a); and, more successful artists score higher on psychoticism than less successful artists (Götz & Götz, 1979b). Using such lines of evidence Eysenck (1995) identifies a set of characteristics that appear to be associated with creativity: “irresponsible, disorderly, rebellious ... rejecting of rules, uncooperative, impulsive and careless” (p. 233).

There has long been a link between creativity and ‘madness’ (Richards, 1981; Ludwig, 1988); although more recent research has implied an association between creativity and schizotypal personality (e.g. Burch, 2006; Burch, Pavelis, Hemsley & Corr, 2006). Because creativity and innovation reflect originality, and original behavior necessarily goes against behavioral norms, innovative behavior could logically be conceptualized as deviant behavior (Runco, 2004).

This literature points to the association of creativity with negative or dysfunctional traits; a finding that could have important implications for managing innovation in organizations. A logical extension of this work is to examine the association of dysfunctional traits with characteristics that relate to innovation potential, identified by Patterson. Furthermore, given that

much of the early work examined eminent people such as artists or scientists (e.g. Götz & Götz, 1979a; 1979b); such research can be limited in helping to understand innovation potential in an occupational setting. Thus research conducted within an occupational context is essential.

### Present Research

The present research investigated the relationship between innovative characteristics, assessed by the IPI, and dysfunctional traits, assessed by the HDS, within an occupational sample. In previous studies, negative personality traits have been inadequately defined and assessed. The constructs of the Eysenck Model are broad, with the trade-off that assessing these reduces fidelity in understanding the personality-innovation relationship. Therefore this research uses the Hogan Development Survey (HDS) designed to assess eleven common dysfunctional dispositions of employed adults (Hogan & Hogan, 1997). These qualities are referred to as ‘dark side’ characteristics, and are extensions of normal personality but not pathological per se (Hogan, 1994). The dimensions of the HDS have their roots in the personality disorder taxonomies (see Hogan & Hogan, 1997). However, the HDS is used in every day contexts within careers; reflecting themes from the work environment (Hogan & Hogan, 2002).

There are eleven HDS dimensions (see Table 2) and the manual reports a three factor structure underlying the test (Hogan & Hogan, 1997). The first component (Volatile, Mistrustful, Cautious, Detached and Passive-aggressive) corresponds to the ‘moving away from people’ theme in Horney’s (1950) model of flawed interpersonal characteristics. The second component (Arrogant, Manipulative, Dramatic and Eccentric) represents the ‘moving against people’ theme (Horney, 1950). The third component (Dependent and Perfectionist) represents the ‘moving

toward people' theme (Horney, 1950). These factor labels are used in setting the hypotheses in the present research.

In order to set hypotheses, scale descriptors for the HDS dimensions (see Table 2) were examined to identify components relevant to innovation potential (see Table 1). For example the Cautious dimension is described as 'resistant to change and reluctant to take chances' which is likely to relate negatively to innovation potential, whilst the Dramatic dimension is described as 'impulsive, dramatic and unpredictable' which is likely to relate positively to innovative potential. Thus Hypotheses 1 and 2 were articulated as follows:

*Hypothesis one:* The HDS dimensions Arrogant, Manipulative, Dramatic and Eccentric will be positively associated with MTC and CB; and negatively associated with AD and CWS.

*Hypothesis two:* The HDS dimensions Cautious, Dependent and Perfectionist will be negatively associated with MTC and CB; and positively associated with AD and CWS.

Examining the content of the higher order factors demonstrated that the 'moving against people' and the 'moving towards people' factors seem to be most consistently characterized by descriptors relating to innovation. Descriptors for the former suggest that it is positively related to innovation potential and the latter, negatively. A factor analysis can be used to examine the underlying factor structure of the HDS to determine associations between the higher order factors and the IPI scales. Therefore Hypotheses 3 and 4 were articulated as follows.

*Hypothesis three:* The HDS factor 'moving against people' will be positively associated with MTC and CB; and negatively associated with AD and CWS.

*Hypothesis four:* The HDS factor 'moving towards people' will be negatively associated with MTC and CB; and positively associated with AD and CWS.

TABLE 2

*The eleven HDS dimensions and descriptors.*

<b>Higher order factor</b>	<b>Dimension</b>	<b>Description</b>
<b>Moving Away from people</b>	<b>Volatile</b>	Inconsistent and moody; enthusiastic about new projects, but disillusioned with setbacks.
	<b>Mistrustful</b>	Cynical, distrustful, wary, over sensitive to criticism, and questioning of others' intentions.
	<b>Cautious</b>	Resistant to change and innovation, reluctant to take chances for fear of being criticized or blamed.
	<b>Detached</b>	Self-absorbed and withdrawn, lacking interest or awareness of other peoples' feelings.
<b>Moving Against People</b>	<b>Passive-aggressive</b>	Autonomous and preoccupied with own goals, indifferent to peoples' requests and irritable when others persist.
	<b>Arrogant</b>	Extremely self-confident, with an expectation to be respected. Unwilling to admit mistakes or listen to advice.
	<b>Manipulative</b>	Charming yet deceitful, seeming to enjoy taking risks and pushing the limits. Careless about rules and conventions.
	<b>Dramatic</b>	Expressive, dramatic, and wanting to be noticed. Impulsive, unpredictable and gregarious.
	<b>Eccentric</b>	Acts and thinks in creative and unusual ways, with strikingly original insights; set apart from their more conventional peers.

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<b>Moving towards people</b>	<b>Perfectionist  Dependent</b>	Careful, precise, conservative and meticulous; critical of others' performance.  Eager to please, reliant on others for support and unwilling to take independent action.
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## METHOD

### Participants

A convenience sample of 207 participants (response rate = 68%) was obtained from a range of occupational settings: business and professional services (n = 87); marketing (n = 34); media (n = 21); public administration (n = 31); and retail (n = 34) sectors. Of these participants, 47.8% were male (n = 99) and 52.8% were female (n = 108). The mean age was 30.5. There were no significant differences by age, gender or type of organization between responders and non-responders. All participants voluntarily participated in this research.

### Measures

#### *Innovation Potential Indicator (IPI)*

The IPI is a 30-item self-report inventory used to measure characteristics associated with innovation: a person's potential to innovate in the workplace. The IPI focuses on both the generation and implementation of ideas and consists of behavioral statements asking about preferred style of working. Respondents are required to indicate the extent to which they agree with items along a five-point scale, from 1 (strongly disagree) to 5 (strongly agree). Nine items relate to MTC; eight items relate to CB; seven items relate to AD and six items relate to CWS.

The four IPI scales demonstrated moderate, but acceptable reliability in this study (mean  $\alpha = 0.64$ ).

### *Hogan Development Survey (HDS)*

The HDS is a 154-item self-report inventory. It contains 11 dimensions, each with 14 items, designed to assess 11 dysfunctional dispositions of employed adults (Hogan & Hogan, 1997; 2002). The items reflect themes from an occupational context, making it suitable for this research.

The HDS consists of a set of behavioral statements and respondents are asked to ‘agree’ or ‘disagree’ with the items. Dimension scores range from 0 – 14 and higher scores represent more dysfunctional tendencies. The majority of respondents received at least one score in the 90<sup>th</sup> percentile (classified as a ‘high’ score), consistent with publisher’s recommendation (Hogan & Hogan, 1997). In this sample, only 10% of respondents did not achieve any score above the 90<sup>th</sup> percentile of any of the eleven dimensions. The HDS scales demonstrated a mean alpha reliability of 0.62 (see Table 3). Whilst this value was deemed acceptable for the analyses, attention is drawn to the Dependent, Passive-Aggressive and Detached scales, which demonstrated low reliability compared with the remaining scales (although values in this sample were commensurate with those reported in standardization studies e.g. Hogan & Hogan, 1997). The data format supplied from the administration of the HDS meant that item statistics could not

be examined in order to investigate these reliabilities<sup>1</sup>. Results from these scales are therefore interpreted with some caution.

### Procedure

A convenience sample of 315 participants were contacted via email and asked to be involved in this research. They completed the IPI and the HDS and returned them by mail to the first author. A follow-up email was sent to those participants who had not responded two weeks following the mailing of the survey pack. They were not contacted again. The usable returns represented a response rate of 68%. Six questionnaires were incomplete and therefore unusable; consequently analyses were conducted on 207 questionnaires.

### Analyses

In order to determine the relationship between innovative characteristics and dysfunctional traits, correlational analyses were computed between the IPI factors and HDS dimensions. The factor structure of the HDS was examined at the scale level of analysis using principal components analysis and extracted components correlated with the IPI factors.

## RESULTS

The means, standard deviations and alpha coefficients of and correlations between the four IPI factors and 11 HDS dimensions are displayed in Table 3. Due to the multiple significance tests performed, a Bonferroni correction (Field, 2000) was used to work out the appropriate

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<sup>1</sup> Information held with the publisher

significance level to be applied to this data; which indicated an alpha of 0.001 should be applied to the correlations. Therefore, in Table 3, the emboldened correlations indicate those that remain significant following the Bonferroni correction.

TABLE 3

*Means, standard deviations, alpha coefficients for, and correlations between, the IPI factors and HDS dimensions*

Scale	Mean	SD	$\alpha$	MTC	CB	AD	CWS
MTC	30.03	4.14	.59				
CB	23.97	4.00	.60	-			
AD	20.58	3.56	.63	-	-		
CWS	19.69	3.68	.74	-	-	-	
Volatile	5.24	2.96	.61	-.15*	.05	.03	-.03
Mistrustful	6.03	2.35	.58	-.04	.15*	.05	.11
Cautious	5.51	3.13	.76	<b>-.48**</b>	<b>-.24**</b>	<b>.35**</b>	<b>.23**</b>
Detached	4.37	2.04	.54	-.15*	.13	.05	-.01
Passive-aggressive	6.09	2.26	.46	-.06	.17*	.02	.08
Arrogant	6.72	2.73	.67	<b>.29**</b>	<b>.27**</b>	<b>-.22**</b>	-.02
Manipulative	6.93	2.53	.58	<b>.36**</b>	<b>.41**</b>	<b>-.30**</b>	<b>-.29**</b>
Dramatic	7.51	3.12	.72	<b>.34**</b>	<b>.31**</b>	<b>-.30**</b>	-.19**



Eccentric	6.12	2.58	.66	<b>.24**</b>	<b>.37**</b>	-.13	-.16*
Perfectionist	8.56	3.15	.77	-.08	<b>-.27**</b>	<b>.22**</b>	<b>.62**</b>
Dependent	8.24	2.20	.50	<b>-.34**</b>	<b>-.40**</b>	<b>.33**</b>	.08

*Note.* N = 207. Significant correlations shown in bold following Bonferroni correction.

p < .05; \*\* p < .01 (2-tailed).

The first two hypotheses concern the relationship between innovative characteristics (IPI) and dysfunctional traits (HDS). In relation to hypothesis one, Table 3 reveals that Arrogant, Manipulative, Dramatic and Eccentric are positively ( $p < .001$ ) correlated with MTC and CB. Manipulative is negatively ( $p < .001$ ) correlated with AD and CWS. Arrogant is negatively ( $p < .001$ ) correlated with AD, but is not related to CWS ( $p = .24$ ). Dramatic is negatively correlated with AD ( $p < .001$ ); but is not related to CWS ( $p = .006$ ). Eccentric not related to either AD ( $p = .07$ ) or CWS ( $p = .02$ ). Overall, these results show partial support for hypothesis one.

In relation to hypothesis two, Table 3 reveals that both Cautious and Dependent are negatively ( $p < .001$ ) correlated with MTC and CB. Perfectionist is negatively ( $p < .001$ ) correlated with CB; but not related to MTC ( $p = .23$ ). Cautious and Perfectionist are positively ( $p < .001$ ) correlated with AD and CWS. Dependent is positively correlated with AD ( $p < .001$ ); but not related to CWS ( $p = .26$ ). With the exception of the non-significant relationship between Perfectionist and MTC, and Dependent and CWS; these results support hypothesis two. In summary, the above correlations provide support for hypotheses one and two suggesting that there are significant relationships between innovative characteristics and dysfunctional traits.

The 11 HDS dimensions had a Kaiser-Meyer-Olkin measure of sampling adequacy of 0.68 and a significant Bartlett test of sphericity (527.90,  $p < .0001$ ), indicating these data were appropriate for Factor Analysis (Ferguson & Cox, 1993). They were subsequently entered into a principal components analysis. Item level data was unavailable for this purpose<sup>2</sup>. Four factors had eigenvalues over one. However extracting factors with eigenvalues over one can be unreliable and prone to extracting factors that are not required (Ferguson & Cox, 1993; Ferguson, 2001). Ferguson & Cox (1993) suggest parallel analysis as an alternative extraction method. This involves comparing a randomly created set of eigenvalues with those produced by the observed data. The two sets of eigenvalues are plotted against the number of variables; and the number of extractable factors is the point before these cross. Zwick & Velicer (1986) showed that this method is the most accurate when compared to four others. A series of parallel analyses at both the 50<sup>th</sup> and 95<sup>th</sup> percentiles indicated a three-factor solution. Based on this evidence three factors were extracted and entered into a rotated solution with varimax rotation. Factor scores were then calculated using the regression equation method based on the rotated solution.

The factor loadings of the HDS primary dimensions on these three extracted factors are presented in Table 4. The rotated solution accounts for 55.0% of the variance, and indicates a three-factor structure underlying the data. The rotated solution shows only two secondary loadings above 0.35, with the Cautious dimension loading on both Factors 1 and 2; Dependent loading on both Factors 1 and 3. The factor structure is close, but not identical to that reported in the publisher manual (Hogan & Hogan, 1997).

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<sup>2</sup> Information held with the publisher

TABLE 4

*Factor loadings of HDS primary dimensions on four extracted factors from principal components analysis*

Primary Scale	Factor		
	I	II	III
Dramatic	<b>.83</b>		
Manipulative	<b>.79</b>		
Arrogant	<b>.68</b>		
Cautious	<b>-.66</b>	.50	
Eccentric	<b>.55</b>		
Perfectionist	<b>-.32</b>		
Volatile		<b>.79</b>	
Mistrustful		<b>.68</b>	
Detached			<b>.77</b>
Dependent	-.38		<b>-.64</b>
Passive-aggressive			<b>.62</b>

*Note.* Primary factor loadings shown in bold. Absolute factor loadings under 0.35 not reported.

For hypotheses three and four, the factor structure reported in the HDS manual was not exactly replicated, with dimensions loading slightly differently in this sample. For hypothesis three, the first extracted factor is a reasonable approximation of the HDS factor ‘moving against people’. For hypothesis four the ‘moving towards people’ factor did not emerge as expected.

Table 5 displays the correlations between the extracted factors and the IPI factors. Once again, a Bonferroni correction was applied: in this instance, an alpha level of 0.004 was deemed to be appropriate. In Table 4, the emboldened correlations indicate those that remain significant following the Bonferroni correction. In relation to hypothesis three MTC and CB are positively ( $p < .001$ ) related; and AD and CWS are negatively ( $p < .001$ ) related to the first extracted factor (Dramatic, Manipulative, Arrogant, Cautious, Eccentric, Perfectionist).

In relation to hypothesis four, the factor ‘moving towards people’ did not emerge as expected. However, further correlations that were not hypothesized were found: MTC is negatively ( $p = .001$ ) related to the second extracted factor (Volatile, Mistrustful); and CB is positively ( $p < .001$ ) related to the third extracted factor (Detached, Dependent, Passive-Aggressive).

TABLE 5

*Correlations between the extracted HDS factors and the IPI factors*

	Factor 1	Factor 2	Factor 3
MTC	<b>.47**</b>	<b>-.23**</b>	.06
CB	<b>.47**</b>	.05	<b>.31**</b>
AD	<b>-.38**</b>	.16*	-.10
CWS	<b>-.23**</b>	-.08	.03

*Note.* N = 207. Significant correlations shown in bold following Bonferroni correction.

\*  $p < .05$ ; \*\*  $p < .01$  (2-tailed).

## DISCUSSION

The aim of this study was to explore the relationship between self-reported innovative characteristics and dysfunctional traits. Arrogant, Manipulative, Dramatic and Eccentric correlated positively; and Cautious, Dependent and Perfectionist correlated negatively with innovative characteristics, supporting the first two hypotheses. It is important to note that these dispositions are only problematic in their extreme and manifest as dysfunctional behaviors for scores above the 90<sup>th</sup> percentile (according to Hogan & Hogan, 1997). For example, the mid range of the Arrogant dimension includes socially confident and energetic behaviors, whilst the mid range of the Dependent dimension includes trustworthy and friendly behaviors. It can therefore be inferred that problem characteristics may only be reported by those who also report either very high or very low innovative characteristics. Thus findings indicate that organizations may only need to be aware of the potential dysfunctional traits associated with particularly high or low innovation potential.

In relation to hypotheses three and four, the predicted factor structure did not emerge. This is consistent with work suggesting that in some organizational samples factor structures do not always replicate as reported by test publishers (Anderson & Ones, 2003). Nevertheless the first extracted factor (see Table 4) is a reasonable approximation of the HDS factor 'moving against people'. This factor correlates significantly with all the IPI scales, supporting hypothesis three. Those individuals who report characteristics related to high innovation potential may also be likely to report undesirable characteristics such as unpredictability, impulsiveness, and low rule

consciousness. This association is consistent with previous research citing similar relationships (e.g. Eysenck, 2003; Baron & Harrington, 1981).

The factor structure loaded on three separate factors; however the ‘moving towards people’ factor did not emerge as predicted. Although not hypothesized, the second extracted factor (Volatile, Mistrustful) is associated with MTC. Thus, those who reported distrustful and wary behavior also reported less motivation towards revolutionary change. The third extracted factor (Passive-aggressive, Dependent (-), Detached) is correlated with CB. This combination of HDS dimensions is associated with an indifference to others’ feelings and a mistrust of leadership. One possible interpretation is that people who report these types of characteristics may also report challenging behavior, but not other characteristics associated with innovation potential. The lower reliabilities of the scales comprising this factor suggest that further research is needed to substantiate this finding.

### Implications

The findings of this paper have theoretical and practical implications. Theoretically, by using the IPI to measure of innovative characteristics, this paper builds on previous research focusing only on creativity or idea generation. The approximation of the ‘moving against people’ factor emerges as strongly associated to self-reported innovative characteristics indicating that innovation might be viewed as the *up-side* of otherwise dysfunctional tendencies represented by the extreme positive pole of this factor.

Practical implications for organizations relate to selecting and managing innovators. This paper has identified dysfunctional traits positively related to innovative characteristics, encompassing risk-taking and rebellious. This could indicate why innovators may be labeled as disruptive troublemakers and Patterson (2002) has questioned whether organizations are 'ready' to recruit employees who may challenge the status quo and question authority.

The association of innovative characteristics with dysfunctional traits suggests that being responsible for managing innovation may be challenging for managers (Port, 2004). They must avoid conflict, but also promote management styles that foster innovation. Essentially, although organizations see innovation as key to their success (Bunce & West, 1995), they may not be equipped to have potentially rebellious individuals making important decisions. In fact, Burch (2006, p. 48) notes a paradox for organizations seeking to develop creativity and innovation: "do organizations want people who, while being more likely to express original ideas, will probably be more anti-social...? Or, do organizations want team members who may be more prosocial, and... may come up with less unique ideas?"

#### Limitations and recommendations for future research

A potential weakness of this paper is that it is cross-sectional and based on self-report data. It follows therefore that the findings could be attributed to common method variance, introducing a potential source of invalidity to interpretation. Future research should include an objective assessment of innovation; such as managerial ratings. Not only would this reduce the common method bias, it would also introduce a more objective way of measuring innovative output.

This paper has examined innovation potential in a work context taking a highly focused approach to the design of the study. A more detailed operationalization would address additional individual and organizational factors. From an individual perspective, cognitive ability and motivation (e.g. Patterson, 2002; Amabile, 1983) would contribute to innovation potential. From an organizational perspective issues of organizational climate and culture could mean that particular traits might facilitate innovation performance in some settings but not in others (Nyström, 1990; Isaksen et al, 2001). These factors were not considered in the present study and results should be interpreted accordingly.

## Conclusion

The aim of this paper was to look at the relationship between innovative characteristics and dysfunctional traits. This paper has established a link between more negative aspects of personality and innovation potential, which has implications for organizations. The benefits of high innovation come at the cost of a particular set of undesirable self-reported traits, in this study most notably summarized as “moving against people”. More broadly, the results show that the relation between innovation and personality is not straightforward. Indeed Barron (1963) could not have put it better when he said: “The [innovator]... is both more primitive and more cultured, more destructive and more constructive, occasionally crazier and yet adamantly saner, than the average person” (p. 224).



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