# Distinguishing the Dark Triad: Evidence from the Five-Factor Model and the Hogan Development Survey

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The Dark Triad consists of Narcissism, Machiavellianism, and Psychopathy. The aim was to add to the evidence for their differential validity. A battery including the Hogan Development Survey, the IPIP Big 5 and measures of Empathy, Aggression and the Dark Triad was administered to 241 undergraduate psychology participants at an Australian university. Multivariate regression indicated that the Dark Triad shared significant predictors and the Five Factor Model facets failed to clearly distinguish between them. The results of a principal components analysis indicated considerable overlap among the constructs. Overall, limited evidence for the differential construct validity of the Dark Triad of personality was found. Implications for the psychometric properties of some dominant paradigms in personality research, and applications in organisational settings, are discussed.

*Keywords*: Dark Triad; Five-Factor Model; Hogan Development Survey; Construct Validity

## Introduction

The three overlapping constructs called Narcissism, Machiavellianism, and Psychopathy that comprise the "Dark Triad of Personality" (Paulhus & Williams, 2002), have recently attracted a great deal of research attention (Hodson, Hogg, & MacInnis, 2009; Jonason, Li, & Teicher, 2010; Miller, Dir, Gentile, Wilson, Pryor, & Campbell, 2010). The reported correlations between the constructs range between .25 and .61 (Miller et al., 2010; Paulhus & Williams, 2002). While the constructs are certainly related it is unlikely that they are equivalent (Jakobwitz & Egan, 2006; Jonason et al., 2010). Therefore, evidence for the differential validity of the three constructs requires further demonstration and clarification.

Narcissism is described in the Diagnostic and Statistical Manual Version Four (DSM-IV) as a pervasive pattern of grandiosity, need for admiration, and lack of Empathy (APA, 1994). Machiavellianism is defined as the manipulative personality, or the degree to which a person believes that people are manipulable (Christie & Geis, 1970; Shea & Beatty, 1983). Psychopathy is a combination of antisocial behaviours, high impulsivity, along with low Empathy and low Anxiety (Bishopp & Hare, 2008; Cleckley, 1955). Recent evidence indicates a two-factor model of Psychopathy (Douglas, Bore, & Munro, 2012; Levenson, Kiehl, & Fitzpatrick, 1995). The first factor is Primary Psychopathy, consisting of callous, selfish and manipulative personal attitudes. Secondary Psychopathy is characterised by high impulsivity and emotional instability, coupled with a self-defeating lifestyle.

All three Dark Triad constructs have been associated with high aggression and low empathy (Friedenfelt & Klinteberg, 2007; Munro, Bore, & Powis, 2005). All three are also related to the Five Factor Model domains of Agreeableness (A) and Conscientiousness (C) (Jakobwitz & Egan, 2006; Paulhus & Williams, 2002). However, some differential relationships have been reported. Extraversion (E) negatively correlates with Se-

condary Psychopathy and positively with Narcissism, while Neuroticism is negatively related to Narcissism, and positively to Secondary Psychopathy (Miller et al., 2010).

The associations of the Dark Triad with the FFM domains alone do not establish their construct validity. The facets of the FFM may be used to provide a more detailed description of individual personality profiles, which may assist in discriminating between traits with common domain relationships (Costa & McCrae, 1995). However, given the overlap between the Dark Triad traits, a correlational approach is unlikely to reveal which FFM facets best characterise each construct. Multivariate regression analysis may allow an examination of the facets that predict the most variance in Narcissism, Machiavellianism, and Psychopathy.

By comparison with research using the FFM, little attention has been devoted to the Dark Triad's relationship with the Personality Disorders. For example, while Narcissism seems intuitively related to Narcissistic Personality Disorder, recent evidence indicates that it may be related to Borderline Personality Disorder as well (Miller et al., 2010).

Although the possibility of significant relationships between the Personality Disorders and the Dark Triad seem compelling, a problem for research on this issue with normal populations is that measures of the disorders designed for clinical samples may not have an appropriate range of scores to allow discrimination between respondents. A suitable alternative may be the Hogan Development Survey (HDS), which was designed to predict maladaptive symptoms in normal workforce samples, using a continuum of scores rather than cut points (Hogan, 2007). The eleven scales of the HDS map onto each of the DSM-IV Personality Disorders, and are shown in **Table 1** along with descriptions of their personality profiles.

Extensive research has examined the association between Psychopathy and Personality Disorders. Blackburn and Coid (1998) found that Psychopathy scores correlated at $r = .85$ with Antisocial Personality Disorder, an indication that Psychopathy

**Table 1.**
Description of each of the HDS scales (Hogan, 2001).

| DSM-IV PDs | HDS Scale | Description |
| --- | --- | --- |
| Borderline | Excitable | Moody, hard to please, intense but short-lived enthusiasm for people, projects, or things. |
| Paranoid | Sceptical | Cynical, distrustful, and doubting others' intentions. |
| Avoidant | Cautious | Reluctant to take risks for fear of being rejected or negatively evaluated. |
| Schizoid | Reserved | Aloof, detached, and uncommunicative, lacking interest or awareness of the feelings of others. |
| Passive-Aggressive | Leisurely | Independent, ignoring people's requests and becoming irritated or argumentative if they persist. |
| Narcissistic | Bold | Unusually self-confident, feelings of grandiosity or entitlement, over-evaluation of one's capabilities. |
| Antisocial | Mischievous | Risk taking and testing the limits, needing excitement, manipulative, deceitful, cunning, and exploitative. |
| Histrionic | Colourful | Expressive, animated, and dramatic, wanting to be noticed and needing to be the centre of attention. |
| Schizotypal | Imaginative | Acting and thinking in creative and sometimes odd or unusual ways. |
| Obsessive-Compulsive | Diligent | Meticulous, precise, perfectionistic, inflexible about rules and procedures, critical of others' performance. |
| Dependent | Dutiful | Eager to please and reliant on others for support and guidance, reluctant to take independent action or go against popular opinion. |

can be characterised as Mischievous in the HDS terminology. The two-factor structure of Psychopathy has also been examined. Primary Psychopathy was positively related to Histrionic diagnoses, whereas Hildebrand and de Ruiter (2004) identified Narcissistic Personality Disorder as a positive correlate. Secondary Psychopathy was positively related to both Antisocial and Paranoid personality traits (Hart & Hare, 1989; Hildebrand & de Ruiter, 2004). Psychopathy is clearly linked with personality dysfunction, and it appears to be related to those disorders with reckless, emotionally unstable, and interpersonally defective core traits.

McHoskey (2001) used Hyler's Personality Diagnostic Questionnaire (PDQ-4; Hyler, Skodol, Oldham, Kellman, & Doidge, 1992) and the MACH-IV (Christie & Geis, 1970) to determine which personality disorders are related to Machiavellianism. Multiple linear regression revealed that Borderline Personality Disorder was the best positive predictor of Machiavellianism. Other predictors were Paranoid and Antisocial Personality Disorders. This suggests that Machiavellianism is related to unstable personal relationships, pervasive and suspicious mistrust, and a disregard for others. However, McHoskey has been the only researcher to examine this issue, so these results need to be replicated.

The aim of the current study was to provide further evidence for the discriminant construct validity of the Dark Triad traits, by examining their differential relationships with both the Five Factor Model and the Personality Disorders as measured by the Hogan Development Survey. Based on the preceding research, we hypothesised that all three Dark Triad constructs would be negatively correlated with Empathy, and positively with Aggression. With regard to the FFM we expected that all three Dark Triad constructs would be negatively associated with both Agreeableness and Conscientiousness, that Narcissism would be negatively correlated with Neuroticism and positively with Extraversion, and that Secondary Psychopathy would be positively correlated with Neuroticism and negatively correlated with Extraversion. We expected that each Dark Triad trait would have a different pattern of FFM facet predictors in a multivariate regression.

We also developed a set of hypotheses regarding the Dark Triad and the Personality Disorders as measured by the HDS scales. We hypothesised that Primary Psychopathy would be positively related to the Bold and Colourful HDS scales, with Secondary Psychopathy positively related to the Mischievous and Sceptical HDS scales. It was expected that Machiavellianism would be positively related to Bold and Excitable HDS scores. Lastly we hypothesised that the combination of FFM domains and HDS scales would predict more of the variance in Dark Triad traits than either personality paradigm on its own.

## Method

### Participants

Participants were recruited from an undergraduate psychology cohort and were given credits for their introductory psychology course. Two hundred and forty-one participants were recruited, 189 of whom were female (78.4%). Fourteen participants did not report their gender (5.8%). Participants had a mean age of 22.7 years with a range from 17 to 53 years. The median age of the sample was 19.0. Twenty-four participants did not report their age.

### Instruments

The following measures were included in the test battery:
**Goldberg's International Personality Item Pool (IPIP).** The IPIP is a widely accepted measure of the Five Factor Model. It consists of 300 items providing Five Factor Model domain and facet scores. An example item is 'I warm up quickly to others'. The alpha reliability coefficients range between .91 and .88. Extensive research indicates that the IPIP is similar to the NEO-PI-R (Goldberg et al., 2006). Items were endorsed on a four point Likert scale ranging from F "definitely false" to T "definitely true".

**The Narcissism and Empathy Subscales from the Narcissism-Aloofness-Confidence-Empathy (NACE) Scale** (Munro et al., 2005). Each subscale comprises of 24 items using a four-point Likert format ranging from A = definitely true to D = definitely false. An example item is "I am quite affectionate towards people". The validity of the four-factor structure has been replicated across a large number of samples, and Cronbach's alpha for all four scales has been found to range between .78 and .84 (http://www.pqa.net.au/).

**The MACH-IV**, a 20-item scale designed to measure Machiavellian orientation, in which participants are asked to respond using a 5-point Likert scale ranging from 'strong disagreement' to "strong agreement" (Christie & Geis, 1970). An example item

from this scale is "it is wise to flatter important people". Research findings indicate acceptable reliability and validity of the scale (Ray, 1982).

**The Levenson Self-Report Psychopathy Scale (LSRP)**, a 26-item scale consisting of two factors, where participants are required to respond to statements using a four-point Likert scale of disagree strongly, disagree somewhat, agree somewhat, and agree strongly. An item from this scale is "I often admire a really clever scam". The first factor is Primary Psychopathy, with the second factor being Secondary Psychopathy. Preliminary evidence indicates acceptable reliability of the scale (Levenson et al., 1995).

**The Hogan Development Survey (HDS)**, a commercially published 154-item scale, used in organisational settings to measure Personality Disorders. While item data was not available in this study, Hogan, Hogan and Warrenfeltz (2007) report test-retest reliabilities ranging from .58 to .87. The survey consists of eleven scales with fourteen items (Hogan & Hogan, 2001). The names of the scales and a description of each can be found in Table 1. Respondents are requested to "agree" or "disagree" with the items.

**The Buss and Perry Aggression Questionnaire**, a 29-item scale endorsed on a seven-point Likert scale ranging from "extremely uncharacteristic of me" to "extremely characteristic of me". An example item is "I have threatened people I know". Exploratory factor analysis indicated four factors labeled Physical Aggression, Verbal Aggression, Anger, and Angry Hostility. The internal consistency for the four scales ranged between .72 and .85 (Buss & Perry, 1992).

### Procedure

Participants were tested in a group setting with a researcher present to administer the questionnaires. Participants were given a copy of the two-hour battery. Version A had each measure in the following order: The IPIP, the MACH-IV, the Aggression Questionnaire, the LSRP, and the NACE. Half of the participants received version A of the questionnaire, and the other half received version B, which had the measures in reverse order to version A. The responses to all questionnaires except the HDS were hand entered into a spreadsheet for scoring. HDS response sheets were sent to the Hogan consultants, who provided the eleven HDS scores for each participant.

## Results

### Descriptive Statistics

The means, standard deviations and alpha coefficients for each scale can be found in **Table 2**. Participants who completed the questionnaire in order A were compared with participants who completed in order B to check for the effects of fatigue. No such effects were detected. Examination of the alpha coefficients indicated that internal reliability was acceptable for every scale.

### Correlations

The correlations between the Dark Triad, Empathy, Aggression, and the Five Factor Model domains are reported in **Table 3**. The correlations among Narcissism, Machiavellianism and Psychopathy were in the expected range with the strongest correlation being observed between Primary Psychopathy and

**Table 2.**
Descriptive statistics.

|  | Mean | SD | Alpha |
|---|---|---|---|
| Primary Psychopathy | 29.95 | 7.42 | .86 |
| Secondary Psychopathy | 20.88 | 4.33 | .70 |
| Machiavellianism | 52.42 | 8.55 | .73 |
| Narcissism | 57.24 | 9.53 | .86 |
| Agreeableness | 176.35 | 17.71 | .92 |
| Conscientiousness | 169.15 | 18.79 | .92 |
| Extraversion | 168.30 | 19.35 | .93 |
| Neuroticism | 145.61 | 26.52 | .96 |
| Openness | 173.79 | 16.45 | .89 |
| Excitable | 83.80 | 18.52 | n/a |
| Sceptical | 82.03 | 19.46 | n/a |
| Cautious | 81.22 | 21.01 | n/a |
| Reserved | 73.66 | 22.14 | n/a |
| Leisurely | 78.28 | 22.76 | n/a |
| Bold | 49.11 | 30.53 | n/a |
| Mischievous | 56.61 | 29.52 | n/a |
| Colourful | 45.44 | 29.00 | n/a |
| Imaginative | 64.77 | 0.06 | n/a |
| Diligent | 55.06 | 33.94 | n/a |
| Dutiful | 65.97 | 30.22 | n/a |
| Aggression | 85.79 | 28.41 | .93 |
| Empathy | 71.56 | 8.20 | .84 |

Note: the alpha reliabilities for the HDS are not reported as item-level data was not available.

**Table 3.**
Correlations between the dark triad, empathy, aggression, and the five-factor model domains.

|  | P-Psy | S-Psy | M | N |
|---|---|---|---|---|
| Secondary Psychopathy | .40** |  |  |  |
| Machiavellianism | .63** | .61** |  |  |
| Narcissism | .71** | .36** | .55** |  |
| Aggression | .36** | .59** | .50** | .47** |
| Empathy | −.44** | −.17** | −.26** | −.25** |
| Neuroticism | −.01 | .54** | .31** | .07 |
| Extraversion | .10 | −.20** | −.15* | .22** |
| Openness | −.29** | −.17** | −.18** | −.12 |
| Agreeableness | −.68** | −.48** | −.64** | −.67** |
| Conscientiousness | −.27** | −.69** | −.41** | −.17** |
| Sceptical (Paranoid) | .20** | .30** | .35** | .26** |
| Reserved (Schizoid) | .03 | .14* | .20** | .07 |
| Imaginative (Schizotypal) | .08 | .15* | .12 | .23** |
| Mischievous (Antisocial) | .36** | .23** | .29** | .37** |
| Excitable (Borderline) | .17* | .42** | .34** | .19** |
| Colourful (Histrionic) | .24** | .05 | .09 | .33** |
| Bold (Narcissistic) | .30** | .06 | .20** | .47** |
| Cautious (Avoidant) | −.09 | .15* | .15 | −.13* |
| Diligent (Obsessive-Compulsive) | −.17** | −.28** | −.21 | −.12 |
| Dutiful (Dependent) | −.08 | −.11 | .00 | −.11 |
| Leisurely (Passive-Aggressive) | .09 | .19** | .09 | .11 |

Notes: *p < .05; **p < .01; P-Psy = Primary Psychopathy; S-Psy = Secondary Psychopathy; M = Machiavelliansim; N = Narcissism.

Narcissism ($r = .71$). Aggression was positively correlated with Narcissism, Machiavellianism, and Psychopathy, as expected. Empathy was moderately negatively correlated with each of the Dark Triad variables.

**The five-factor model.** Agreeableness was moderately to strongly negatively correlated with Narcissism, Machiavellianism, and Psychopathy, as was Conscientiousness. Only a weak association between Conscientiousness and Narcissism was found ($r = -.17$). As expected, Secondary Psychopathy was positively correlated with Neuroticism and negatively with Extraversion. Contrary to expectations, although Narcissism was positively associated with Extraversion, the relationship between it and Neuroticism was not significant. Primary Psychopathy was also negatively associated with Openness, whereas Machiavellianism was positively related to Neuroticism.

**The personality disorders.** Correlations between the Dark Triad and the HDS scales can be found in **Table 3**. All of the expected relationships between Narcissism, Machiavellianism, Psychopathy, and the Personality Disorders were obtained. In addition, Primary Psychopathy was positively and moderately related to Mischievous, while Secondary Psychopathy demonstrated a positive relationship with Excitable. Narcissism was also moderately and positively correlated with Sceptical, Mischievous, and Colourful. No additional HDS scale correlates

were found for Machiavellianism.

## Regression Analysis

In order to examine which scales best predict each of the Dark Triad constructs, multivariate regression analysis using the stepwise selection method with probability for removal of .05 was conducted. Two separate analyses were conducted for the FFM domains and facets respectively. The final model for each scale can be found in columns two and seven of **Table 4**, along with the change in $R^2$ resulting from the addition of each predictor. The beta weights and t-values at each step are also reported in **Table 4**. The models for each construct contained significant predictors from both the Five Factor Model and the Hogan Development Survey, an indication that both sets of criteria uniquely explain some of the variance in each trait. However, the majority of the predictors were from the Five Factor Model in each case. Primary Psychopathy was predicted by a combination of low Agreeableness and Extraversion, while Machiavellianism was predicted by Agreeableness and Neuroticism. Narcissism was predicted by low Agreeableness, along with high Neuroticism and Extraversion. Secondary Psychopathy was primarily predicted by low Conscientiousness, followed by low Agreeableness. Primary Psychopathy, Ma-

**Table 4.**
Multivariate regression analysis of narcissism, machiavellianism and psychopathy.

| | Five Factor Model Domains | | | | | Five Factor Model Facets | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Predictor | β | T | $R^2$ | $\Delta R^2$ | Predictor | β | t | $R^2$ | $\Delta R^2$ |
| P-Psyc | Agreeableness | −.60 | −11.83** | .47 | | Straightforwardness (A) | −.38 | −6.62** | .43 | |
| | Extraversion | .16 | 3.16** | .49 | .03 | Tender-Mindedness (A) | −.22 | −3.45** | .51 | .07 |
| | Openness | −.17 | −3.46** | .51 | .02 | Gregariousness (E) | .18 | 3.79** | .53 | .02 |
| | Mischievous | .15 | 2.87** | .53 | .02 | Altruism (A) | −.21 | −3.21** | .55 | .02 |
| | | | | | | Bold | .13 | 2.71** | .56 | .01 |
| S-Psyc | Conscientiousness | −.47 | −10.55** | .48 | | Compliance (A) | −.32 | −6.77** | .34 | |
| | Neuroticism | .32 | 7.59** | .56 | .09 | Competence (C) | −.13 | −2.41* | .55 | .21 |
| | Agreeableness | −.30 | −7.29** | .64 | .08 | Self-Discipline (C) | −.11 | −2.08* | .60 | .05 |
| | | | | | | Trust (A) | −.15 | −3.01** | .62 | .02 |
| | | | | | | Deliberation (C) | −.19 | −3.98** | .64 | .02 |
| | | | | | | Achievement Striving (C) | −.18 | −3.64** | .65 | .02 |
| | | | | | | Depression (N) | .17 | 3.10** | .67 | .01 |
| Mach | Agreeableness | −.57 | −11.52** | .41 | | Straightforwardness (A) | −.43 | −8.72** | .35 | |
| | Neuroticism | .27 | 5.75** | .47 | .06 | Trust (A) | −.30 | −5.42** | .49 | .15 |
| | Mischievous | .16 | 3.13** | .50 | .02 | Depression (N) | .20 | 3.75** | .51 | .02 |
| | | | | | | Bold | .13 | 2.79** | .53 | .02 |
| Narc | Agreeableness | −.61 | −13.76** | .45 | | Straightforwardness (A) | −.20 | −3.81** | .29 | |
| | Bold | .27 | 5.74** | .54 | .10 | Bold | .28 | 5.93** | .42 | .13 |
| | Extraversion | .25 | 5.29** | .58 | .04 | Tender-Mindedness (A) | −.33 | −6.27** | .48 | .06 |
| | Neuroticism | .15 | 3.24** | .60 | .02 | Impulsiveness (N) | .18 | 3.85** | .53 | .05 |
| | | | | | | Modesty (A) | −.27 | −5.33** | .57 | .04 |
| | | | | | | Anxiety (N) | .17 | 3.43** | .60 | .02 |

Note: $^*p < .05$, $^{**}p < .01$; P-Psyc = Primary Psychopathy, S-Psyc = Secondary Psychopathy, Mach = Machiavellianism, Narc = Narcissism.

chiavellianism and Narcissism each had Straightforwardness (A) as their strongest predictor.

## Exploratory Factor Analysis

A principal components analysis of the Dark Triad, all FFM domains, the HDS, Aggression and Empathy was undertaken. The Kaiser-Meyer-Olkin (KMO) measure verified the sampling adequacy for the analysis, KMO = .87. Bartlett's test of sphericity $\chi^2(1225) = 8292.83$, $p < .001$. When the five-component solution was examined, a number of cross-loadings were observed that made interpretation of each factor difficult. Therefore, a four-component solution was run that provided a clearer interpretation. The loadings from this solution are shown in **Table 5**. The communalities ranged from .41 to .77, with the four-component solution explaining 58.3% of the variance.

The rotated component matrix indicated that component one was characterised by emotional reactivity, aggression, and paranoia. Component two consisted of Extraversion, Narcissism and risk-taking. Component three contained variables associated with Antagonism and antisocial behaviour. Component four was characterised by Conscientiousness, inflexibility and independence. Therefore, the components were named Emotionality, Extraverted Risk-Taking, Antisociality, and Inflexibility respectively. With regard to the Dark Triad, Narcissism loaded equally onto Extraverted Risk-Taking and Antisociality, with a secondary loading on Emotionality. Machiavellianism loaded onto Emotionality, with a secondary loading on Antisociality. Primary Psychopathy loaded onto Antisociality, whereas Secondary Psychopathy loaded onto Emotionality.

## Discussion

The results indicate some support for our hypotheses. All three Dark Triad constructs were negatively correlated with Empathy, and positively correlated with Aggression (Friedenfelt & Klinteberg, 2007). They were also negatively associated with the Five Factor domains Agreeableness and Conscientiousness (Jakobwitz & Egan, 2006; Paulhus & Williams, 2002). In addition, Secondary Psychopathy was positively correlated with Neuroticism and negatively with Extraversion, as predicted. Narcissism was positively associated with Extraversion, as suggested by Miller et al. (2010). Contrary to expectations, no relationship was found between Neuroticism and Narcissism. Although Miller et al. found a negative relationship between the two, Paulhus and Williams (2002) did not find any relationship between them. In this case the current research provides a replication of the results reported by Paulhus and Williams (2002), and indicates that the Dark Triad can be characterised by Antagonism (low A), Impulsivity (low C), low Empathy and high Aggression. However, the FFM does not appear to distinguish between the constructs with clarity.

Multivariate regressions indicated that Agreeableness was a significant predictor of the Dark Triad while the HDS scales played a somewhat limited role. Regression analysis including the FFM facets all included Straightforwardness (A) as their primary negative predictor, indicating that all three constructs are disinterested in morality. The other predictors in each model appeared to be unique to the Dark Triad construct they predicted. This suggests that the FFM facets provide, to some extent, a way to distinguish between the Dark Triad. However, given the role of Straightforwardness (A) in these regression

**Table 5.**

Factor loadings of 25 variables in the principal component analysis.

| | Component | | | |
|---|---|---|---|---|
| | EM | EX | A | I |
| Anger | **.81** | .17 | .04 | −.05 |
| Hostility | **.78** | −.03 | .06 | .19 |
| Secondary Psychopathy | **.76** | .01 | .28 | −.27 |
| Neuroticism | **.74** | **−.38** | −.18 | .01 |
| Excitable (Borderline) | **.73** | −.24 | .06 | .16 |
| Machiavellianism | **.59** | .13 | **.51** | −.05 |
| Physical Aggression | **.57** | .33 | .18 | −.09 |
| Verbal Aggression | **.55** | **.41** | .22 | −.11 |
| Sceptical (Paranoid) | **.54** | .21 | .14 | **.45** |
| Colourful (Histrionic) | −.02 | **.74** | −.05 | −.16 |
| Extraversion | −.20 | **.70** | −.27 | −.23 |
| Bold (Narcissistic) | .03 | **.70** | .19 | .30 |
| Cautious (Avoidant) | **.45** | **−.68** | −.05 | .21 |
| Mischievous (Antisocial) | .18 | **.68** | −.16 | −.06 |
| Imaginative (Schizotypal) | .22 | **.57** | −.14 | .23 |
| Empathy | .09 | .07 | **−.82** | .03 |
| Agreeableness | **−.41** | −.25 | **−.73** | .00 |
| Primary Psychopathy | .26 | .33 | **.70** | −.13 |
| Openness | .02 | .30 | **−.59** | .03 |
| Narcissism | **.36** | **.51** | **.51** | .04 |
| Reserved (Schizoid) | .25 | −.27 | **.46** | **.35** |
| Dutiful (Dependent) | .01 | −.24 | **−.25** | −.02 |
| Diligent (Obsessive-Compulsive) | −.24 | −.06 | −.16 | **.69** |
| Conscientiousness | **−.56** | .03 | −.16 | **.61** |
| Leisurely (Passive-Aggressive) | .31 | −.06 | .11 | **.55** |

Note: EM = Emotionality; EX = Extraverted Risk-Taking; A = Antisociality; I = Inflexibility.

models it still remains unclear as to how useful the FFM is in differentiating the Dark Triad.

The principal components analysis indicated considerable overlap between the Dark Triad constructs. Primary Psychopathy loaded onto the Antisociality component, with no significant cross-loadings. Secondary Psychopathy loaded onto the Emotionality component. These results are consistent with previous evidence indicating two distinct Psychopathy constructs (Douglas, Bore, & Munro, 2012; Levenson et al., 1995). Narcissism loaded onto Emotionality, Extraverted Risk-Taking, and Antisociality. Narcissism's defining feature was the Extraverted Risk-Taking element, consisting of attention seeking, extraverted behaviours, and elements of impulsivity. In contrast, Machiavellianism loaded onto Emotionality and Antisociality. While this indicates that Machiavellianism has features of both components, it may also provide support for previous literature arguing that Machiavellianism is an undifferentiated measure of Psychopathy (McHoskey, Worzel, & Szyarto, 1998). It may also indicate that Machiavellianism as a member of the Dark Triad is redundant.

One limitation of the current research concerns the elevated scores obtained on the first five scales of the HDS. Our sample had substantially higher mean scores on the Excitable, Sceptical, Cautious, Reserved and Leisurely scales than the Australian norm. This could indicate a restriction of range issue whereby the sample obtained in the current study is too homogenous for

generalisations to be made to the wider population. It may also suggest that the current sample have elevated scores on traits reflecting Borderline, Paranoid, Avoidant, Schizoid, and Passive-Aggressive Personality Disorders compared to the Australian population. Alternatively, it might be that the HDS is not an appropriate instrument for this population.

An issue of potential interest to researchers is that negative traits are an important part of normal personality profiles. The FFM has contributed to the implicit assumption that if personality is adaptive, then it consists solely of positive traits. Adding items that target the (subclinical) negative personality aspects to existing measures of the FFM would allow re-examination of the underlying facets of each FFM domain. Ensuring that the FFM items sample as representative a range of traits as possible would enhance the content validity of its factors (Todman, 2007).

In conclusion, the current research provides some evidence that Psychopathy, Machiavellianism and Narcissism are separate constructs with different behavioural profiles. The Five Factor Model, and the DSM defined Personality Disorders can be used to describe the maladaptive and dysfunctional styles in normal personality profiles. However, the picture of the Dark Triad as separate constructs is still not clear. The preliminary evidence suggests Narcissism, Machiavellianism, and Psychopathy, although related, are distinguishable factors. With further investigation and replication, the relationships between them may have diagnostic utility in both clinical and organisational settings.

## Acknowledgements

## REFERENCES

American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders* (4th ed.). Washington, DC: American Psychiatric Association.

Bishopp, D., & Hare, R. D. (2008). A multidimensional scaling analysis of the Hare PCL-R: Unfolding the structure of psychopathy. *Psychology, Crime & Law, 14,* 117-132. doi:10.1080/10683160701483484

Blackburn, R., & Coid, J. W. (1998). Psychopathy and the dimensions of personality disorder in violent offenders. *Personality and Individual Differences, 25,* 129-145.
doi:10.1016/S0191-8869(98)00027-0

Buss, A. H., & Perry, M. (1992). The aggression questionnaire. *Journal of Personality & Social Psychology, 63,* 452-459.
doi:10.1037/0022-3514.63.3.452

Christie, R., & Geis, F. L. (1970). *Studies in machiavellianism.* New York: Academic Press.

Cleckley, H. (1955). *The mask of sanity: An attempt to clarify some issues about the so-called psychopathic personality* (3rd ed.). St Louis: Mosby. doi:10.1037/11395-000

Costa, P. T., & McCrae, R. R. (1995). Domains and facets: Hierarchical personality assessment using the revised NEO personality inventory. *Journal of Personality Assessment, 64,* 21-50.
doi:10.1207/s15327752jpa6401_2

Douglas, H., Bore, M., & Munro, D. (2011). Construct validity of a two-factor model of psychopathy. *Psychology, in press.*

Friedenfelt, J., & Klinteberg, B. (2007). Exploring adult personality and psychopathy tendencies in former childhood hyperactive delinquent males. *Journal of Individual Differences, 28,* 27-36.

doi:10.1027/1614-0001.28.1.27

Goldberg, L. R., Johnson, J. A., Eber, H. W., Hogan, R., Ashton, M. C., Cloniger, C. R., & Gough, H. G. (2006). The international personality item pool and the future of public-domain personality measures. *Journal of Research in Personality, 40,* 84-96.
doi:10.1016/j.jrp.2005.08.007

Hart, S. D., & Hare, R. D. (1989). Discriminant validity of the psychopathy checklist in a forensic psychiatric population. *Psychological Assessment, 1,* 211-218. doi:10.1037/1040-3590.1.3.211

Hildebrand, M., & de Ruiter, C. (2004). PCL-R psychopathy and its relation to patients in the Netherlands. *International Journal of Law and Psychiatry, 27,* 233-248. doi:10.1016/j.ijlp.2004.03.005

Hodson, G., Hogg, S. M., & MacInnis, C. C. (2009). The role of "dark personalities" (narcissism, machiavellianism, psychopathy), big five personality factors, and ideology in explaining prejudice. *Journal of Research in Personality, 43,* 686-690.
doi:10.1016/j.jrp.2009.02.005

Hogan, R. (2007). *Personality and the fate of organizations.* Mahwah, NJ: Lawrence Erlbaum Associates.

Hogan, R., & Hogan, J. (2001). Assessing leadership: A view from the dark side. *International Journal of Selection & Assessment, 9,* 40.
doi:10.1111/1468-2389.00162

Hogan, R., Hogan, J., & Warrenfeltz, R. (2007). *The Hogan guide: Interpretation and use of Hogan inventories.* Hogan Assessment Systems, Inc.

Hyler, S. E., Skodol, A. E., Oldham, J. M., Kellman, H. D., & Doidge, N. (1992). The validity of the PDQ-R: A replication in an out-patient sample. *Comprehensive Psychiatry, 33,* 73-77.
doi:10.1016/0010-440X(92)90001-7

International Personality Item Pool. A scientific collaboratory for the development of advanced measures of personality traits and other individual differences. URL. http://ipip.ori.org/

Jakobwitz, S., & Egan, V. (2006). The dark triad and normal personality traits. *Personality and Individual Differences, 40,* 331-339.
doi:10.1016/j.paid.2005.07.006

Jonason, P. K., Li, N. P., & Teicher, E. A. (2010). Who is James Bond? The dark triad as an agentic social style. *Individual Differences Research, 8,* 111-120.

Levenson, M. R., Kiehl, K. A., & Fitzpatrick, C. M. (1995). Assessing psychopathic attributes in a noninstitutionalized population. *Journal of Personality and Social Psychology, 68,* 151-158.
doi:10.1037/0022-3514.68.1.151

McHoskey, J. W. (2001). Machiavellianism and personality dysfunction. *Personality and Individual Differences, 31,* 791-798.
doi:10.1016/S0191-8869(00)00187-2

McHoskey, J. W., Worzel, W., & Szyarto, C. (1998). Machiavellianism and psychopathy. *Journal of Personality and Social Psychology, 74,* 192-210. doi:10.1037/0022-3514.74.1.192

Miller, J. D., Dir, A., Gentile, B., Wilson, L., Pryor, L. R., & Campbell, W. K. (2010). Searching for a vulnerable dark triad: Comparing factor 2 psychopathy, vulnerable narcissism, and borderline personality disorder. *Journal of Personality, 78,* 1529-1564.
doi:10.1111/j.1467-6494.2010.00660.x

Munro, D., Bore, M., & Powis, D. (2005). Personality factors in professional ethical behaviour: Studies of empathy and narcissism. *Australian Journal of Psychology, 57,* 49-60.
doi:10.1080/00049530412331283453

Paulhus, D. L., & Williams, K. M. (2002). The Dark Triad of personality: Narcissism, Machiavellianism, and psychopathy. *Journal of Research in Personality, 36,* 556-563.
doi:10.1016/S0092-6566(02)00505-6

Ray, J. J. (1982). Machiavellianism, forced-choice formats and the validity of the F scale. A rejoinder to bloom. *Journal of Clinical Psychology, 38,* 779-782.

Shea, M. T., & Beatty, J. R. (1983). Measuring machiavellianism with MACH V: A psychometric investigation. *Journal of Personality Assessment, 47,* 509-513. doi:10.1207/s15327752jpa4705_11

Todman, J. (2007). *Experimental design and statistics for psychology.* Oxford: John Wiley & Sons.