



Review

Unpacking “evil”: Claiming the core of the Dark Triad

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ABSTRACT

Understanding the nature of “evil” has been challenging for a number of reasons. A productive psychological approach to this problem has been to study antisocial traits associated with negative outcomes. One such approach has grouped together three antisocial personalities known as the “Dark Triad”: Machiavellianism, Narcissism, and Psychopathy. Researchers have proposed various models to account for the common core of these antisocial personalities – a core that might well be considered the psychological equivalent of the core of “evil” – and these models have not been directly compared, to date. We conducted two studies (total $N > 700$) to compare the utility of the various models using Canonical Correlation Analyses (CCAs). Results confirm that the HEXACO personality model (and, in particular, the Honesty–Humility factor) is not only the most theoretically parsimonious model, it also best accounts for the empirical overlap between these constructs that represents the core of the Dark Triad. Results also support the idea that the core of the Dark Triad represents an alternative life history strategy.

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1. Introduction

Evil is a concept familiar to many, but one that has proven difficult to define and study (Baron-Cohen, 2011). According to Miriam-Webster (2014), evil can be defined as being “morally bad” and “causing harm or injury to someone”. As psychologists, our goal is to translate this linguistic concept of evil into a measurable aspect of individual differences in traits and/or behaviors (e.g., psychopathy; Hare, 2003). Recently, Paulhus and Williams (2002) attempted to elucidate “evil” under the umbrella of the “Dark Triad”, three moderately overlapping aversive constellations of personality traits that are associated with significant harm or exploitation of others. This trio includes Machiavellianism (characterized by manipulation, exploitation, and self-interest), Narcissism (grandiosity, egotism, and a profound lack of empathy), and Psychopathy (antisociality, impulsivity, callousness, and lack of remorse). Given the overlap of some of the traits that comprise these three personalities, it is not surprising that they all correlate with a callous and manipulative interpersonal style (Jones & Paulhus, 2010).

At least five plausible theories have been proposed to explain the Dark Triad’s shared variance. First, Paulhus and Williams suggested that low levels of the Big Five Agreeableness personality

factor explained the core of the Dark Triad (2002). Second, Jones and Paulhus (2010) suggested that the three Dark Triad personalities are all characterized by callousness, an idea that has been proposed as the explanation for evil, in general (Baron-Cohen, 2011). Third, Jonason and Webster (2010) suggested that the common element of the Dark Triad was a fast and exploitive life history strategy. Fourth, Lee and Ashton (2005), argued that low Honesty–Humility, a HEXACO personality factor not captured by the Big Five, accounts for the overlap in the Dark Triad. Fifth, and most recently, Jones and Figueredo (2013) proposed that Hare’s (2003) Factor 1 of psychopathy (i.e., interpersonal manipulation and callousness) was at the heart of the Dark Triad.

One is therefore left with a variety of plausible competing explanations for the core of the Dark Triad (that is itself, perhaps the best current psychological representation of “evil”). To date, there have been no direct comparisons of these competing explanations. We therefore plan to briefly review the empirical evidence for each of these explanations before directly testing them against one another. Further, we chose to incorporate an evolutionary framework that would both allow for a potential explanation of how these traits arose in the first place and situate the results within the broader context of human behavior (e.g., Ellis et al., 2012).

1.1. The Dark Triad

Paulhus and Williams (2002) coined the term “Dark Triad” to describe Machiavellianism (calculated social manipulation),

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Psychopathy (callous, impulsive, and predatory behaviors), and Narcissism (excessive ego and selfish behavior). Even at sub-clinical levels, these three disagreeable and antagonistic constellations of personality traits are correlated with significant social, emotional, and legal harm (Furnham, Richards, & Paulhus, 2013). At clinical levels, Psychopathy is the single best predictor of violent recidivism (Harris, Rice, & Cormier, 1991) and accounts for a disproportionate amount of violent crime (i.e., psychopaths represent 15–30% of the prison population but commit up to 50% of violent crimes; Hare & Jutai, 1983; Hare & McPherson, 1984). Thus there is good ground for claiming that these traits are associated with significant, deliberate harm to others, meaning they overlap well with the English meaning of “evil” (Miriam-Webster, 2014).

In contrast to the harm that they cause to others, these personality traits may confer significant immediate and evolutionary benefits. Machiavellianism’s callous and calculated behavioral strategies are related to career success (reviewed by Furnham et al., 2013), and even adolescents with Machiavellian traits seem to benefit from them (Hawley, 2003). More specifically, Machiavellian adolescents were socially skilled, liked by their peers, and were well-adjusted (Hawley, 2003). Hawley suggests that Machiavellians are “coercive controllers”, using an adaptive combination of pro- and anti-social tactics to achieve their goals.

Psychopathic individuals share some traits with Machiavellians, namely callousness and interpersonal manipulation, but also tend to be reckless, irresponsible, and grandiose. Psychopaths are hypothesized to be evolved cheaters who capitalize on the cooperation of others by lacking the natural emotional and cognitive mechanisms that deter antisocial behavior (Book & Quinsey, 2004; Mealey, 1995). Psychopaths may have more success in business and politics (Babiak & Hare, 2006; Lillienfeld et al., 2012), they engage in more short-term mating tactics (Harris, Rice, Hilton, Lalumiere, & Quinsey, 2007), and they tend to avoid victimizing genetically related kin (Krupp, Sewall, Lalumiere, Sheriff, & Harris, 2012).

Narcissism includes grandiosity, entitlement, and a chronic need for affirmation. These traits may be beneficial in keeping people’s efforts focused on themselves at the expense of others around them. Narcissism appears to offer benefits at the beginning of a social relationship (Campbell & Campbell, 2009), in short-term academic contexts (Robins & Beer, 2001), and in overall life satisfaction and self-esteem (Rose, 2002).

All of the Dark Triad personalities are therefore characterized by ruthless self-advancement (Zuroff, Fournier, Patall, & Leybman, 2010) that may exploit the evolved cooperative behaviors of most people while eliminating the also evolved need to reciprocate (Cosmides & Tooby, 1992). Further, all three Dark Triad personalities appear to relate positively to mate poaching and short-term mating (Jonason, Li, & Buss, 2010). Thus, there appears to be reasonably strong evidence for viewing the Dark Triad as being due to, at least in part, evolved psychological mechanisms. Given the theoretical and statistical overlap between these three constructs within the Dark Triad, Paulhus and Williams (2002) suggest that researchers investigating one of the constructs would benefit from measuring and controlling for the other two. This has led to researchers attempting to statistically define a common core that would explain the similarity between these personalities. This statistical core could help theoretically explain the core of “evil” by revealing the common traits that underlie a broad range of antisocial traits. This has triggered a rapidly expanding research interest in these core variables (see Furnham et al., 2013, for a review) that has led to at least five competing theoretical explanations.

1.2. Attempts to explain the core of the Triad

Initially, Paulhus and Williams (2002) identified low Big Five Agreeableness as the best explanation for the overlapping traits

amongst the Dark Triad variables, a hypothesis later supported by Jakobwitz and Egan (2006). The Big Five is a widely used measure of personality traits that has been studied extensively (deRaad & Perugini, 2002). This offers the advantage of significant construct validity when describing results, as Big Five Agreeableness is known to correlate with a broad range of antisocial traits (Jones, Miller, & Lynam, 2011). One issue is that the Big Five model has not been found to comprehensively account for socially malevolent personality traits (e.g., Lee & Ashton, 2005; Paunonen & Jackson, 2000; Veselka, Schermer, & Vernon, 2011), which would likely limit its ability to account for the core of the Dark Triad. Another disadvantage of the Big Five model is that even though the Big Five traits have been linked to evolutionary explanations (McAdams & Pals, 2006), no explicit mechanisms have been proposed for the evolution of the five specific personality factors or the variation within them.

A second explanation that has been proposed is that a lack of empathy (i.e., callousness) accounts for the overlap in the Dark Triad (Jones & Paulhus, 2010). A similar explanation of “evil” was proposed by Simon Baron-Cohen in his book “The Science of Evil” (2011), where he examined the trio of Psychopathy, Narcissism, and Borderline Personality Disorder. Baron-Cohen argued that the defining feature of all three was a zero-empathy personality. Unfortunately, Baron-Cohen’s contention is problematic for several reasons. First, it is more descriptive than predictive, in that the act of intentionally harming others requires a degree of callousness, rendering the explanation tautologically circular. Second, he also argues the same zero-empathy underlies autistic individuals. There is no evidence of a common development or neurological pathway for the two classes. Third, it has been suggested that psychopathic individuals have Callous Empathy (Book, Quinsey, & Langford, 2007), where they are able to understand the emotions and motivations of another individual without the normal affective response to such information. Finally, zero-empathy was not used to explain Machiavellianism, presumably because Machiavellians are capable (to some degree) of turning their empathy on and off as it suits their needs (McIlwain et al., 2012). Thus, while empathy and callousness are almost certainly related to the core of the Dark Triad, the concept of zero-empathy appears to suffer from numerous theoretical concerns and offers an incomplete explanation for the core traits.

A third theory, proposed by Jonason, Webster, Schmitt, Li, and Crysel (2012), suggests a common life history strategy – that is, a “fast” and exploitive evolutionary strategy that emphasizes personal gains at the expense of cooperation. Jonason and colleagues (2009, 2010) reported that not only were the Dark Triad personalities associated with short-term mating, but the association was stronger for men than for women. This research offers the advantage of focusing on the behavioral overlap of the Dark Triad personality types. However, Life History Theory is a mid-level biological explanation that focuses on the behavioral, differential, allocation of energy/resources over the lifespan (Pianka, 1970; Stearns, 1977). This means that while it offers the possibility of consilience at a broader level (Figueredo et al., 2006), it lacks explicit grounding in specific, particular individual traits.

The fourth explanation was offered by Lee and Ashton (2005), who suggested that low Honesty–Humility accounted for the overlap in the dark personalities. Honesty–Humility is one of six personality factors of the HEXACO model of personality (Lee & Ashton, 2008). The HEXACO is broadly similar to the Big Five, but has been found to have better cross-cultural validity and the structure has replicated in the lexicons of many different languages (Ashton & Lee, 2007; Ashton et al., 2004, 2006; Lee & Ashton, 2008). Unlike the Big Five, there appear to be specific heritable components for each of the six personality factors (Lewis & Bates, 2014). It also offers a strong theoretical explanation for the specific personality traits within it as well as their individual

variation by relating them to two broad categories. The first is a willingness to work and explore (Extraversion, Conscientiousness, and Openness) and the second is a willingness to cooperate with both strangers and kin (Honesty–Humility, Emotionality, and Agreeableness; Lee & Ashton, 2012). Emotionality represents concerns for others, particularly kin. Agreeableness represents a willingness to forgive (i.e., tolerate exploitation) while Honesty–Humility represents a willingness to forgo self-aggrandizing opportunities (i.e., avoid exploiting others). In support of the claim that low HEXACO Honesty–Humility is the core of the Dark Triad, Lee et al. (2013) reported that Honesty–Humility was strongly associated with a Dark Triad composite and was just as effective in the prediction of outcome variables related to the acquisition of sex, power, and money (i.e., short life-history “r” strategies). Jones and Figuerdo (2013), however, suggested that Honesty–Humility does not include the callousness inherent in all three dark personalities, and, thus, that callousness would have to be combined with Honesty/Humility in order to account for the common core of the Dark Triad. Also, as a newer measure the HEXACO has significantly fewer published links with the general literature on aggression and antisociality than does the Big Five.

A final hypothesis comes from Jones and Figuerdo (2013) who turned to the Psychopathy literature to identify the core of the Dark Triad. They argue that the prominence of Psychopathy as a forensic measure (Harris et al., 1991) makes it a strong candidate for understanding the core of the Dark Triad. The standard measure of Psychopathy, the PCL-R, can be understood in terms of two correlated components (Hare, 2003). Factor 1 encompasses the callous and manipulative personality traits associated with psychopathy, whereas Factor 2 encompasses the erratic lifestyle and antisocial behavior associated with psychopathy. Jones and Figuerdo (2013) provided evidence that while Factor 2 distinguishes Psychopathy from Machiavellianism and Narcissism, Factor 1 represents the core of all three dark personalities. A potential downside to this explanation is that Psychopathy is itself an isolated concept that does not tie into broader theoretical conceptions of personality as do the Big Five and HEXACO.

1.3. Current studies

Each of the five models described above have received some support from the empirical literature and have some theoretical validity, making them plausible contenders for the core of the Dark Triad. However, to date, these contenders have not been directly compared with one another.

Of the five options above, we believe that the cross-cultural validity and evolutionary theory behind the HEXACO make it the most likely candidate for potentially explaining the core of the Dark Triad. We predict that the HEXACO model (and H in particular) will outperform the four other theoretical explanations for the overlap, including (a) Big Five personality traits, (b) callousness (i.e., zero-empathy), (c) sexual and social exploitative behaviors, and (d) Factor 1 psychopathic traits. Because Jones and Figuerdo (2013) suggested that Honesty–Humility would be a better predictor if callousness were also accounted for, we test whether adding a measure of callousness would significantly improve the explanatory power of the HEXACO model, but expect that it would not, mainly because a number of HEXACO items directly tap callousness/lack of empathy.

Finally, given the multiple evolutionary explanations for these antisocial personalities, as described in detail above, we expect that the core of the Dark Triad (calculated from the *b*-weights of the best performing model) would be correlated with measures of a fast life history strategy. Such a correlation would help explain why “evil” behavior has evolved and continues to exist as it would offer individual evolutionary benefits. Such benefits can result in

selfish behavior even if they cause harm to the population at large (Dawkins, 1976).

2. Methods

2.1. Study 1

2.1.1. Method

Participants and procedure. The Study 1 sample of 355 undergraduate students (240 female, 115 male) was recruited from the subject pool at a Canadian university. Participants ranged in age from 17 to 52 years ($M = 20.21$, $SD = 4.08$). Participants completed all measures online, and received course credit for their participation. Some of these data were reported elsewhere in the second study of an investigation of the role of psychopathy in the prediction of sexual fantasies and sexual behavior (Visser, DeBow, Pozzebon, Bogaert, & Book, 2014). None of the Dark Triad or personality variables were reported in the previous study.

2.1.2. Measures

Note: All scale scores and factor scores were calculated as the mean of constituent items after correcting for reverse-keyed items.

Dark Triad. The 27-item Short Dark Triad (SD3; Jones & Paulhus, 2014) measures Machiavellianism, sub-clinical Psychopathy, and Narcissism. Each scale score was calculated by averaging the corresponding nine items. Participants responded to items on a five-point scale from 1 (*strongly disagree*) to 5 (*strongly agree*).

Big Five Personality Model. The 44-item Big Five Inventory (BFI; John & Srivastava, 1999) provides scores on five personality factors: Openness to Experience, Conscientiousness, Extraversion, Agreeableness, and Neuroticism. Participants responded to items on a five-point scale from 1 (*strongly disagree*) to 5 (*strongly agree*).

HEXACO Personality Model. The 60-item version of the HEXACO-PI (Ashton & Lee, 2009) assesses six broad personality factors: Honesty–Humility, Emotionality, Extraversion, Agreeableness, Conscientiousness, and Openness to Experience. Participants responded to items on a five-point scale from 1 (*strongly disagree*) to 5 (*strongly agree*).

Factor 1 and Zero-Empathy Models. The 64-item Self-Report Psychopathy III (SRP-III; Paulhus, Neumann, & Hare, in press) yields an overall psychopathy score, as well as four subscales: Interpersonal Manipulation, Callous Affect, Erratic Lifestyle, and Antisocial Behavior. Factor 1 comprises the Interpersonal Manipulation and Callous Affect subscales, and Factor 2 comprises the Erratic Lifestyle and Antisocial Behavior subscales. Participants responded to items on a five-point scale from 1 (*strongly disagree*) to 5 (*strongly agree*). Zero-empathy was conceptualized as Callous Affect on the SRP, given that this subscale includes items relating to lack of empathy.

Fast Life History Strategy. As a proxy for a fast life history strategy, we included eight items from Birnbaum’s (2007) sexual fantasy scale, tapping unrestricted (e.g., participating in an orgy) and romantic (e.g., kissing passionately) sexual behavior. Rather than asking about fantasy frequency (as Birnbaum did), participants in the current research reported how frequently they’d engaged in fantasized behaviors on a scale from 1 (Never) to 5 (Very Often). Unrestricted sexual behavior requires being willing to pursue sexual relations without investment in or commitment to relationships (Simpson & Gangestad, 1991), and correlates with fast life history strategies (Baughman, Jonason, Veselka, & Vernon, 2014).

We also included the Interpersonal Manipulation subscale of the SRP in this model, as Jonason et al. (2010) suggest that it is integral to an exploitative and fast life history strategy. Unrestricted sexual behavior, romantic sexual behavior, and Interpersonal Manipulation were entered together into a canonical

correlation analysis (CCA) predicting the three subscales of the Dark Triad. We did not have any variables that directly tapped self-control, which is another important aspect of exploitativeness, according to Jonason et al. As such, results should be interpreted with caution. Nevertheless, we feel that these elements fairly represent the core aspect of a fast life history strategy that ultimately revolves around early, frequent, and unrestricted sexual activities (Stearns, 1977).

2.1.3. Results

2.1.3.1. Descriptive statistics and scale score reliabilities. Means and standard deviations of Study 1 variables are reported for the entire sample and for men and women separately in Table 1, as are Cronbach's alpha coefficients. Cronbach's alphas for all study variables were higher than .70 for all study variables except SD3 Machiavellianism and Narcissism, which hovered around .60, Big Five Openness to Experience (.68), and Unrestricted sexual behavior (.68). Because of low internal consistency on these variables, caution will be taken in interpreting results.

2.1.3.2. Canonical correlational analyses: general findings. Canonical correlation analyses (CCAs) were conducted using the MANOVA syntax in SPSS 20 to test all of the proposed predictors of the core of the Dark Triad. Table 2 gives summary information for the significance of all tested models.

In the first analysis, Big Five personality factors were used to predict the three Dark Triad subscales (Narcissism, Machiavellianism, and Psychopathy). The overall CCA was significant, $F(15,955.56) = 15.79$, $p < .001$, yielding a λ of .54, meaning that 46% of the variance in the Dark Triad variables was accounted for by the Big Five. As expected, Big Five Agreeableness was the strongest predictor in this analysis.

Our second model tested whether Baron-Cohen's (2011) suggestion of zero-empathy would account for the overlap in the Dark Triad variables, using the Callous Affect subscale (from the SRP) as a proxy for lack of empathy. As expected, Callous Affect was a significant predictor, $F(3,350) = 69.61$, $p < .001$, and accounted for 37% of the variance in the Dark Triad variables.

In our model for a fast life history strategy, we included unrestricted sexual behavior, lack of romantic sexual behavior (both indicating selfish and short term mating strategies), and the Interpersonal Manipulation subscale of the SRP-III. The overall CCA was significant, $\lambda = .66$; $F(9,847.09) = 17.85$, $p < .001$, and r^2 effect size indicated that 44% of the variance in the triad variables was accounted for by our predictors.

The fourth model tested whether Factor 1 psychopathy traits (as measured by the Callous Affect and Interpersonal Manipulation subscales of the SRP) predicted the subscales of the Dark Triad. Again, the overall model was significant, $\lambda = .55$; $F(6,698) = 40.33$, $p < .001$, and the model accounted for 45% of the variance. It should be noted that Callous Affect was the stronger of the two subscales in this model.

The HEXACO also significantly predicted the Dark Triad variables, $\lambda = .43$; $F(18,976.29) = 18.98$, $p < .001$. Further, this model accounted for 57% of the variance.

Jones and Figuerdo (2013) suggested that while Honesty-Humility was a strong candidate for the core of the triad, it was missing callousness. Thus, we ran another analysis to directly test whether the model was significantly improved by adding the Callous Affect subscale from the SRP. Again, the overall model was significant, $\lambda = .37$; $F(21,1028) = 20.38$, $p < .001$, and accounted for 63% of the variance.

2.1.3.3. Comparing the models. All models were directly compared to the HEXACO model by examining the difference between the r^2 effect sizes generated by each analysis. According to z-tests,

the HEXACO model significantly outperformed all of the other models (z-test values are given in Table 3). We conducted another z-test to determine whether the HEXACO plus Callous Affect model was an improvement over the HEXACO alone, and found that the increase in r^2 effect size was nonsignificant, $z = -1.3$, $p = .19$. Parsimony therefore suggests that adding callousness does not improve the fit of the HEXACO to the core of the Dark Triad.

Because the HEXACO model performed better than the other models and was not improved by the addition of Callous Affect, we further interpreted the HEXACO model.

Three canonical functions were produced with squared canonical correlations of .39, .24, and .08 for the successive functions. Each successive function explains residual variance, that is, with the variance already explained having been removed. As mentioned above, the overall model was significant (Functions 1 through 3). Functions 2 through 3 and 3 through 3 were also significant ($F(10,692) = 13.60$, $p < .001$ and $F(4,347) = 7.75$, $p < .001$, respectively). As suggested by Sherry and Henson (2005), we only interpreted the first two functions, given that the third accounted for very little of the residual variance. We present the standardized canonical function coefficients and canonical loadings (correlations between variables and canonical variates) in Table 4. Canonical loadings that were less than .25 were excluded from the table for interpretive clarity. As can be seen, the first Canonical Function is a combination of all three triad variables, with Psychopathy being the strongest contributor. In fact, 93% of the variance in Psychopathy is accounted for by this canonical variate, meaning there is very little left of Psychopathy after the first canonical function. Because all of the variables in the Dark Triad load strongly on this variate, we have labeled this as the *core*, representing the common variance in the Dark Triad. On the other side of the function, coefficients are negative for Honesty Humility, Emotionality, Agreeableness, and Conscientiousness. In other words, the *core* of the triad is negatively related to Honesty Humility, Emotionality (including empathy), Agreeableness, and Conscientiousness. Honesty Humility is the largest contributor with a correlation of $-.87$ with the canonical variate. The remaining 2 canonical functions explain the residual variance, or what is left over once the variance in the first canonical variate has been removed.

The second Canonical function is comprised of Narcissism on one side, and negative coefficients for Agreeableness and Extraversion on the other side. Essentially, in the variance left over after the core has been removed, people higher on Narcissism tend to be higher on Agreeableness and much higher on Extraversion. The final function was not interpreted as it did not account for a large amount of variance (as per Sherry & Henson, 2005).

If the core of the triad has been accounted for by the HEXACO model, the leftover variance in Psychopathy, Narcissism, and Machiavellianism should no longer be positively correlated when the first canonical variate is removed. We combined the three triad variables (using the raw Canonical Coefficients [*b*-weights]) and ran partial correlations between Narcissism, Psychopathy, and Machiavellianism while controlling for the canonical variate scores. Bivariate correlations are positive and moderate (see Table 5 for all bivariate and partial correlations). When core is removed, the correlations become negative (strikingly so in two cases). Thus, when the core (as we have labeled it) is removed, what remains of Psychopathy, Narcissism, and Machiavellianism is what makes them different from one another (see Table 5).

2.2. Study 2

In Study 1, we determined that the HEXACO model outperformed other explanations for the core of the Dark Triad, including the Big Five, zero-empathy, and fast life history strategy. Further, we found that adding callousness to the HEXACO model did not

Table 1
Means, standard deviations, sex differences, and scale score reliabilities (Cronbach's Alpha) for study variables.

	Total		Female		Male		F–M	
	Mean	SD	Mean	SD	Mean	SD	<i>d</i>	α
Study 1								
<i>Fast life history</i>								
Unrestricted	1.42	.54	1.38	.52	1.51	.57	.24*	.68
Romantic	3.52	1.27	3.5	1.34	3.58	1.12	.06	.88
<i>Psychopathy</i>								
Factor 1	2.1	.5	2.02	.48	2.27	.49	–.51**	.84
Factor 2	2.1	.48	2.03	.45	2.27	.51	–.51**	.81
SRP Total	2.09	.43	2.03	.41	2.24	.44	–.50**	.89
<i>Dark Triad</i>								
Machiavellianism	3.15	.58	3.2	.57	3.05	.59	.25*	.59
Psychopathy	2.22	.69	2.06	.69	2.57	.54	–.82**	.76
Narcissism	3	.54	2.96	.6	3.08	.39	–.24	.58
<i>HEXACO personality</i>								
Honesty–Humility	3.27	.68	3.37	.64	3.06	.69	.47**	.74
Emotionality	3.5	.74	3.73	.65	2.99	.68	1.12**	.83
Extraversion	3.33	.66	3.3	.63	3.38	.72	–.13	.79
Agreeableness	3.19	.64	3.13	.63	3.31	.66	–.28*	.77
Conscientiousness	3.53	.68	3.63	.67	3.33	.66	.45**	.82
Openness	3.32	.66	3.23	.64	3.52	.66	–.44**	.73
<i>Big Five personality</i>								
Extraversion	3.37	.77	3.39	.76	3.31	.78	.09	.85
Agreeableness	3.85	.6	3.85	.62	3.84	.55	.04	.77
Neuroticism	3.03	.79	3.21	.73	2.66	.79	.71**	.84
Openness	3.6	.55	3.54	.54	3.72	.55	–.32**	.68
Conscientiousness	3.52	.6	3.57	.58	3.41	.64	.30*	.77
Study 2								
<i>Fast life history</i>								
Agency	3.46	.63	3.33	.62	3.68	.57	–.59**	.77
Communion	4.06	.55	4.16	.51	3.88	.56	.53**	.78
STMO	2.66	1.1	2.33	.96	3.24	1.09	–.89**	.93
<i>Dark Triad</i>								
Machiavellianism	3.23	.61	3.21	.59	3.28	.64	–.11	.7
Psychopathy	2.19	.67	2	.61	2.51	.63	–.82**	.74
Narcissism	3.05	.62	2.97	.61	3.21	.62	–.39**	.73
<i>HEXACO personality</i>								
Honesty–Humility	3.29	.72	3.43	.63	3.03	.78	.56**	.76
Emotionality	3.42	.78	3.77	.62	2.82	.64	1.52**	.83
Extraversion	3.39	.71	3.38	.72	3.42	.68	–.07	.81
Agreeableness	3.06	.64	3.01	.67	3.16	.57	–.24*	.74
Conscientiousness	3.56	.66	3.68	.64	3.35	.65	.51**	.79
Openness	3.28	.71	3.18	.72	3.46	.67	–.42**	.76
<i>Big Five personality</i>								
Extraversion	3.33	.73	3.38	.72	3.25	.73	.17	.83
Agreeableness	3.81	.61	3.88	.61	3.68	.6	.33**	.79
Neuroticism	3.06	.79	3.23	.76	2.76	.77	.62**	.84
Openness	3.56	.56	3.46	.56	3.73	.54	–.49**	.73
Conscientiousness	3.52	.61	3.59	.59	3.4	.64	.33**	.79

Note. Study 1 *N* = 115 men, 240 women. Study 2 *N* = 118 men and 206 women. STMO = Short-term Mating Orientation.

* *p* < .05 (based on two-tailed *t*-tests of sex differences).

** *p* < .01 (based on two-tailed *t*-tests of sex differences).

Table 2
CCA summary for all tested models in Study 1.

Model	Wilk's λ	r^2	<i>df</i>	<i>F</i>	<i>p</i>
Big 5	.54	.46	15, 955.56	15.79	<.001
Fast life history	.66	.44	9, 847.09	17.85	<.001
Factor 1 (SRP)	.55	.45	6, 698	40.33	<.001
Zero empathy (CA)	.63	.37	3, 350	69.61	<.001
HEXACO	.43	.57	18, 976.29	18.98	<.001
HEXACO + Callous	.37	.63	21, 1028	20.38	<.001

Note. *N* = 355.

Table 3
z-Tests comparing HEXACO model with other models on r^2 (Study 1).

Model	<i>z</i>	<i>p</i> -value
Big Five	2.30	.02
Callous affect	3.70	<.001
Fast life history	2.39	.015
SRP factor 1	2.30	.02
HEXACO + Callous	–1.3	.19

Note. *N* = 355.

significantly improve the model fit. In the second study, we were able to more directly compare the fast life history strategy model with the HEXACO model in the ability to explain the core of the

Dark Triad. We were also able to examine our prediction that individuals scoring higher on the core were more likely to engage in social exploitation and fast life history strategies, which would support the idea of an alternative evolutionary life history strategy.

Table 4
CCA summary information for the HEXACO model (Study 1).

Variable	Function 1		Function 2	
	β	r	β	r
Honesty–Humility	–.65	–.87		
Emotionality	–.28	–.48		
Extraversion			–.91	–.93
Agreeableness	–.28	–.47	–.22	–.32
Conscientiousness	–.29	–.57		
Openness				
Psychopathy	.84	.97		
Narcissism	.12	.48	.12	.88
Machiavellianism	.23	.57		

Note. $N = 355$.

Table 5
Bivariate and partial correlations (with and without core removed) for Study 1 variables.

	Narcissism	Psychopathy
Machiavellianism		
r	.25	.36
r_p	–.03	–.87
Narcissism		
r		–.47
r_p		.36

Note. $N = 355$.

Further, because of low internal consistency for Big Five Openness in Study 1, we sought to replicate our findings for that model in a second sample.

2.2.1. Method

Participants and procedure. A sample of 325 undergraduate students (118 men, 207 women) from the same Canadian university as in Study 1 participated online for course credit. Participants ranged in age from 17 to 54 years ($M = 20.15$, $SD = 4.45$). Participants completed all measures online, and received course credit for their participation. Data from this study was reported in an investigation of self-sexualization in men and women (Visser, Sultani, Choma, & Pozzebon, 2014). None of the Dark Triad or HEXACO variables were reported in that study.

2.2.2. Measures

Dark Triad. The 27-item Short Dark Triad (SD3; Jones & Paulhus, 2014) was used, as described in Study 1.

Big Five Personality Model. The 44-item Big Five Inventory (BFI; John & Srivastava, 1999) was used as in Study 1.

HEXACO Personality Model. The 60-item version of the HEXACO-PI (Ashton & Lee, 2009) was used as in Study 1.

Social Exploitativeness and Fast Life History Strategy Model. First, we measured social exploitativeness by asking participants to complete the 16 agency and communion items (i.e., we did not measure unmitigated agency) from the 24-item EPAQ (Spence, Helmreich, & Stapp, 1974). The Agency subscale measures a focus on self, whereas Communion measures a focus on others. Participants indicated the degree to which each item described themselves on a five-point scale from 1 to 5 (e.g., *Not at all Independent* to *Very Independent*). Agentic social style has been likened to exploitative self-presentation (Paulhus & Trapnell, 2012), and has been linked to instrumentally driven behavior in Machiavellians (Christie & Geis, 1970) and subclinical psychopathy (Paulhus & Williams, 2002). Further, agentic social style represents striving without consideration for communal concerns (e.g., needs of others), making it a good candidate for exploitative social style.

Further, people who score high on Agency and low on Communion are more likely to exploit others (Paulhus & Trapnell, 2012).

We then combined this social exploitativeness with a measure of short-term mating effort to create an aggregate measure that combines a tendency to exploit with a tendency to engage in fast life history mating patterns. With regards to the latter, participants completed the 10 items measuring Short Term Mating Orientation (STMO; from Jackson and Kirkpatrick's (2007) Sociosexual Orientation Inventory (SOI)). STMO measures individual differences in the desire for and willingness to engage in casual (uncommitted and short-term) sexual relationships. Participants responded to items (e.g., *I can imagine myself enjoying a brief sexual encounter with someone I find very attractive*) on a 5-point scale from 1 (*strongly disagree*) to 5 (*strongly agree*). From the SOI, participants also reported the total number of sexual partners they had had as well as the number of times they had engaged in sexual intercourse with a partner on one occasion only (i.e., a "one-night-stand").

2.2.3. Results

2.2.3.1. Descriptive statistics and scale score reliabilities. Means and standard deviations of Study 2 variables are reported in total and by sex in Table 1, as are Cronbach's alpha coefficients. Again, there were sex differences in many study variables. Cronbach's alphas for all study variables were higher than .70 for all study variables.

2.2.3.2. Canonical correlational analyses. Canonical correlation analyses (CCA) were conducted on sample 2 data to test all each of the models. Table 6 gives summary information for the significance of all tested models in Study 2.

Our first analysis examined the ability of social exploitativeness and short-term mating to explain the core of the Dark Triad (Jonason et al., 2009). We included Agency, Communion, and Short Term Mating Orientation as predictors in this CCA. Because we did not measure all aspects of social exploitativeness and sexual behavior, results should again be interpreted with caution. The overall analysis was significant, $\lambda = .50$; $F(12, 841.64) = 20.95$, $p < .001$, and r^2 effect size indicated that 50% of the variance in the triad variables was accounted for by social exploitativeness and short term mating orientation.

We also re-tested the Big Five model in the second sample. The overall CCA was significant, $F(15, 875.5) = 18.15$, $p < .001$, yielding a λ of .47, meaning that 53% of the variance in the dark triad variables was accounted for by the Big 5. Again, Big Five Agreeableness was the strongest predictor in the CCA. The HEXACO also significantly predicted the Dark Triad variables, $\lambda = .25$; $F(18, 894.27) = 30.66$, $p < .001$. Further, this model accounted for 75% of the variance.

To determine whether exploitativeness and short term mating add predictive utility to the HEXACO model, we ran a supplementary analysis to directly test whether the HEXACO model was significantly improved by adding the Agency and Communion subscales of the Extended Personal Attributes Questionnaire (EPAQ; Spence et al., 1974) and STMO to the equation. Again, the overall model was significant, $\lambda = .23$; $F(30, 916.46) = 19.61$, $p < .001$, and accounted for 77% of the variance.

Table 6
CCA summary for all tested models in Study 2.

Model	Wilk's λ	r^2	df	F	p
Fast life history	.50	.50	12, 841.64	20.95	<.001
Big 5	.47	.53	15, 875.5	18.15	<.001
HEXACO	.25	.75	18, 894.27	30.66	<.001
HEXACO + FLH	.23	.77	30, 916.46	19.61	<.001

Note. $N = 324$. FLH = Fast Life History.

2.2.3.3. *Comparing the models.* As in Study 1, the HEXACO model outperformed the other models. We tested the difference between the r^2 effect sizes generated by each analysis, and the HEXACO model was still significantly different from the other three models (z -test values are given in Table 7.). We conducted another z -test to determine whether adding fast life history strategy to HEXACO was a significant improvement over the HEXACO alone (at 75%), and found that it was not a significant increase in r^2 effect size, resulting in a z value of near zero. Thus, we further interpreted the HEXACO CCA.

Three canonical functions were produced with squared canonical correlations of .53, .41, and .08 for the successive functions. As mentioned above, the overall model was significant (Functions 1 through 3). Functions 2 through 3 and 3 through 3 were also significant ($F(10,634) = 22.69, p < .001$ and $F(4,318) = 6.59, p < .001$, respectively). We present the standardized canonical function coefficients and canonical loadings (correlations between variables and canonical variates) in Table 8. Canonical loadings that were less than .25 were excluded from the table for interpretive clarity. As can be seen, the first Canonical Function is a combination of all three triad variables. As in Study 1, we interpreted this to be the core of the Dark Triad. On the other side of the function, coefficients are negative for Honesty Humility, Emotionality, Agreeableness, and Conscientiousness, and positive for Extraversion. In other words, the core of the triad is explained by scores on the HEXACO subscales, except for Openness. The only difference observed from Study 1 was that Extraversion is now included in the prediction of the core. Honesty–Humility was, again, the largest contributor with a correlation of $-.86$ with the canonical variate. The remaining 2 canonical functions explain the residual variance, or what is left over once the variance in the first canonical variate has been removed.

The second Canonical function appears to differentiate between Psychopathy and Narcissism, based on Agreeableness, Conscientiousness, and Extraversion scores. Essentially, in the variance left over after the first function is accounted for, people high on Narcissism and low on Psychopathy tend to score higher on Extraversion, Agreeableness, and Conscientiousness.

If the core of the triad has been accounted for by the HEXACO model, the leftover variance in Psychopathy, Narcissism, and Machiavellianism should no longer be positively correlated when the first canonical variate is removed. We combined the three variables (using the raw Canonical Coefficients) and ran partial correlations between Narcissism, Psychopathy, and Machiavellianism while controlling for the canonical variate scores. Bivariate correlations are positive and moderate (see Table 9 for all bivariate and partial correlations). When the canonical variate scores are accounted for, the correlations become negative.

Our final prediction was that individuals who scored high on the “core” would be following a particular life strategy. Namely, they would be socially exploitative and would be more likely to utilize a short term mating strategy. As expected, people scoring higher on the core (calculated from the b -coefficients of the first canonical variate for the HEXACO model) were more socially exploitative and engaged in more short term mating effort. Socially, they were more likely to score high on social agency (r

Table 7
 z -Tests comparing HEXACO model with other models on r^2 (Study 2).

Model	z	p -value
Fast life history	5.65	<.001
Big 5	5.12	<.001
HEXACO + Exploit	0.54	.59

Note. $N = 324$.

Table 8
CCA summary information for the HEXACO model (Study 2).

Variable	Function 1		Function 2	
	β	r	β	r
Honesty–Humility	–.67	–.86		
Emotionality	–.37	–.49		
Extraversion	.35	.36	.80	.87
Agreeableness	–.29	–.28	.13	.26
Conscientiousness	–.15	–.29	.31	.53
Openness				
Psychopathy	.57	.81	–.70	–.52
Narcissism	.51	.75	.92	.66
Machiavellianism	.25	.64		

Note. $N = 324$.

Table 9
Bivariate and partial correlations from Study 2 (with and without core removed).

	Narcissism	Psychopathy
Machiavellianism		
r	.33	.40
r_p	–.30	–.27
Narcissism		
r		.29
r_p		–.84

Notes. $N = 324$.

(320) = .41, $p < .001$), and lower on communion/altruism (r (320) = $-.21, p < .001$). In terms of short term mating, they were more likely to have a short term mating orientation (r (320) = .45, $p < .001$). These findings suggest that the core does represent a life history strategy that is best captured by the HEXACO.

3. Discussion

Our two studies represent the first empirical comparison of all the major theories explaining the core of the Dark Triad, a cluster of traits that fits the English definition of evil by “causing harm or injury to someone”. Our data supports all of the models that could account for the overlap between Narcissism, Machiavellianism, and Psychopathy, including Big Five Agreeableness (Jakobwitz & Egan, 2006; Paulhus & Williams, 2002), callousness (Jones & Paulhus, 2010), a fast and exploitative life history strategy (Jonason et al., 2012), Factor 1 of psychopathy (Jones & Figuerdo, 2013), and the HEXACO model of personality (Lee & Ashton, 2005). Thus, our data validates the contributions of these theories to the literature by confirming their statistical value as predictors of the Dark Triad.

However, using Canonical Correlation Analyses (CCAs), we determined that the percentage of variance in the Dark Triad accounted for by the HEXACO model was statistically significantly larger than all of the competing models. Further, as expected, Honesty–Humility was the subscale with the largest loading on the first canonical variate. Our results confirm that the HEXACO model may not only be the most theoretically parsimonious model, it may also best account for the empirical overlap between the constructs that represent the core of the Dark Triad.

In a supplementary analysis, we tested whether adding callousness would be an improvement over the HEXACO alone. As predicted, while the model did improve, this improvement was not statistically significant. Thus, while Jones and Figuerdo (2013) suggested that the Honesty–Humility model could benefit from the addition of callousness, our data suggests that this does not represent a statistically parsimonious solution. This finding is

unsurprising given that lack of concern for others and empathy are both directly measured by the Honesty–Humility component of the HEXACO, leaving little further variance to be accounted for (Lee & Ashton, 2005). We therefore feel confident in recommending the HEXACO as the measurement tool of choice for understanding the core of the Dark Triad in particular, and the psychological concept of “evil” in general.

One of the suggested models tested above was that the commonality in the Dark Triad is a shared life history strategy, namely one involving the exploitation of others and short term mating effort (Jonason et al., 2012). While this model did not perform as well as the HEXACO in predicting the core, and did not add significantly when included with the HEXACO model, it was a strong model, explaining 63% of the variance. We suggest that some people with who score high on the core of the Triad are well-suited to an exploitative life history strategy, as suggested by (Lee & Ashton, 2012). This assertion was supported by our data, in that people scoring higher on the core were more likely to engage in short-term mating, use social exploitation, and were less likely to behave in an altruistic manner. However, the results from our second study suggest that there is not always a link between low Conscientiousness and the Dark Triad (specifically Narcissism, and possibly Machiavellianism). This suggests that not all types of Dark Triad may be associated with a short-term, impulsive “r” life history strategy. Indeed, one can think of many cases of harm-doing that are motivated by long-term, careful, strategic personality types (e.g., passing up short-term exploitative opportunities to build enough trust to make a larger long-term exploitation). Thus, our data suggest that while a fast, exploitative life history strategy might very well explain some aspects of the Dark Triad (e.g., Psychopathy), it might not as accurately account for other facets of the Dark Triad (e.g., Narcissism).

However, it is worth noting again that life history theory is primarily a mid-level biological explanation for explaining energy/resource allocation across the lifespan (Figueredo et al., 2006; Jonason et al., 2012). This present study’s demonstrated links between personality and behavior highlights the difference between a theory based behavioral predictions (e.g., life history theory) and a theory based personality trait predictions (e.g., HEXACO). Life history theory focuses on explaining the adaptiveness of a suite of behaviors over the lifespan of an individual in response to different environments (Stearns, 1977). Personality theory focuses on explaining the behaviors of an individual across different environmental contexts (Lee & Ashton, 2012).

Thus, while the HEXACO was the better predictor, we tend to view the two as compatible, rather than competitive, explanations of the data at two different levels. In particular, the link between the HEXACO model and temperament (Farrell, Brooks, Dane, Marini, & Volk, 2014) suggests a plausible developmental sequence for the expression of evolved personality traits across the lifespan. The fact that each HEXACO trait is known to have significant and unique clusters of heritability (Lewis & Bates, 2014) only adds to this explanation. Rather than directly competing with life history theory, this offers a more proximate explanation of the Dark Triad that is compatible with a life history explanation of the Dark Triad that focuses on a broader level (i.e., lifespan) of explanation. Indeed when all the evidence is combined, it appears that with respect to the core of the Dark Triad, we now know what traits are involved (the six HEXACO traits), their genetic plausibility (unique heritability), their developmental origins (relationship to temperament), their behavioral outcomes (adaptive behaviors), and their expression over the course of the lifespan (life history theory). Taken together, these explanations offer a complete adaptive, developmental, and ecological framework for explaining the presence of “evil” in some individuals’ traits and behaviors. Individuals are born with different predispositions towards certain levels of

HEXACO traits (Lewis & Bates, 2014). These predispositions are modified by environmental cues and events (James & Ellis, 2013), resulting in an adult set of personality traits (i.e., the Dark Triad) that is expressed as antisocial behavior in an effort to maximize an individual’s evolutionary fitness within a given environmental context (Jonason et al., 2010). This is a highly plausible sequence of events that has been offered to explain similar antisocial behavior, such as bullying (Book, Volk, & Hosker, 2012; Ellis et al., 2012; Volk, Camilleri, Dane, & Marini, 2012).

It would therefore be very interesting to study the developmental trajectories of “dark” HEXACO traits to determine whether the core of the Dark Triad shares with other antisocial behaviors common developmental risk factors such as: poor parenting, paternal absenteeism, and high-risk environments (Ellis et al., 2012). These environmental influences may be responsible for triggering and/or promoting those heritable HEXACO traits which are related to the core of the Dark Triad, and may help determine when/what kind of environmental events are likely to trigger the development and expression of “evil” traits. This could also help tease apart how flexible personality responses are to initial life conditions versus later life conditions (e.g., the critical periods a major component of most life history theories; Stearns, 1977).

One could also examine the simpler question of how adaptive actual levels of the Dark Triad (or the underlying HEXACO traits) are in different environments. In other words, instead of asking how “evil” develops over the lifespan, one could examine what environmental factors reward its expression in adult individuals. Recall that the essence of Honesty–Humility is a willingness to exploit others that could be advantageous in some circumstances (e.g., ruthless business practices) and disadvantageous in others (e.g., getting caught for investing fraud). This explains not only the origins of the trait, but also the reason that there is a normal distribution of the trait in most populations (Lee & Ashton, 2012). For some individuals, in some circumstances (e.g., short-term interactions), low levels of Honesty–Humility may be adaptive, whereas for other individuals and/or circumstances (e.g., the presence of a Hobbesian Leviathan; Pinker, 2011), those same low levels of Honesty–Humility may not be adaptive. This could help inform behavioral interventions aimed at reducing antisocial behavior (e.g., encouraging Narcissists to focus on a longer time horizon or recognizing that Psychopaths may be most tempted to cheat in anonymous, short-term personal interactions).

4. Limitations

The present set of studies was the first direct comparison of the five models that have been proposed to account for the core of the Dark Triad, and the results are compelling. However, a number of limitations need to be addressed. First, our samples were comprised of undergraduate students, and thus, the generalizability of such a sample is limited. For example, participant age (and likely numerous other characteristics) would not be representative of the general population. Further, it will be important to replicate these findings in a forensic sample, where the incidence of psychopathic and narcissistic traits would necessarily be higher.

In Study 1, there were some variables that had low internal consistencies (Narcissism, Machiavellianism, and Big Five Openness), which means that results should be interpreted with caution. However, the fact that we replicated some of the findings in Study 2 (specifically with the Big Five model) when the scales had acceptable levels of internal consistency, suggests that the findings in Study 1 were also valid.

Another issue relates to external validity. All of the variables utilized in these studies were self-report questionnaires. When sensitive information is asked about, there may be a tendency to

engage in socially desirable responding (Tourangeau & Yan, 2007). Future research should attempt to replicate with either behavioral measures or corroborating information (e.g., from institutional files).

While cheating is an essential part of the Dark Triad and can be considered adaptive in an evolutionary sense (Dawkins, 1976; Lee & Ashton, 2012), there is another negative, but adaptive, behavior that should be examined in future research. Dawkins (1976) describes a “warrior-hawk” strategy that is characterized by intimidation and aggression, and has been shown to be utilized by people scoring high on psychopathic traits (Book & Quinsey, 2004). Future research should examine whether this strategy is also characteristic of individuals who score high on the core of the Triad. Further, because antisociality is more prevalent in institutional samples, studies on such samples should be conducted. Finally, given the percentage of variance in psychopathy (on the Dark Triad measure) explained by the HEXACO (93%), we may want to delve into the debate on construct of psychopathy. Perhaps it is time to explore a more parsimonious personality approach to the negative traits associated with psychopathy (to supplement, but not replace, clinical measures such as the PCL-R; Hare, 2003).

Finally, while our results are compelling, a new variable has recently been added to the Dark Triad, namely sadism (Paulhus & Jones, 2014). Also, Visser, Pozzebon, and Reina-Tamayo (2014) have suggested that status-driven risk taking should be added to this growing constellation of dark personalities. The HEXACO model should be re-tested with the full complement of dark personalities, to determine whether their core is similarly predicted by the HEXACO traits. If they are, it would offer significant construct validity for the use of both the Dark Triad and the HEXACO to study antisocial behaviors.

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