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The Core of Darkness: Uncovering the Heart of the Dark Triad

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Abstract: The Dark Triad consists of three overlapping but distinct personality variables: narcissism, Machiavellianism and psychopathy. To date, however, no research has empirically identified what leads these three variables to overlap or whether other variables share the same core. The present research addresses why and how dark personalities overlap. Drawing from classic work in psychopathy, Hare's Factor 1 or manipulation and callousness were found to be the common antagonistic core. A series of latent variable procedures, including Multisample Structural Equation Models, revealed that for both samples, manipulation and callousness, completely accounted for the associations among the facet scores of the psychopathy, narcissism and Machiavellianism scales. Sample 2 also included Social Dominance Orientation, and results further confirmed that Social Dominance Orientation has the same common core as the Dark Triad. In sum, Hare's Factor 1—manipulation–callousness—emerged as common dark core that accounts for the overlap among antagonistic traits.

Key words: antisocial behaviour; personality scales and inventories; personality types

The literature is replete with debates about the overlap among antagonistic traits. For example, Machiavellianism is a trait defined by manipulative, callous and strategic dispositions. Psychopathy is also a trait defined by manipulative and callous dispositions but of a more short-term and antisocial nature. Last, narcissism is also defined by manipulation and callousness but with an inflated sense of self. Their similarities led McHoskey, Worzel, and Szyarto (1998) to argue that Machiavellianism was nothing more than a mild form of psychopathy. McHoskey and colleagues claimed that because the two literatures developed in isolation from one another (one clinical/forensic, the other social/personality) researchers working on these issues were unaware that they were studying a similar phenomenon. McHoskey and colleagues also extended their argument to narcissism, essentially arguing those three variables were essentially the same.

Paulhus and Williams (2002) rebutted by pointing out that Machiavellianism, psychopathy and narcissism[1] had unique correlates with different outcomes despite the positive manifold of correlations among them. For example, each trait had a unique pattern of correlations with the Big Five of personality, intelligence and knowledge over-claiming. The writer labelled these traits the *Dark Triad* (*DT*) of personality and have been regarded an important cluster of antagonistic personalities in psychology.

Some evolutionary psychologists have focused on the sexual behaviour of the DT to construe them as a set of evolved and adaptive strategies—as opposed to being pathological. For example, Jonason, Li, Webster, and Schmitt (2009) examined the mating strategies associated with each of these *Dark Personalities* and argued that the three may be linked by their *Exploitive Sexual Style*, which Jonason and colleagues associated with a *Faster* Life History Strategy (Jonason, Koenig, & Tost, 2010). Jonason and colleagues observed that men who scored higher on the DT had an increased preference for short-term mating and number of sex partners. In sum, Jonason and colleagues surmised that an *exploitative sexual style* is what drives the negative behaviour of the DT.

These findings suggest that the DT traits are at one end of Malamuth's (1996) *Confluence Model*. Malamuth had hypothesized two general sexual strategies at opposite ends of a continuum: (i) a *convergent interest* sexual strategy and (ii) a *divergent interest* sexual strategy. Figueredo and Jacobs (2010) extended this model beyond the sexual and into the general social domain, arguing there are *mutualistic social strategies* and *antagonistic social strategies*, rather than these strategies being limited to sexual interactions. In mutualistic social strategies, individuals work with others towards common goals. By contrast, in antagonistic *social* strategists, individuals see others as objects to be exploited or rivals to be defeated.

Unfortunately, the term *exploitative sexual style* does not specify the more general personality style associated with this dimension. A number of other theories may point the way. Egan (2009), for example, proposed that *disagreeableness* is at the core of antagonistic behaviour stemming from personality. Indeed, Jakobwitz and Egan (2006) found that all three *Dark Personality* traits are negatively correlated with the *Big Five* personality factor labelled *Agreeableness*, replicating previous research (Paulhus & Williams, 2002; see also Vernon, Villani, Vickers, & Harris, 2008).

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[1]We discuss both clinical and non-clinical samples and assessments in our introduction. However, most research on the Dark Triad of personality, at present, consists of data from sub-clinical or every day populations.

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In contrast, Jones and Paulhus (2010) argued that it is *callousness* that leads the DT to overlap. Empirical research has supported this idea, finding that a lack of empathy is a common element among the DT traits (Wai & Tiliopoulos, 2012). Finally, Lee and Ashton (2005) have found that an absence of Honesty/Humility is the common feature among all three DT traits. Lee and colleagues (in press) expanded their research further to discover that a lack of honesty accounts for a large portion of the DT common core. Given that empirical support is available for a common link with callousness (Jones & Paulhus, 2010; Wai & Tiliopoulos, 2012), a lack of Honesty/Humility (Lee & Ashton, 2005; Lee et al., in press) and disagreeableness (Jakobwitz & Egan, 2006), all three theories are contenders for the core of the DT.

To date, no empirical evidence has emerged to test the different theories surrounding the common core. Moreover, there are other dark personalities in the literature that may overlap with the DT as well. For example, Social Dominance Orientation (SDO or simply social dominance) may be part of a larger dark personality cluster (Pratto, Sidanius, Stallworth, & Malle, 1994). The association with antagonistic personality clusters stems from the negative impact social dominance has on others.

To understand what dark personalities might have in common, one must first examine the basic assumptions surrounding what it means to have a *dark* or *antagonistic*[2] personality. For example, two of the most extensive literatures in psychology dealing with psychological harm to others are psychopathy and Machiavellianism. Hare (1980, 1991) was the first to quantify and empirically measure psychopathy—with a focus on forensic and clinical populations. Christie and Geis (1970), on the other hand, were the first to measure Machiavellianism, and their assessments focused on general community populations. Interestingly, both original measures had two basic components. For example, in his original Psychopathy Checklist, Hare and colleagues distinguished two correlated factors underlying individual differences in psychopathy (Harpur, Hare, & Hakstian, 1989). The first factor consisted of a specific interpersonal style ensuing from an affective deficit; the second factor consisted of erratic lifestyle including antisocial behaviour. In turn, these two factors have been further partitioned into three (e.g. Cooke & Michie, 2001) and later four (e.g. Hare & Neumann, 2006). This factoring of psychopathy has since gone beyond clinical/forensic populations to sub-clinical or community samples (Mahmut, Menictas, Stevenson, & Homewood, 2011; Neal & Sellbom, 2012; Paulhus, Neumann, & Hare, ; Williams, Paulhus, & Hare, 2007). Regardless of the subdivisions and populations, the basic distinction between personality and behaviour is still present in all of the current models of psychopathy (see Neumann, Hare, & Newman, 2007).

This personality/behaviour distinction also seems to apply to the construct of Machiavellianism: In this case, the two primary facets are *cynical worldview* and *manipulative tactics*. Thus Machiavellianism, like psychopathy, can also be broken into a personality and a behavioural component. Although the personality core may be identical, the behaviour components of Machiavellianism and psychopathy stand in stark contrast. The behaviours of Machiavellians involve strategic planning (Jones & Paulhus, 2009). By contrast, psychopathic manipulation has always been discussed in terms of short term gratification and deficiencies in impulse control (e.g. Brower & Price, 2001).

Although Christie and Geis were pioneers in their field, Hare's four factor model has been more thoroughly analysed and fleshed out over the years (Hare, 1996, 1999). Hare's *Factor 1*of consists of two correlated facets: (i) interpersonal manipulation: lying, inflated self-worth, coercion and dishonesty; and (ii) callous affect: a lack of concern or remorse for the well-being of others. When examined against the backdrop of the DT, all three traits contain these qualities. In fact, moving past the DT into other relevant antagonistic personalities, such as Social Dominance, these traits are present as well. In fact, we argue that Hare's *Factor 1* constitutes the very core of all antagonistic personalities.

To support the assertion that Hare's *Factor 1* is at the heart of antagonistic personalities, we first argue that one must be simultaneously dishonest *and* lack concern for others, to be truly and intentionally harmful. For example, it is possible for one to be generally unconcerned with or unaware of others' feelings but not be deceptive or manipulative, such as in the case of autistic individuals (e.g. Baron-Cohen, 1995) or individuals with Asperger's syndrome (e.g. Baron-Cohen & Wheelwright, 2004).

In addition, it is possible to deceive someone or lie with good intentions. In fact, well-meaning lies and minor inaccuracies in social interaction are a common part of everyday life and healthy relationships (DePaulo, Kashy, Kirkendol, Wyer, & Epstein, 1996). Therefore, it is only when callousness and manipulation come together that a dark personality emerges. We further argue that, by definition, a dark personality must emerge when these two factors are present in an individual. It is important to note that a lack of honesty (e.g. Lee & Ashton, 2005) and empathy would resemble the same core as manipulation and callousness would. We argue these factors (manipulation and callousness—or the absence of honesty and empathy) are present in the DT and SDO.

Overall deceptiveness (i.e. pathological lying, exaggeration or manipulation) and callous affect are elements of Machiavellianism, narcissism, psychopathy and Social Dominance in one way or another. For example, Machiavellians are calculating and long-term manipulators, and have a stunning lack of remorse for whoever they hurt (see Fehr, Samsom, & Paulhus, 1992). Narcissists exaggerate their positive qualities (Paulhus & Williams, 2002) and manipulate others (e.g. Campbell, 2005) to obtain ego validation (e.g. Morf & Rhodewalt, 2001) with no concern for those they hurt (e.g. Watson, Grisham, Trotter, & Biderman, 1984). Individuals high in Social Dominance manipulate others to maintain selfish oppression of minority groups (e.g. Sidanius, 1993) and believe that different groups belong at the bottom of society's status hierarchy (Sidanius, Levin, Liu, & Pratto, 2000). Moreover, Social Dominance has been linked to many types of

[2]Here, we refer to antagonistic as destructive to others or divergent from the interests of others. We use this term as an adjective for the common core of the Dark Triad.

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racism and ethnic hatred (e.g. Sidanius & Liu, 1992; Sidanius & Pratto, 1993). Thus, each of these traits is, in its own way, both manipulative and callous.

In sum, various personalities that are shown to predict socially antagonistic behaviours in the literature all have a common element: They are all deceptive and callous. Conversely, one could say they all lack honesty and empathy. In either case, if one removes this common core, each should be orthogonal to the other in residual components. We argue that it is these residual components (e.g. behaviours, beliefs and attitudes) that make each trait unique in spite of the strikingly similar personality core at the centre of each.

The present research

We have three major hypotheses regarding our present research: (i) There is a common core among dark/antagonistic personalities; (ii) this common core can be quantified, measured and accounted for; and (iii) that Hare's *Factor 1*, or manipulation and callousness, entirely constitutes that common core. Therefore, we hypothesized that Hare's First Factor consisting of interpersonal manipulation and callous affect should account for the preponderance of the shared variance among the component traits constituting the DT, as can be estimated by extracting their latent common factor. Furthermore, we hypothesized that statistically controlling the shared variance attributable to manipulation and callousness should fully account for the correlations among all component traits comprising the DT and that any residual correlations among them not associated with interpersonal manipulation and callous affect should be statistically non-significant.

METHODS

Participants and sampling

Study 1

Participants consisted of 397 students (75% women; mean age: 20.62; 60% East Asian, 28% European Heritage, 8% South Asian, 4% mixed ethnicities) at a large university as part of a study on personality and antagonistic behaviours. Participants participated in exchange for extra course credit. Participants filled out all questionnaires online to ensure anonymity.

Study 2

Participants consisted of an online community sample of 388 adults (54% women; mean age = 31.28; 56% Euro, 25% East Asian, 12% South Asian, 3% African/Islander, 4% other mixed ethnicities) recruited from Amazon's Mechanical Turk as part of a larger study on personality and political attitudes. Mechanical Turk is now a widely accepted source of reliable and diverse data (see Buhrmester, Kwang, & Gosling, 2011; see also Paolacci, Chandler, & Ipeirotis, 2010).

There are several advantages to using two separate samples, especially samples that also differ in demographics. First, we can be certain that the results replicate in two independent samples. Second, we can be sure that the results generalize to samples of older adults in the general population as well as students. There were no inclusion or exclusion criteria for either study.

Materials and procedures

Study 1

The first study only included measures of the DT proper: Psychopathy, Narcissism and Machiavellianism.

Psychopathy. Participants filled out the 64-item Self-Report Psychopathy Scale (SRP; Paulhus et al., in press). Similar to the Psychopathy Checklist-Revised (Hare, 2003) and other similar psychopathy instruments, the SRP breaks into four inter-correlated facets: *Interpersonal manipulation* (e.g. *I would get a kick out of 'scamming' someone*), $\alpha = .84$; *Callous affect* (e.g. *I never feel guilty over hurting others*) $\alpha = .78$; *Erratic Lifestyle* (*I am an impulsive person*) $\alpha = .76$; *Antisocial Behaviour* (*I have purposely tried to hit someone with a car I was driving*) $\alpha = .79$. Each facet had good reliability. Each item was rated on a Likert Scale ranging from 1 (*Strongly Disagree*) to 5 (*Strongly Agree*). After reversing appropriate items, the SRP was averaged within the facets and into a total score, which also had excellent reliability ($\alpha = .91$).

Narcissism. Participants filled out the 40-item Narcissistic Personality Inventory (NPI; Raskin & Hall, 1979). The NPI was scored such that endorsement of the narcissistic option was scored as a *2* and endorsement of the non-narcissistic option was scored as a *1*. After reverse scoring appropriate items, the NPI items were then averaged to create a composite ($\alpha = .85$). Narcissism was then also decomposed into its respective facets (see Ackerman et al., 2011), which consist of *entitlement* ($\alpha = .53$), *leadership* ($\alpha = .76$) and *grandiosity* ($\alpha = .73$).

Machiavellianism. Participants filled out the 20-item MACH-IV (Christie & Geis, 1970). The MACH-IV (MACH for short) was also administered in Likert format on a scale of 1 (*Strongly Disagree*) to 5 (*Strongly Agree*). After reversing appropriate items, the MACH was averaged to create a composite ($\alpha = .77$). Machiavellianism was also decomposed into its two major facets: *manipulative tactics* ($\alpha = .68$) and *cynical worldview* ($\alpha = .55$).

Study 2

The same instruments were used to measure the DT in Study 2, with the exception of including the NPI-16 instead of the full 40-item NPI (Ames, Rose, & Anderson, 2006). All composite alpha reliabilities were good (SRP = .93; NPI-16 = .77; MACH = .78). In addition, this study included SDO, which has been implicated as a socially antagonistic variable that predicts oppression, prejudice, sexism and many other negative outcomes (Pratto, Sidanius, & Levin, 2006).

Social Dominance Orientation. Participants filled out a 16-item Likert-format SDO Scale (Pratto et al., 1994), with response options ranging from 1 (*Strongly Disagree*) to 5 (*Strongly Agree*). After reverse scoring the appropriate items, all items were averaged into a composite scale

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($\alpha = .91$). However, the SDO scale contained two subscales that simply reflected direct-scored versus reverse-scored items. Nevertheless, both subscales were individually reliable (SDO Direct $\alpha = .90$; SDO Reversed $\alpha = .90$).

Statistical analyses

All univariate analyses were performed using SAS 9.1, and all multivariate analyses were performed using EQS 6.1. All subscale scores were estimated using SAS PROC STANDARD and DATA by simple unit weighting (Gorsuch, 1983), as the means of the standardized scores for all non-missing items on each subscale, and all scale scores were estimated as the means of the standardized scores for all non-missing subscales on each scale (Figueredo, McKnight, McKnight, & Sidani, 2000; McKnight, McKnight, Sidani, & Figueredo, 2007). The Cronbach's alphas and the covariance matrices of the scales were also both computed using SAS PROC CORR. All the unit-weighted scales were entered as manifest variables for multivariate causal analysis within the structural equation models. All Multisample Structural Equation Modelling (MSEM) was performed using EQS 6.1.

First, bivariate correlations were examined among the nine facets comprising the three traits of the DT: SRP: *Interpersonal Manipulation*, *Callous Affect*, *Erratic Lifestyle* and *Antisocial Behaviour*; NPI: *Entitlement*, *Leadership* and *Grandiosity*; MACH-IV: *Manipulative Tactics* and *Cynical Worldview*. We applied the same bivariate statistical methods to the student (Study1) and non-student (Study 2) samples for comparison, with the exception that we included the two SDO subscales in the analyses for Study 2 along with the DT facets. We predicted that each facet would be positively correlated with the others, as seen in previous research (e.g. Jakobwitz & Egan, 2006; Paulhus & Williams, 2002; Vernon et al., 2008).

Second, we constructed structural equation models to test a series of alternative hypotheses regarding the latent structure of the DT. A *saturated* structural model is one that freely estimates the direct correlations among all of the constructs; any structural model that can adequately reproduce that observed pattern of correlations with a *reduced* set of hypothesized causal pathways is called a *restricted* model and is deemed to be superior by the principle of parsimony (James, Mulaik, & Brett, 1982). Performing hierarchically nested model comparisons between inclusive and restricted models therefore constitutes a sophisticated hypothesis test of the specific causal pathways that were omitted from the specification of the restricted model (Widaman, 1985).

Third, we constructed MSEMs for each of our alternative hypotheses by disaggregating and then systematically comparing and contrasting the data obtained from the subsamples the student (Study1) and non-student (Study 2) research participants. This procedure may be used to evaluate the adequacy of the same factor analytic structural equation model to data from two independent samples (Bentler, 1995; Byrne, 1994).

Fourth, all structural equation models were evaluated by use of Chi-squared (χ^2), the Bentler–Bonett Normed Fit Index (*NFI*), the Bentler–Bonnett Comparative Fit Index (*CFI*), the Root Mean Squared Residual (*RMR*) and the Root Mean Squared Error of Approximation (*RMSEA*). Index values of the NFI and CFI greater than 0.90 are considered satisfactory levels of practical goodness-of-fit (Bentler & Bonnett, 1980; Bentler, 1995), whereas for both RMR and RMSEA, values of 0.05 or less are considered indications of excellent to good fit, values between 0.08 and 0.10 are considered indications of a acceptable to mediocre fit and values greater than 0.10 are considered indications of a poor to very poor fit (Steiger & Lind, 1980; Browne & Cudeck, 1993). The *CFI* was selected because it is adjusted for model parsimony and performs well with moderate to small sample sizes, especially with Maximum Likelihood estimation (Bentler, 1990; Hu & Bentler, 1995). Alternative fit indices, such as the Bentler–Bonett Non-NFI, provide poor estimates of model fit with smaller samples (Hu & Bentler, 1995). The differences between hierarchically nested models in their statistical and practical indices of fit indicate the relative loss of fit of the model to the data entailed by either the elimination or constraining of specific causal pathways.

For the measurement component of the models, although we fully expected that all DT facets should converge as indicators of a single common factor, we experimentally excluded the two facets (SRP: *Interpersonal Manipulation* and *Callous Affect*), which we have hypothesized to constitute the *Dark Core*, to serve as our exogenous predictor variables. The latent variable representing the DT common factor was therefore composed of the following DT facets that remained: SRP: *Erratic Lifestyle* and *Antisocial Behaviour*; NPI: *Entitlement*, *Leadership* and *Grandiosity*; MACH-IV: *Manipulative Tactics* and *Cynical Worldview*.

For the structural component of the models, we predicted (i) that the hypothesized common *Dark Core* (i.e. Hare's *Factor 1*) should account for the preponderance of the DT common factor variance and (ii) that when the common variance that is *spuriously* attributable to the hypothesized *Dark Core* of the DT facets is statistically accounted for, the remaining facets should reveal relatively trivial residual correlations.

Finally, for the multisample aspect of these models, we predicted that the factor loadings of the DT common factor would be statistically equivalent across the student and non-student samples. Furthermore, we predicted that the structural effects of the two Dark Core facets upon the DT common factor, as well as the correlations of these exogenous variables with each other, would be statistically equivalent across the student and non-student samples.

RESULTS

Descriptive statistics

Table 1 presents descriptive statistics and *t*-tests by sex of participant for each measure used in the Studies 1 and 2. As usual, psychopathy was much higher in men compared with women, and in general, all three DT elements were higher in men when compared with women (see Table 1). Although men were higher in the three DT traits when compared with women, the magnitude of these DT inter-correlations across men and women may differ. To test this assertion, we conducted a series of multiple regressions predicting each DT

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Table 1. Studies 1 and 2: means, standard deviations, and comparisons by sex of participant for the Dark Personality traits

	Study 1 men	Study 1 women				Study 2 men	Study 2 women			
Variable	Mean (*SD*)	Mean (*SD*)	*t*	*d*	*p*	Mean (*SD*)	Mean (*SD*)	*t*	*d*	*p*
Psychopathy	2.53 (0.41)	2.11 (0.36)	9.43*	0.88	<0.001	2.54 (0.46)	2.23 (0.49)	6.10*	0.63	<0.001
Narcissism	1.42 (0.18)	1.35 (0.17)	3.67*	0.41	<0.001	1.38 (0.21)	1.29 (0.22)	4.07*	0.41	<0.001
Mach.	2.89 (0.45)	2.77 (0.44)	2.32*	0.27	0.020	2.87 (0.42)	2.73 (0.47)	3.01*	0.32	0.003
Social Dom.	—	—	—	—	—	2.50 (0.69)	2.19 (0.73)	4.21*	0.44	<0.001

*$p < .05$.

trait from: sex of participant, a different DT trait and a sex x trait interaction. These regressions were to test if gender altered the magnitude of association among the traits. None of the DT associations (for either sample) were significantly altered by sex of participant. These results are consistent with the recent work of Figueredo and colleagues (2010; 2011a, 2011b), who performed a series of hierarchically nested MSEMs using a completely different sample. The relevant finding was that both the factor loadings of the latent DT factor and its effect upon an external criterion (Sexually Coercive Behaviours) were statistically equivalent across sex of participant, in that all cross-sample equality constraints imposed on these model parameters were statistically acceptable.

Table 2 presents the bivariate correlations among the DT and SDO traits, as typically estimated. As predicted, these bivariate correlations were all high and statistically significant.

Below the diagonal, Table 3 displays the bivariate correlations among the lower-order facets or subscales comprising the DT and SDO traits for both studies. As predicted, every facet of the three traits was positively and significantly correlated with the others, with the exception of *leadership* having no significant correlation with *Machiavellian tactics* or *Machiavellian views*. However, significance tests are a poor criterion of relative magnitude, given the large sample sizes. Looking strictly at effect sizes, only four of the 36 correlations failed to exceed .20. In fact, not including manipulation or callousness, the average of the correlations among between-scale facets was .25 for Study 1 and .29 for Study 2. By comparison, the average of the correlations within-scale facets was .38 for Study 1 and .37 for Study 2. In sum, these facets are all moderately correlated with each other in a positive manifold.

Finding and testing plausible models

In addition to our hypothesis that manipulation and callousness constitute the common core of the DT, we conducted an exploratory analysis to see if there is (i) any preliminary evidence to support this assertion and (ii) if there are other relatively close competing models.

To accomplish this exploratory analysis, we combined both samples in the present study and computed unit-weighted mean scores of each DT facet to create a common variable of the nine facets. Aside from interpersonal manipulation and callous affect, we tested an alternative series of regressions by using

Table 2. Studies 1 and 2: bivariate correlations among the Dark Personality and Social Dominance traits

	Study 1				Study 2			
	1	2	3		1	2	3	4
1. Psychopathy	—			1. Psychopathy	—			
2. Narcissism	.46*	—		2. Narcissism	.52*	—		
3. Mach.	.53*	.22*	—	3. Mach.	.66*	.48*	—	
				4. Social Dom.	.57*	.33*	.37*	—

*$p < .05$

Table 3. Studies 1 and 2: bivariate and residual correlations among Dark Triad facets and Social Dominance facets

Facets	1	2	3	4	5	6	7	8	9	10	11
1.SRP: Manipulation	—	**.64***	**.59***	**.40***	.26*	.30*	.52*	.57*	.50*	—	—
2.SRP: Callousness	**.68***	—	**.56***	**.47***	.25*	.16*	.41*	.37*	.39*	—	—
3.SRP: Erratic	**.62***	**.56***	—	**.47***	.29*	.35*	.34*	.31*	.30*	—	—
4.SRP: Antisocial	**.50***	**.58***	**.56***	—	.24*	**.26***	.25*	.22*	.25*	—	—
5.NPI: Leadership	.49*	.40*	.32*	.29*	—	**.46***	**.24***	.09	-.01	—	—
6.NPI: Grandiosity	.43*	.28*	.29*	.27*	**.43***	—	**.21***	.21*	.14*	—	—
7.NPI: Entitlement	.32*	.40*	.24*	.28*	**.19***	**.14***	—	.35*	.37*	—	—
8.MACH: Tactics	.68*	.47*	.47*	.34*	.36*	.33*	.30*	—	**.52***	—	—
9.MACH: Views	.60*	.55*	.41*	.29*	.33*	.30*	.29*	**.49***	—	—	—
10.SDO: Direct	.53*	.61*	.36*	.46*	.33*	.15*	.27*	.42*	.42*	—	—
11.SDO: Reversed	.19*	.35*	.22*	.32*	.17*	.15*	.11*	.12*	.17*	**.40***	—

*$p < .05$. Correlations in **bold** are facets that are within the same scale. Study 1 correlations are presented *above* the diagonal, and Study 2 correlations are displayed *below* the diagonal. Each number corresponds to the same trait.

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other two-facet combinations. Table 4 suggests that manipulation and callousness were, by far, the best models.

To test the hypothesis that manipulation and callousness are, indeed, the best combination for extracting the common core, we took the aforementioned analyses a step further. We created residuals by regressing each DT facet (one at a time) on the best set of two-facet combinations. In other words, we chose the four two-facet combinations that had the best correlations with the common unit-weighted factor (these were manipulation and callousness, entitlement and Mach Tactics, Mach Tactics and Mach Worldview, Erratic Lifestyle and Antisocial Behaviour). After we residualized each facet (excluding facets redundant with predictors), we saved these residual scores. To also test the hypothesis that agreeableness is the common core, we also created residual scores by regressing each facet on agreeableness, while saving the residual.

We then conducted a series of Exploratory Factor Analyses by using Principal Axis Factoring, extracting a single factor. We considered factor loadings of .32 or better to be noteworthy (e.g. Worthington & Whittaker, 2006). Table 5 shows that, with respect to facets residualized using manipulation and callousness, three items had sufficient (>.32) loadings: erratic lifestyle, leadership and grandiosity for the student sample, and only two (erratic lifestyle and antisocial behaviour) emerged in the MTurk sample. In other words, only one facet (erratic lifestyle in the student sample) loaded on a common factor that had other scale facets with significant loadings. Table 5 shows that no other model, including agreeableness, came close to extracting this much variance.

Multisample structural equation models: Do the MTurk and student samples match?

The inclusive and restricted models

We conducted a series of MSEMs to determine if there was structural invariance across the student and MTurk samples. In doing so, we tested an inclusive model ($\chi^2(42) = 185.47$, $p < .001$; $CFI = .93$, $NFI = .94$; $RMR = .05$; $RMSEA = .093$), which imposed no equality constraints, and a restricted model ($\chi^2(52) = 211.33$, $p < .001$; $CFI = .92$, $NFI = .94$; $RMR = .07$; $RMSEA = .089$), which did. The *constrained* version of this model had negligible differences in degrees of freedom, indicating greater model parsimony for the constrained model. As a consequence, the constrained model was the best.[3] Figure 1 presents the path diagram for the best fitting model (manipulation and callousness predicting the common core, constrained across both samples).

Table 4. Studies 1 and 2: proportion of variance explained through different combinations of Dark Triad facets

	Explained variance of unit-weighted factor scores
Erratic + Antisocial	$R^2 = .62$
Antisocial + Leadership	$R^2 = .57$
Leadership + Grandiosity	$R^2 = .41$
Grandiosity + Entitlement	$R^2 = .53$
Entitlement + Tactics	$R^2 = .58$
Tactics + Views	$R^2 = .58$
Manipulation + Callousness	$\mathbf{R^2 = .79}$
Average of all others	$\mathbf{R^2 = .55}$

Note: Unit-weighted factor correlations were calculated on both samples combined.

These results have the following two implications: (i) The hypothesis that *manipulation* and *callousness* constitute the common dark core was further supported using a series of MSEM models. (ii) This model could be constrained across the student and MTurk samples indicating that the structural model is equivalent for both.

The second part is particularly critical for researchers interested in comparing samples obtained from student versus MTurk populations. It appears, at least with respect to the DT, that they are structurally equivalent.

As separate predictors, the two facets that constitute the two components of the *Hare's Factor 1* (interpersonal manipulation and callous affect) explained 93% of the variance in the DT Common Factor in both Studies 1 (the student sample) and 2 (the non-student sample). These findings indicate that, as hypothesized, the two facets comprising Hare's *Factor 1* jointly account for the preponderance of the common factor variance among the remaining DT and SDO facets. We therefore refer to these two facets, interpersonal manipulation and callous affect, as constituting the *Dark Core* of this positive manifold of observed correlations.

Supplementary analyses

It is important to also show that within each scale, the residual correlations (residualized using manipulation and callousness), although reduced, are not all completely equal to zero (see Table 6). We only estimated residual correlations among facets that were subscales of conventional DT measures. Erratic lifestyle and antisocial behaviour were both from the SRP; Machiavellian tactics and Machiavellian views were both from the MACH-IV; Leadership, Entitlement and Grandiosity were all from the NPI. These findings suggest that these residual correlations might represent no more than the method variance associated with each of the three trait measures. On the other hand, these within-scale residuals might represent unique components associated with each of the conventional DT traits. Thus, these within-scale residuals might indicate that the facets of each scale are reflections of three partially autonomous constructs.

Alternative models

An anonymous reviewer of an earlier manuscript version suggested the following analysis: There are at least two other models that have been proposed, which claim to identify an alternative core of the DT. One theory is that the core of the DT consists of an *Exploitative Sexual Style* (Jonason et al., 2009). It is unclear how to test this theory because the terminology is vague.

The second competing model was tested empirically: Agreeableness. The Big Five Inventory (John & Srivastava,

[3]It should be noted that removing callousness or manipulation from either unconstrained or constrained models substantially reduces model fit (e.g. All $CFI < .90$, All $NFI \leq .91$, All $RMR > .06$, All $RMSEA > .10$).

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Table 5. Studies 1 and 2: loadings on Dark Triad facets of both non-residualized and residualized common factors

	Loadings of raw factors	Loadings of residualized factors				
		Manip. and Callous	Erratic and Antisocial	Entitle. and Mach Tact.	Mach Tact. and Mach Views	Agree.
SRP: Manip.	.87* (.89*)	— (—)	.80* (.82*)	.66* (.77*)	.71* (.67*)	.79*
SRP: Callous	.73* (.79*)	— (—)	.48* (.57*)	.64* (.73*)	.65* (.70*)	.63*
SRP: Erratic	.69* (.70*)	.36* (.44*)	— (—)	.72 * (.60*)	.70* (.59*)	.67*
SRP: Antisoc.	.54* (.61*)	.29 (.68*)	— (—)	.55 * (.56*)	.53* (.65*)	.54*
NPI: Entitled	.57* (.41*)	.11 (.04)	.51* (.31)	— (—)	.42* (.23)	.42*
NPI: Leader	.35* (.53*)	.60* (.07)	.09 (.46*)	.33* (.41*)	.49* (.37*)	.35*
NPI: Grand.	.39* (46*)	.70* (.13)	.11 (.37*)	.33* (.34*)	.39* (.29)	.41*
MACH: tact.	.57* (.68*)	−.05 (.06)	.62* (.59*)	— (—)	— (—)	.38*
MACH: views	.54* (.64*)	−.12 (−.09)	.57* (.61*)	.19 (.43*)	— (—)	.39*

*Loading > .32. Mturk sample (Sample 2) is in parentheses, and the student sample (Sample 1) is not in parentheses.

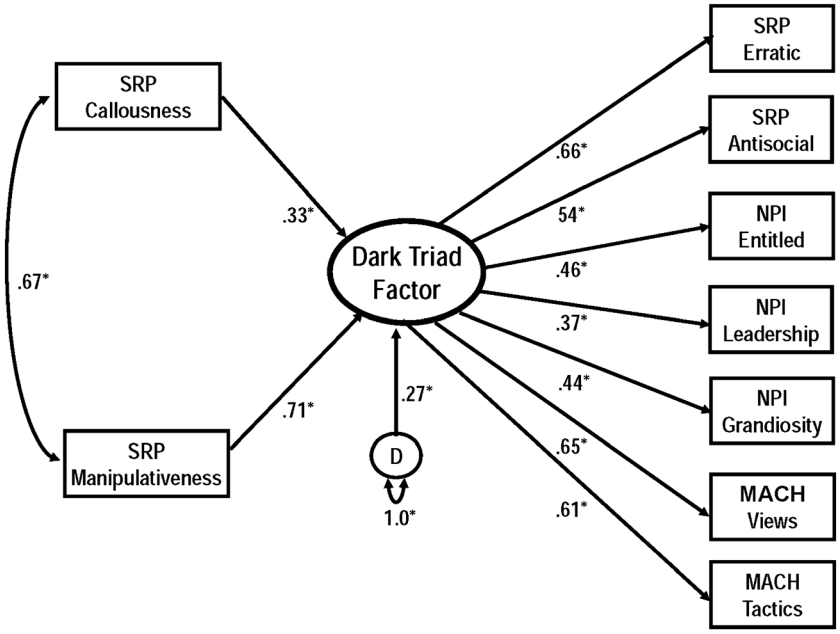

Figure 1. Final MSEM model of the best model describing the core of the Dark Triad.

Table 6. Studies 1 and 2: residual correlations among Dark Triad facets within conventional Dark Triad scales

Indicator 1	Indicator 2	Study 1	Study 2
Antisocial	Erratic	.23*	.29*
Leadership	Entitlement	.10	−.04
Grandiosity	Entitlement	.04	−.02
Grandiosity	Leadership	.42*	.28*
Mach. views	Mach tactics	.32*	.11

*$p < .05$.

1999) was included in the student sample (Study 1) as part of a larger study. Using the Study 1 sample, we examined how much common variance would be left if we residualized DT facets using agreeableness. These results showed that the common core of the DT was still intact.

To further this point, we entered manipulation, callousness and agreeableness as predictors of the common unit-weighted factor in a multiple regression. Using nested model comparisons, agreeableness accounted for 1% of the total variance if entered after manipulation and callousness. Although this proportion was statistically significant, it was a trivial percentage.

If agreeableness is entered first in the nested model, it still accounts for a significantly smaller effect size ($\beta = .13$) than either manipulation ($\beta = .53$) or callousness ($\beta = .21$). These results strongly support the notion that agreeable is not essential to the DT factor and that manipulation and callousness alone constitute the core of the DT common variance.

Because disagreeableness was highly collinear with manipulation and callousness, it is understandable that disagreeableness may have appeared a good candidate for the core of the DT factor. However, disagreeableness can imply an individual is high in negative emotionality (i.e. Caspi et al., 1997) or may have some other traits leading them to avoid social interaction (e.g. schizoid personality). Such individuals may have poor and dissonant interactions with others but may not intend to do harm or may feel guilty if they do. In sum, disagreeableness is not enough to describe the nature of these antagonistic traits—one must be manipulative and

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callous to be truly and intentionally malevolent. Furthermore, the *MSEM* results strongly suggest that both callousness and manipulation are necessary parts of the core of the DT (with manipulation being the more important of the two).

Social Dominance analysis

Social Dominance was left out of the MSEM analyses for purposes of direct comparison among the two samples. However, it is important to note that Social Dominance is likely to share the same malevolent core (manipulation and callousness) coupled with a unique politically oppressive and racist disposition. To test this theory, we first point out the strong and positive inter-correlations between Social Dominance, and its facets, with the rest of the DT, and the DT facets. Next, we regressed each facet of both Social Dominance and the DT on manipulation and callousness. We then conducted an Exploratory Factor Analysis (one factor extracted, Principal Axis Factoring) with the DT and Social Dominance facets. The results suggest that only the NPI-related facets loaded sufficiently and in the same direction on the common factor (see Table 7).

DISCUSSION

Two studies supported the hypothesis that the covariance observed among the DT and other antagonistic personalities (e.g. social dominance) is mostly captured by Hare's *Factor 1*. The first half of our discussion will first address findings in general, and the second half will discuss the implications of these findings in greater detail.

Both manipulation and callousness appear to be necessary and sufficient components of a malevolent personality. This assertion is supported by the fact that both manipulation and callousness (i.e. the *Dark Core*) accounted for all the non-within-scale inter-relationships among the DT facets. In sum, this malevolent core seems to be a common element among all antagonistic variables.

These arguments shed light on the core of personality theory's *darkest* variables. Indeed, all malevolent traits have a common *Dark Core* of covariance, but it is their *behavioural, attitudinal and belief-related* components that make them unique. For example, Machiavellians have a dark personality with a cold, calculating, long-term and strategic style (Jones & Paulhus, 2009). Psychopathy is a dark personality with an impulsive and antisocial style (Williams et al., 2007). Narcissism is a dark personality with an egotistical style (Morf & Rhodewalt, 2001). Finally, individuals high in Social Dominance have a dark personality at a group level with a politically oppressive style (Sidanius et al., 2000). It is entirely possible that variables not included in the present study also fit this category, such as sub-clinical sadism (e.g. Chabrol, Van Leeuwen, Rodgers, & Sejourne, 2009). Perhaps sadism consists of individuals with a dark personality and a behavioural style of enjoying hurting others.

Note that once the *Dark Core* (i.e. Hare's *Factor 1* or interpersonal manipulation and callous affect) is statistically addressed, one has a person who may be calculating/strategic, erratic/antisocial, egotistical or politically oppressive. Indeed, these variables each has nothing to do with one another, either theoretically or empirically. This assertion was supported by the low to non-existent residual correlation among the facet scores.

Recent evidence has emerged to suggest that at the core of the DT is a lack of Honesty/Humility (Lee & Ashton, 2005). We would argue that this perspective is correct, but missing callousness, or its inverse (empathy). An absence of Honesty/Humility (a trait which can be conceptualized as the inverse of interpersonal manipulation) should account for a large portion of variance associated with the DT, and indeed, it does (Lee & Ashton, 2005; see also Lee et al.,). Likewise, callousness (or a lack of empathy) has recently been shown in the laboratory to *also* be a common vein running through the core of the DT traits (Wai & Tiliopoulos, 2012).

It should be noted at the outset that the present sample was extremely limited insofar as variance in antisocial behaviour. Given the samples consisted of students and an online adult community, it remains difficult to generalize these findings to criminal, clinical, at risk or more extreme scoring populations. In addition, the present research consisted only of self-report data. Future research using peer reports or behavioural observations that find manipulation and callousness at the core of the DT would further improve our confidence in the present conclusions.

Table 7. Study 2: examining loadings of residualized common factors on dark personality facets, including Social Dominance Orientation

	Study 2 with SDO	
SRP: Manipulation	—	—
SRP: Callous	—	—
SRP: Erratic	.69	.00
SRP: Antisocial	.66	−.08
NPI: Entitled	.41	.58*
NPI: Leader	.48	.73*
NPI: Grandiosity	.56	.72*
MACH: tactics	.64	.13
MACH: views	.63	.03
SDO: pro trait	.61	−.66*
SDO: reversed	.39	−.61*

*Loading > .32.

Implications

The Vulnerable Dark Triad

Miller and colleagues (2009) have noted that pathological narcissism (sometimes referred to as covert narcissism), secondary psychopathy and borderline personality organization, form what they refer to as the *Vulnerable DT* (*VDT*). These traits have an antagonistic core and are toxic to others, much like the DT discussed by Paulhus and Williams (2002). The distinction is that the VDT, unlike the DT, is also associated with high levels of neuroticism and/or emotional instability. In this way, one can hypothesize that statistically controlling for neuroticism among these traits would still leave the malevolent common core, which we argue is

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interpersonal manipulation and callous affect. Thus, future research should examine how statistically removing both the *Dark Core* of and neuroticism would also eliminate the covariance among the VDT variables.

The present research may also stimulate further debate about the role that anxiety (i.e. neuroticism), or a lack of anxiety may play in defining different aspects of antisocial behaviour. Malevolent behaviour, which persists in the absence of *Factor 1* of psychopathy, may be driven by reactive mechanisms (e.g. vulnerability) rather than selfish ones (see Reidy, Zeichner, Miller, & Martinez, 2007). Given that the research was not conducted on a clinical or criminal population, the present data cannot speak to these assumptions. However, linking antisocial behaviour in the presence or absence of a *dark core* may be informative for future research on clinical or incarcerated samples.

Why not combine the Dark Triad into a composite?
The problem with combining these variables into a multivariate composite seems fairly obvious. What would it mean to combine two traits—one (such as psychopathy) with high levels of impulsivity (X) and one (such as Machiavellianism) with impulse control (~X)? X and not X cannot occur within the same individual. It can certainly be the case that an individual is low in all three of the DT and the three traits are equally absent, but among those high in malevolence, either one has the impulse control for strategic manipulation or not—thereby defining him or her as more Machiavellian or psychopathic.

It may also be the case that Machiavellians *can* think short term if they so choose (Jones & Paulhus, 2009; Wilson, Near, & Miller, 1996) but can also inhibit impulses, at least better than those high in psychopathy can (Jones & Paulhus, 2011). The impulsivity of those high in psychopathy results in individuals who do not have the ability to delay gratification, impulsivity will set in and the psychopath will act (for better or worse). In sum, it would not make sense to combine the DT because their unique pieces would be inconsistent or at the very least, orthogonal. Rather than combining the traits, if an individual is interested solely in higher-order malevolence, one merely needs to study the *Dark Core*, which is the first factor originally captured by Hare and colleagues (1989).

Why not just study the unique pieces?
As Lynam, Hoyle, and Newman (2006) have pointed out, statistically controlling for the covariance among variables leaves one with a great uncertainty as to what is being studying. Indeed, the *Dark Core* of manipulation and callousness is an *intrinsic and vital* part of the psychopathy construct. However, it appears that it is also an intrinsic and vital part of the Machiavellianism construct. Machiavellianism is *not* Machiavellianism without it. However, Machiavellianism is also not Machiavellianism without long-term, calculating and strategic tactics. As a result, any Machiavellianism scale should somehow assess the common *Dark Core* shared by the dark personalities (i.e. Hare's Factor 1) as well as its unique elements (long-term and calculating manipulation). The same logic holds for the other variables (narcissism and social dominance).

What does this research mean for the definition of psychopathy?
The core of overlapping malevolent personalities is indeed defined by Factor 1 of Hare's psychopathy model or manipulation and callousness. One implication from the present research is that psychopathy cannot be defined by manipulation and callousness alone. These two aspects, by themselves, could be describing one who is Machiavellian, narcissistic, psychopathic or high in Social Dominance. If erratic lifestyle is added, it still remains unclear if the person being described is a narcissist or psychopath because both traits have been linked to erratic/impulsive behaviour (Vazire & Funder, 2006; Newman, 1987). We argue that only in the presence of manipulation, callousness, erratic lifestyle and a predisposition towards antisocial behaviour can one confidently determine if the person in question is a psychopath or not.

Conclusion

In general, the present data strongly suggest that Hare's *Factor 1*, or the *manipulation* and *callousness*, is primarily responsible for the observed covariation among the dark personalities. It is possible that this research might inspire others to resolve other higher-order variable conflicts in personality literature. When a clear and measurable manifest variable can account for the observed covariance among traits and the residual components of those traits are not consistent with one another once this variable is accounted for, it is potentially misleading to combine those traits into a multivariate composite and apply more speculative labels such as *Exploitive Sexual Style*. When one extracts the shared or *common factor* variance of the DT, one is primarily extracting interpersonal manipulation and callous affect (or the inverse, which is honesty and empathy). It is likely that this *Dark Core* is a necessary component of a wide array of alternative antagonistic social and sexual strategies.

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