Sex, Power, and Money: Prediction from the Dark Triad and Honesty–Humility

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Abstract: Data were collected from two undergraduate student samples to examine (i) the relations of the 'Dark Triad' variables (Machiavellianism, Psychopathy, and Narcissism) with the HEXACO personality dimensions, as well as (ii) the ability of the aforementioned characteristics and of the Big Five personality factors to predict outcome variables related to sex, power, and money. Results indicated that the common variance of the Dark Triad was very highly correlated with low Honesty–Humility and that the unique variance of each of the Dark Triad variables also showed theoretically meaningful relations with the other five HEXACO factors. Furthermore, the Dark Triad and Honesty–Humility were strong predictors of three domains of outcome variables—Sex (short-term mating tendencies and sexual quid pro quos), Power (Social Dominance Orientation and desire for power), and Money (conspicuous consumption and materialism)—that were not well predicted by the dimensions of the Big Five. Copyright © 2012 John Wiley & Sons, Ltd.

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INTRODUCTION

During the past decade, three personality constructs collectively known as the Dark Triad (Paulhus & Williams, 2002) have received much research attention. These three constructs—Machiavellianism, Psychopathy, and Narcissism—were conceptualized independently by different researchers, but all three involve socially aversive aspects of human personality. The present research was conducted to accomplish two primary aims. The first was to explicate the constructs that underlie measures of the Dark Triad variables. Specifically, we examined the common and unique elements of the three Dark Triad variables, by locating these characteristics in relation to the basic dimensions of personality as conceptualized in the HEXACO framework. Second, we examined the contribution of the Dark Triad and the HEXACO personality factors in predicting a variety of criterion variables related to sex, power, and money.

Dark triad personality traits

The Dark Triad constructs have been examined widely in personality, social, and clinical psychology. We describe each of them in the following sections.

Machiavellianism
Inspired by the writings of Niccolo Machiavelli, a 16th-century Italian political theorist, Christie and Geis (1970) coined the term 'Machiavellianism' to describe a personality construct characterized by a cynical view of human nature and a deceitful and calculating interpersonal style. Christie and Geis also developed the Mach-IV scale, which has been widely used in assessing this construct.

Psychopathy
The Psychopathy construct, described in detail by Cleckley (1941), depicts a person characterized by grandiosity, lack of empathy, a glib and manipulative interpersonal style, shallow affect, and a parasitic and antisocial lifestyle. Hare and colleagues (Hare, 1991; Harpur, Hare, & Hakstian, 1989) played important roles in elaborating the construct and its measurement in both clinical and nonclinical populations. The most recent conceptualization of this construct consists of four inter-related facets representing antisocial behaviour, interpersonal manipulation, erratic lifestyle, and callous affect (Williams, Paulhus, & Hare, 2007). This four-facet conceptualization is operationalized in the Self-Report Psychopathy III (SRP-III; Paulhus, Neumann, & Hare, in press).

Narcissism
As narcissistic personality disorder has been included in the *Diagnostic and Statistical Manual for Mental Disorders* (e.g. DSM-IV, American Psychiatric Association, 1994), the construct of Narcissism has been of particular interest in the clinical and personality psychology literature. Narcissism is characterized by a sense of self-importance, exhibitionism,

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entitlement, and interpersonal exploitation. This construct has been measured successfully in subclinical samples using a variety of measures, such as the Narcissistic Personality Inventory (NPI; Raskin & Hall, 1979).

Importance of the Dark Triad personality traits

The importance of the Dark Triad variables is supported by their ability to predict a wide variety of socially important criteria. In many cases, the Dark Triad have provided considerable incremental validity beyond that of the factors of the well-known Big Five or Five-Factor Model (FFM) of personality structure. Moreover, the diversity of the criteria predicted by the Dark Triad suggests that these characteristics represent important aspects of personality. In this section, we consider several of the criteria that are associated with the Dark Triad.

All three of the Dark Triad involve a tendency to manipulate individuals in pursuit of selfish gains. It is therefore unsurprising that these traits show important correlations with measures of outright fraud, cheating, or theft. For example, Nathanson, Paulhus, and Williams (2006a) reported that the Dark Triad traits, especially Psychopathy, were correlated with an objective measure of scholastic cheating more strongly than were the Big Five factors. Nathanson, Paulhus, and Williams (2006b) also reported the same pattern of findings with respect to self-reports of criminal activities, such as shoplifting.

The behaviours predicted by the Dark Triad go much beyond theft and fraud, however. For example, Jonason, Li, Webster, and Schmitt (2009) reported that undergraduate students with high levels of the Dark Triad variables (especially male students) were more inclined to pursue short-term mating strategies than were students with lower levels. Jonason and Kavanagh (2010) also found that the Dark Triad variables (especially Psychopathy) were correlated more strongly with the Ludus (i.e. game playing) 'love style' than with the other five love styles identified by Hendrick and Hendrick (1986). Jonason, Li, and Buss (2010) also reported significant associations of two Dark Triad variables—Narcissism and Psychopathy—with mate poaching. Thus, the Dark Triad constructs are particularly important in predicting opportunistic sexual behaviour.

The Dark Triad have also been found to correlate with variables related to social or political ideology. Hodson, Hogg, and MacInnis (2009) examined Social Dominance Orientation (SDO; preference for social hierarchy and inequality) and Right-Wing Authoritarianism (RWA; obedience to authority and punitiveness towards nonconformists) and found that the Dark Triad variables were more strongly correlated with high SDO than were the Big Five variables. In contrast, the Dark Triad variables were unrelated to RWA. Thus, the results of Hodson et al. suggest that persons having high levels of the Dark Triad tend to favour between-group hierarchy but not necessarily within-group conformity.

As shown by the findings described earlier, the Dark Triad variables appear to have pervasive implications in domains of human life ranging from sexuality to ideology. Taken together, these findings suggest that the personality

traits captured by the Dark Triad do not merely tap a narrow region within the personality space, but instead cover a conceptually important personality region that is related to a broad array of social outcomes. It is therefore important to examine more closely what is being measured by these three constructs. In the following section, we suggest that both the common and unique aspects of the Dark Triad constructs can be described effectively by the six factors of the HEXACO model of personality structure. One of the purposes of the present research is to delineate the Dark Triad within this framework.

What is measured by the Dark Triad?

As can be seen in the descriptions of Machiavellianism, Narcissism, and Psychopathy, there are several notable common features among these three variables. All of them include the tendency to deceive, manipulate, and exploit others for the pursuit of selfish gains. Within the HEXACO model, these tendencies define the negative pole of the Honesty–Humility factor (Ashton & Lee, 2007; Lee & Ashton, 2005). Therefore, we hypothesize that Honesty–Humility in the HEXACO model will show a strong negative correlation with the common factor derived from the Dark Triad constructs.

Although the common characteristics of the Dark Triad constructs are highly salient, each of those three constructs has unique characteristics that distinguish it from the others. In fact, the somewhat modest correlations among measures of the Dark Triad (e.g. ranging from .25 to .50 in Paulhus & Williams, 2002) suggest that each of these contains a substantial amount of specific variance. We delineate these unique characteristics in the succeeding texts in terms of their conceptual links with the major personality dimensions of the HEXACO model.

Machiavellianism

Some studies examining the factor structure of the Mach-IV (e.g. Hunter, Gerbing, & Boster, 1982) have shown that the Mach-IV scale captures some content involving suspicious versus trusting views of human nature. Such content is very similar to that of the Trust scale in the NEO-PI-R Agreeableness domain, and this facet-level trait is associated mainly with the HEXACO Agreeableness factor (e.g. in the data of Ashton & Lee, 2005). Therefore, we expect that the residual variance of Machiavellianism will be negatively associated with Agreeableness.[1]

Narcissism

Compared with the other two Dark Triad variables, Narcissism contains a much stronger element of entitlement and self-importance. This aspect of Narcissism is conceptually related not only to low Honesty–Humility but also to Extraversion.

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[1]We should note that the hypothesis involving the residual of Machiavellianism was based on the content of the Mach-IV. The Machiavellianism construct has recently been revisited by several researchers who have developed their own measures of the construct (e.g. Dahling, Whitaker, & Levy, 2009; Kessler, Bandelli, Spector, Borman, Nelson, & Penney, 2010; Rauthmann & Will, 2011). Our hypotheses regarding Machiavellianism might have been different had they been framed with reference to the content of these other measures.

Furthermore, Narcissism also includes content related to leadership, assertiveness, dominance, and exhibitionism, all of which are subsumed primarily in the Extraversion factor. Therefore, we hypothesize that the Extraversion factor will capture most of the specific variance associated with Narcissism.

Psychopathy

The Psychopathy construct subsumes several characteristics that distinguish it from the other two Dark Triad variables. For example, Psychopathy as operationalized in the SRP-III includes subscales of erratic lifestyle and antisocial behaviour. Because these tendencies are likely inhibited by the self-discipline that defines the Conscientiousness factor, we expect that (low) Conscientiousness will explain part of the specific variance in Psychopathy. This suggestion is consistent with the meta-analytic correlations between Psychopathy and the Big Five factors reported by Lynam and Derefinko (2006), who found in self-report data that Psychopathy correlated −.52 with Big Five Agreeableness and also −.38 with Big Five Conscientiousness. (Note that because of differences in content between Big Five Agreeableness and HEXACO Agreeableness, the finding that Psychopathy is substantially related to Big Five Agreeableness does not necessarily suggest a similar link with HEXACO Agreeableness.)

Aspects of Psychopathy such as erratic lifestyle and antisocial behaviour are also likely facilitated by traits such as toughness and fearlessness, which are associated with the low pole of the HEXACO Emotionality factor. In addition, SRP-III Psychopathy includes the facet of callous affect, which involves insensitivity and hardheartedness. These characteristics are also associated with the low pole of HEXACO Emotionality. Given these associations, we would expect that Emotionality would be strongly correlated with the specific variance of Psychopathy. Consistent with this hypothesis, De Vries, Lee, and Ashton (2008), Gaughan, Miller, and Lynam (2012), and Visser, Ashton, and Pozzebon (2012) found correlations approaching −.50 between HEXACO Emotionality and SRP-III Psychopathy.

Predicting variables related to sex, power, and money

As described earlier, the outcome variables that have been found to be related to the Dark Triad are diverse in their scope, and many of them have also been examined in the emerging literature on the HEXACO model. We suggest that the Dark Triad and the HEXACO Honesty–Humility factor are strong influences on a wide array of variables that can roughly be classified into three familiar domains of human life: sex, power, and money. The variables in the Sex domain have already received considerable research attention with respect to their relations to the Dark Triad and to Honesty–Humility, but the variables in the other two domains have not been frequently studied with respect to these personality constructs. In what follows, we discuss the links of Honesty–Humility and the Dark Triad with some of the more salient variables within each of these domains.

Sex

One of the early studies showing the predictive usefulness of the HEXACO Honesty–Humility factor involved the construct of Likelihood to Sexually Harass (LSH; Pryor, 1987), which is measured by a scale assessing male respondents' expressed willingness, in a series of hypothetical scenarios, to engage in 'quid pro quo' sexual harassment by extracting sexual favours from a female subordinate. Lee, Gizzarone, and Ashton (2003) found that both self-reports and peer reports of Honesty–Humility were strongly negatively correlated with LSH, showing stronger relations with LSH than did any of the Big Five factors.

Later studies examined Honesty–Humility in relation to fidelity or infidelity in romantic relationships. Bourdage, Lee, Ashton, and Perry (2007) reported that Honesty–Humility was related to the Relationship Exclusivity scale of the 'Sexy Seven' variables (Schmitt & Buss, 2000) and to (restricted) Sociosexual Orientation (i.e. emotional commitment as a prerequisite for sexual activity; Gangestad & Simpson, 1990). A similar finding was reported by Ashton and Lee (2008) with respect to the latter variable. Subsequent to these investigations, studies adopting the Dark Triad variables have reported similar relations, with the Dark Triad variables being correlated positively with short-term mating strategies (Jonason et al., 2009), game-playing love style (i.e. treating romantic relationships as a sport; Jonason & Kavanagh, 2010), and mate poaching (Jonason, Li, & Buss, 2010).

Power

The defining content of low Honesty–Humility and of the Dark Triad suggests strong links with the desire for power. Relatively few studies have examined these relations empirically, but the existing data are consistent with these conceptual links. SDO, a variable assessing the preference for social hierarchy and inequality, has been shown to correlate positively with the Dark Triad (Hodson et al., 2009) and negatively with Honesty–Humility (Lee, Ashton, Ogunfowora, Bourdage, & Shin, 2010; Sibley, Harding, Perry, Asbrock, & Duckitt, 2010). Given that persons with high levels of SDO prefer a society in which some groups have higher status and greater power than do other groups, we suggest that they are also more likely to have, at an individual level, a strong desire for power over other persons. Consistent with this suggestion are the results of the study of Altemeyer (2006), who found that university students high in SDO had a stronger desire to be a powerful person at the age of 40 years than did those low in SDO. Taken together, the aforementioned results suggest that low Honesty–Humility and high levels of the Dark Triad variables would be associated with the desire for power.

Money

Along with the drive to attain power, a strong motivation to be very rich is likely to characterize people who are low in Honesty–Humility and high in the Dark Triad. Some studies have already found that persons low in Honesty–Humility were more likely to make unethical business decisions (Ashton & Lee, 2008; Lee, Ashton, Morrison, Cordery, & Dunlop, 2008), to take major physical risks for the attainment of personal financial gains (Ashton, Lee, Pozzebon, Visser, &

Worth, 2010), or to adopt selfish behaviours in economic experiments such as the dictator game, the ultimatum game, or other public goods games (Hilbig & Zettler, 2009; Hilbig, Zettler, & Heydasch, 2012; Perugini, Tan, & Zizzo, in press).

Persons who are low in Honesty–Humility and high in the Dark Triad are also likely to be characterized by their patterns of spending. In particular, expenditures on costly luxury items may reflect a general self-centredness as well as a desire to impress others with one's success. For example, by purchasing lavish goods with little practical value, one can signal to others that one's wealth is abundant enough that one can afford to waste some of it. Veblen (1899) famously coined the term 'conspicuous consumption' to describe such costly public displays. Few studies have examined variables representing conspicuous consumption or costly display in relation to personality characteristics. However, one such investigation (Ashton & Lee, 2008) examined materialism in the context of the HEXACO model. In that self-report study, the strongest correlate of materialism was Honesty–Humility, which showed correlations in the −.50s.

Present study

We selected several variables representing each of the three domains described earlier as criteria to be predicted using self-reports and observer reports of the HEXACO personality dimensions and the Dark Triad. We also used self-reports and observer reports on the Big Five personality dimensions as additional predictors, given that the Dark Triad have been identified as capturing some personality variance outside this structural model (e.g. Paulhus & Williams, 2002). We hypothesize that Honesty–Humility and the composite measure of the Dark Triad will show strong correlations with the Sex, Power, and Money criterion variables. In addition, we expect that the Dark Triad variables will increase significantly the prediction of the criterion variables beyond the level achieved by the Big Five alone. Furthermore, on the basis of the argument that much of the common variance in the Dark Triad is captured by the Honesty–Humility dimension, we expect that the Dark Triad and the Honesty–Humility factor will add similar incremental predictive validity beyond that of the Big Five. In addition, we will also compare the predictive validity of the HEXACO model with that of a 'Big Five-plus-Dark Triad' model. Considering that the other five factors in the HEXACO model also incorporate some variance that is not accommodated within the Big Five model, we also explored the possibility that the HEXACO would outpredict a Big Five-plus-Dark Triad model for at least some of the criteria.

Before leaving this section, let us briefly outline the intended contributions of the present research. First, although previous research has shown that Honesty–Humility correlates rather strongly with each of the Dark Triad variables, there has been no direct demonstration that it is the *common characteristic* of the Dark Triad that is responsible for the strong correlations observed with Honesty–Humility. In the present research, we first isolated the common factor of the Dark Triad and investigated the extent to which it is saturated with the Honesty–Humility factor. Second, we

examined the personality correlates of the residuals of the Dark Triad not explained by the common factor. This analysis shows how the Dark Triad differ from each other by identifying the personality traits that are uniquely associated with each of the three variables. Such analyses have not yet been conducted in previous studies.

Third, the Dark Triad have recently received considerable research attention as personality variables that add substantial predictive validity beyond that of the Big Five factors. As described in the earlier section of the Introduction, the Dark Triad variables have often been measured along with the Big Five to augment the validity of the latter in predicting some relevant criterion variables. But given the existence of the HEXACO model of personality—a model whose dimensions correspond to the space of the Big Five plus the common core of the Dark Triad—it might not be necessary for researchers to use an *ad hoc* 'Big Five-plus-Dark Triad' variable set. The present research, which examines a broad range of relevant criterion variables, can provide some evidence on this issue.

To address the aforementioned research questions, we collected data from two samples of college students, involving self-reports and peer reports of personality and self-reports of the outcome variables. The HEXACO-PI-R (Lee & Ashton, 2004) was used to measure the six HEXACO factors for the both samples, but two alternative measures were used to assess the Dark Triad and the Big Five for each sample. Specifically, for Sample 1 ($N = 232$), we included the Short Dark Triad (SD3: Paulhus & Jones, 2011) and the Big Five Inventory (BFI; John & Srivastava, 1999), and for Sample 2 ($N = 200$), we included the Dirty Dozen (Jonason & Webster, 2010) and the NEO Five-Factor Inventory (NEO-FFI; Costa & McCrae, 1992). Therefore, the results of the present research can provide further psychometric evaluation of the two recently developed measures of the Dark Triad. Also, by using the BFI and NEO-FFI, the present research can examine both the classic Big Five model (Goldberg, 1990) and the FFM (Costa & McCrae, 1992) in terms of their ability to predict variables related to sex, power, and money.

METHOD

Participants and procedure

We recruited pairs of closely acquainted undergraduate students who had known each other for at least one year. Each pair consisted of an initial volunteer who was asked to bring a well-acquainted person to participate in the study. Participants who were psychology students received course credits, and other participants received $10 per hour. Both participants of each dyad provided self-reports and peer reports of personality and self-reports of the outcome variables. Data collection sessions were conducted in groups, typically involving 20 to 24 people. Participants were not allowed to discuss their responses, and members of the same dyad were separated by having them sit a desk apart or by placing a divider between them to ensure independence of responses. Owing to the sensitive nature of some questions

(e.g. sexual behaviours), we asked each participant to put the completed questionnaire in an envelope placed on the desk and to return it to the experimenter. All responses were made anonymously, and self-reports and observer reports of the questionnaires were matched using the date-of-birth information provided by the participants. The questionnaire included some other variables that are not used in the present research. Sample 1 consisted of 232 undergraduate students (71.5% women, mean age = 21 years), and Sample 2 consisted of 200 undergraduate students (67.0% women, mean age = 21 years).

Measures

All items described in this section were administered using a 5-point response scale (1 = *strongly disagree*; 5 = *strongly agree*), unless indicated otherwise. Internal consistency reliabilities (coefficient alpha) of the scales described in the later texts are shown in Tables 1, 2, and 5 to 8.

Personality

For the personality questionnaires, each participant first provided self-reports and then provided observer reports about the person who was participating in the study with him or her. The six HEXACO factors were measured with the 100-item HEXACO-PI-R (Lee & Ashton, 2004) in both Samples 1 and 2. The Big Five/FFM factors were assessed using the 44-item BFI (John & Srivastava, 1999) for Sample 1, and the 60-item NEO-FFI (Costa & McCrae, 1992) for Sample 2.

Dark Triad

In Sample 1, the Dark Triad variables were assessed by the SD3 measure (Paulhus & Jones, 2011), which consisted of 12 items for Machiavellianism, 13 items for Narcissism, and 15 items for Psychopathy.[2] Paulhus and Jones (2011) reported convergent correlations of .77, .68, and .81 of the SD3 scales with the corresponding original measures of the Dark Triad—the Mach-IV (Christie & Geis, 1970), the NPI (Raskin & Hall, 1979), and the SRP-III (Paulhus et al., in press), respectively. In Sample 2, the Dark Triad variables were assessed by the Dirty Dozen measure (Jonason & Webster, 2010). Jonason and Webster reported that the three subscales of this 12-item measure showed somewhat modest convergent correlations with the original measures mentioned earlier (*r*s = .34, .42, and .46 for Machiavellianism, Narcissism, and Psychopathy, respectively).

The items of both Dark Triad measures were modified from the first person to the third person for the peer report form. When relevant, some items were transformed using a meta-perceptual method to preserve the constructs across the self-rating and peer rating forms (Simms, Zelazny, Yam, & Gros, 2010). For example, the item, 'It's not wise

to tell your secrets' was modified to 'He/she believes that it's not wise to tell his/her secrets'.

Variables related to Sex

First, a 4-item vignette-based scale was used to measure a willingness to participate in sexual 'quid pro quos'. In each vignette, participants were asked to indicate on a 4-point scale the likelihood that he or she would provide sex in exchange for work-related rewards (e.g. a commission on a valuable contract), or provide work-related rewards in exchange for sex (Ashton & Lee, 2008). Second, Jackson and Kirkpatrick's (2007) 25-item Sociosexuality measure was used. Of the three dimensions included in this instrument, the Short-Term Mating Orientation and Sociosexual Behavior scales were used in the present analyses, as these scales involve a selfish or opportunistic approach to romantic relationships; the Long-Term Mating Orientation scale was not used in these analyses. Responses on the Short-Term Mating Orientation scale were made on a 7-point scale, and responses on the Sociosexual Behaviour scale indicated the number of sexual partners in the past five years, the expected number in the next five years, and the number of sexual partners in the past on one and only one occasion. The responses were standardized across participants and aggregated. Finally, the 7-item Ludus Love Style scale (Hendrick & Hendrick, 1986) was included to assess one's tendency to view love as a game, a sport, or a conquest.

Variables related to Money

A tendency for materialism and conspicuous consumption was measured by three scales. First, Richins and Dawson's (1992) 7-item Materialism Centrality scale assessed attitudes about the importance of possessions and acquisitions in one's life. The other two scales were constructed for the present research, and these scales were similar to those used in previous studies examining conspicuous consumption (e.g. Griskevicius, Tybur, Sundie, Cialdini, Miller and Kenrick, 2007). In one of these scales, participants were asked to indicate how they would spend an extra $100 000 on 13 items that represent either conspicuous consumption (luxury cars, high-end restaurant meals, etc.) or non-conspicuous consumption (health products, insurance, etc.). We call this scale Conspicuous Consumption—Extra Money (see Appendix A). In the other scale, we asked participants to indicate how important it is to have the newest type or brand of 12 items that represent either conspicuous consumption (sunglasses, cell phone, etc.) or non-conspicuous consumption (deodorant, cereal, etc.). We call this scale Conspicuous Consumption— New Brands (see Appendix B). For both scales, we calculated the means of the conspicuous items and of the non-conspicuous items separately. To control for the individual differences in response elevation, we obtained the final scale scores in each case by subtracting non-conspicuous scale scores from conspicuous scale scores.

Variables related to Power

Two scales measuring one's desire for power were included in the present study. From the Schwartz Value Survey

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[2] The items used for the present research were previously listed on the website http://www2.psych.ubc.ca/~dpaulhus/Paulhus_measures/. The website has more recently listed a further shortened measure of the items (dated September, 2011) comprising 28 items (10 items for Psychopathy, nine items each for Narcissism and Machiavellianism).

Table 1. Correlations among HEXACO-PI-R and SD3 variables (Sample 1)

	α (self)	M (self)	SD (self)	1	2	3	4	5	6	7	8	9	10
1. Honesty–Humility	.82	3.34	0.57	—	.07	.15*	.33**	.30**	.37**	−.72**	−.67**	−.42**	−.57**
2. Emotionality	.85	3.45	0.61	.08	—	−.06	.11	.18**	.09	−.23**	−.12	−.09	−.35**
3. Extraversion	.85	3.47	0.58	.08	−.12	—	.21**	.18**	.13	.03	—.27**	.41**	−.04
4. Agreeableness	.85	2.99	0.58	.32**	−.12	.18**	—	.06	.11	−.49**	−.48**	−.20**	−.46**
5. Conscientiousness	.84	3.58	0.56	.09	.05	.18**	−.08	—	.19**	−.33**	−.29**	−.10	−.36**
6. Openness to Experience	.80	3.37	0.58	.17*	−.03	.04	−.04	.05	—	−.26**	−.34**	−.02	−.23**
7. SD3 composite	.80	2.71	0.33	−.67**	−.31**	.05	−.32**	−.12	−.04	—	.80**	.69**	.84**
8. SD3 Machiavellianism	.75	2.78	0.52	−.57**	−.12	−.31**	−.35**	−.08	−.10	.74**	—	.27**	.56**
9. SD3 Narcissism	.69	2.89	0.44	−.38**	−.15*	.48**	−.12	.03	.07	.64**	.12	—	.38**
10. SD3 Psychopathy	.66	2.49	0.41	−.53**	−.42**	−.03	−.23**	−.21**	−.05	.83**	.47**	.34**	—
α (peer)				.88	.85	.88	.90	.90	.84	.85	.79	.76	.70
M (peer)				3.29	3.33	3.58	3.22	3.60	3.22	2.68	2.66	2.95	2.48
SD (peer)				0.64	0.57	0.58	0.65	0.63	0.61	0.37	0.54	0.47	0.44

Note: N = 232. Self-report correlations are below the diagonal; peer report correlations are above the diagonal. SD3 Composite, Short Dark Triad composite.
*p < .05.
**p < .01.

Table 2. Correlations among HEXACO-PI-R and Dirty Dozen variables (Sample 2)

	α (self)	M (self)	SD (self)	1	2	3	4	5	6	7	8	9	10
1. Honesty–Humility	.80	3.24	0.56	—	.13	−.08	.46**	.29**	.14*	−.69**	−.59**	−.55**	−.54**
2. Emotionality	.83	3.38	0.60	.13	—	−.19**	−.19**	.21**	.08	−.02	−.01	.09	−.13
3. Extraversion	.85	3.47	0.57	.14	−.13	—	.18**	.01	.15*	−.09	−.10	.07	−.20**
4. Agreeableness	.87	3.08	0.65	.43**	−.13	.35**	—	.07	.02	−.51**	−.44**	−.37**	−.43**
5. Conscientiousness	.84	3.46	0.59	.13	.04	.18*	−.02	—	.15*	−.24**	−.28**	−.07	−.23**
6. Openness to Experience	.78	3.29	0.58	.18**	−.04	.05	.02	.10	—	−.17*	−.15*	−.11	−.17*
7. D12 Composite	.79	2.42	0.56	−.58**	−.12	−.22**	−.36**	−.19**	−.09	—	.84**	.78**	.82**
8. D12 Machiavellianism	.77	2.31	0.80	−.53**	.00	−.27**	−.37**	−.24**	−.07	.79**	—	.46**	.58**
9. D12 Narcissism	.73	2.91	0.77	−.38**	−.01	.00	−.17*	−.04	−.02	.72**	.32**	—	.43**
10. D12 Psychopathy	.66	2.04	0.69	−.38**	−.27**	−.23**	−.26**	−.13	−.12	.73**	.42**	.27**	—
α (peer)				.86	.86	.86	.89	.87	.82	.86	.79	.77	.78
M (peer)				3.22	3.28	3.49	3.20	3.49	3.11	2.36	2.23	2.87	1.98
SD (peer)				0.64	0.64	0.60	0.68	0.61	0.61	0.65	0.83	0.80	0.76

Note: N = 200. Self-report correlations are below the diagonal; peer report correlations are above the diagonal. D12, Dirty Dozen.
*p < .05.
**p < .01.

(Schwartz, 1992), the 3-item Power scale was administered along with six other Schwartz Value Survey items serving as filler items. Participants were asked to indicate the importance of each of the listed values in their life using a 9-point scale (−1 = *against my values*; 7 = *extremely important*). In addition, a single item measuring one's desire for power was also administered (Altemeyer, 2006). This item asks undergraduate students to indicate 'How much power (ability to make adults do what you want) do you want to have when you are 40 years old?' on a 6-point scale whereby each anchor point has its own description (e.g. 0 = *It does not matter at all to me. If I have no power over adults when I am 40, I will not care*; 5 = *My goal is to have a very great deal of power, being one of the real 'movers and shakers' in our country*). Finally, the 16-item SDO scale (Pratto, Sidanius, Stallworth, & Malle, 1994) was included to measure one's willingness to accept social inequality and hierarchy.

RESULTS AND DISCUSSION

Delineating the Dark Triad variables within the HEXACO model

Structural equation modelling was used to examine how the common and specific variances of the Dark Triad variables were related to the HEXACO factor space. Each Dark Triad latent variable was defined by a single indicator (i.e. the corresponding scale score), and the uniqueness term of each indicator was set to the value derived from the internal consistency reliability of the scale score (i.e. the reliability was subtracted from one, and the difference was multiplied by the variance of the indicator). All six exogenous variables (i.e. the HEXACO-PI-R scales) were allowed to covary. A higher-order factor underlying the three Dark Triad variables was created and used to examine the hypothesized personality correlates of the

common Dark Triad variables. The residual terms of the Dark Triad variables (i.e. representing variance of each Dark Triad variable not accounted for by the common higher-order factor) were used to examine the hypothesized personality correlates of the specific variance of each Dark Triad variable (Figure 1). Beyond examining the hypothesized links, we also explored some other significant relationships on a *post hoc* basis using modification indices. The correlation matrices used for the SEM analyses are shown in Tables 1 and 2.

In the present research, the HEXACO scales and the two measures of the Dark Triad variables were each assessed using both self-reports and observer reports. Therefore, the SEM analysis described earlier was conducted separately for each rating source for each sample. The results of these analyses are shown in Table 3. The model described in the this section provided a reasonably good fit to data across sample and rating source. The note attached to Table 3 provides fit indices of the models.

Results from Sample 1
The common Dark Triad factor measured by the SD3 was very strongly correlated with Honesty–Humility (−.94 for self-reports and −.93 for peer reports). The hypothesis
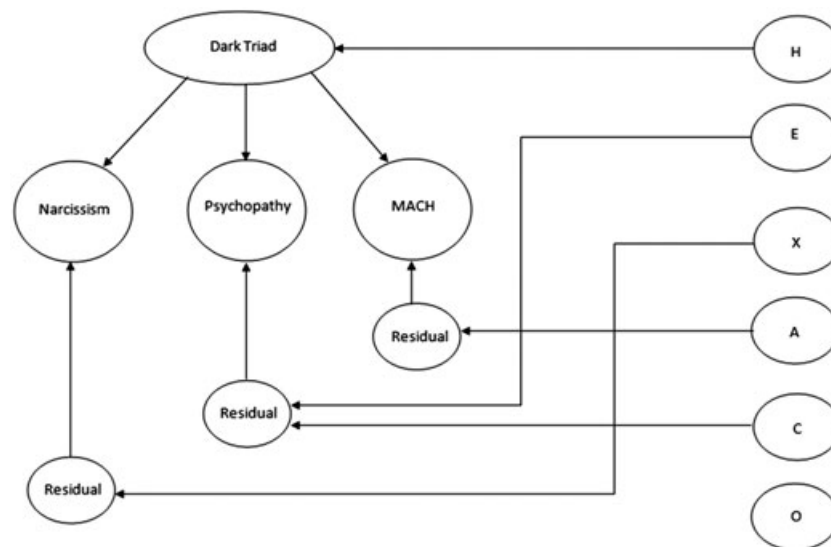

Figure 1.   Graphical summary of the hypothesized relations between the Dark Triad and HEXACO Personality dimensions. H, Honesty–Humility; E, Emotionality; X, Extraversion; A, Agreeableness; C, Conscientiousness; O, Openness to Experience; MACH, Machiavellianism.

Table 3. Standardized coefficients estimated from the structural equation models

| | Dark Triad common factor | | Residual variance after controlling for the common factor | | | | | |
| | | | Machiavellianism | | Narcissism | | Psychopathy | |
	SD3	D12	SD3	D12	SD3	D12	SD3	D12
Honesty–Humility	−.94**/−.93**	−80**/−.84**						
Emotionality							−.77**/−.63**	−.49**/−.34**
Extraversion			−.33**/−.26** (post hoc)		.72**/.68**	.16^{ns}/.25**		
Agreeableness			−.27**/−.53**	−.12^{ns}/−.14^{ns}			n.a. /−.48** (post hoc)	
Conscientiousness							−.34**/−.35**	−.03^{ns}/−.09^{ns}
Openness to Experience								

Note: Values to the left of the slash are for self-report data; values to the right of the slash are for peer report data. SD3, Short Dark Triad; D12, Dirty Dozen. Analyses involving SD3 were conducted in Sample 1 ($N = 232$), and analyses involving D12 were conducted in Sample 2 ($N = 200$).
*$p < .05$.
**$p < .01$.
Self-report data (Sample 1): $\chi^2_{(12)} = 29.25$, CFI = 0.962, RMSEA = 0.079, SRMR = 0.044.
Peer report data (Sample 1): $\chi^2_{(11)} = 24.26$, CFI = 0.977, RMSEA = 0.072, SRMR = 0.040.
Self-report data (Sample 2): $\chi^2_{(13)} = 24.60$, CFI = 0.957, RMSEA = 0.067, SRMR = 0.045.
Peer report data (Sample 2): $\chi^2_{(13)} = 40.72$, CFI = 0.934, RMSEA = 0.104, SRMR = 0.062.

linking the common characteristic of the Dark Triad to low Honesty–Humility thus received very strong support.

To investigate the specific characteristics of the Dark Triad variables, we correlated the residual terms of the Dark Triad variables with the hypothesized HEXACO factors. Recall that the residual terms are the variances of the Dark Triad variables not explained by the common higher-order factor. First, we tested the hypothesis that the specific variance of SD3 Machiavellianism is negatively linked to HEXACO Agreeableness. This hypothesis received modest support, as the correlations were −.27 for self-reports and −.53 for peer reports. Some unexpected findings were also obtained, as Extraversion also showed modest negative correlations with the specific variance of SD3 Machiavellianism (−.33 for self-report and −.26 for peer report). It is uncertain whether this result is due to sampling fluctuation, to the item content of the SD3 Machiavellianism scale, or to both.

Second, the residual terms of SD3 Narcissism showed strong positive associations with Extraversion across rating sources (.72 for self-report and .68 for peer report), thus supporting our hypothesis.

Third, the residual terms of SD3 Psychopathy showed the most complex pattern of relationships, which reflects the multi-faceted conceptualization of that construct. As hypothesized, Emotionality showed consistent negative correlations with the specific variance in SD3 Psychopathy ($r = -.77$ for self-report, −.63 for peer report). We also hypothesized that Conscientiousness should correlate with specific characteristics of Psychopathy. This hypothesis was supported, but the extent to which Conscientiousness correlated with the residual term of SD3 Psychopathy was somewhat modest in this study (around −.35). One unexpected finding was a significant negative relation of Agreeableness with the residual variance of SD3 Psychopathy, although this result was confined to peer report data ($r = -.48$). This pattern of results may be due to the less differentiated description of personality that is provided by peer reports (Ashton & Lee, 2010).

Results from Sample 2
The latent factor defined by the Dirty Dozen scales was strongly correlated with Honesty–Humility (−.80 for self-report, and −.84 for peer reports). Although these correlations are not as strong as those of Study 1 (which approached unity), they are nevertheless high enough to indicate that low Honesty–Humility is heavily implicated in the common element of the Dark Triad.

Regarding the hypotheses involving specific characteristics of each Dark Triad variable, the results obtained from Sample 2 involving the Dirty Dozen measure provided only limited support. Specifically, the residual terms for Machiavellianism and Psychopathy did not significantly correlate with their respective hypothesized personality traits, namely HEXACO Agreeableness and Conscientiousness. The relation between Extraversion and Narcissism was statistically significant in the peer rating dataset only and rather modest in size ($r = .25$). The only results providing consistent support for our hypotheses were the relations involving the residual term of Dirty Dozen Psychopathy and Emotionality. However, even these relations tended to be somewhat modest compared with

those found for the SD3 in Sample 1 (−.49 vs −.77 for self-reports, −.34 vs −.63 for peer reports).

To summarize, we found in both participant samples that the common variance of the Dark Triad variables was very highly saturated with Honesty–Humility (latent rs in −.90s for the SD3, −.80s for the Dirty Dozen). Some of the other hypotheses involving specific characteristics of the Dark Triad also received support but only when the Dark Triad was measured by the SD3. The three Dirty Dozen scales appear to lack much of the specificity that distinguishes each of the Dark Triad constructs from the other two, except for the specific features of Psychopathy that are related to low Emotionality. We return to this issue in the General Discussion section.

Predicting Sex, Power, and Money: Dark Triad and Honesty–Humility

To generate overall composite scores on the three criterion domains of sex, power, and money, we conducted principal components analyses with promax rotation of the 10 criterion variables. As shown in Table 4, in both samples, each of the variables showed its strongest loading on the designated factor (i.e. component). The three factors were only modestly intercorrelated, with the strongest correlation being .33 in Sample 1 between the Money and Power factors, and .26 in Sample 2 between the Sex and Money factors. Scores on these three factors were used for the subsequent analyses as the outcome variables.

Recall that in Sample 1, the BFI was used to assess the Big Five factors and the SD3 was used to measure the Dark Triad; in Sample 2, the NEO-FFI and the Dirty Dozen were used instead. Although each of the HEXACO dimensions was measured by 16 items in both samples, for the following analyses, we used a shorter subset of the 100-item inventory— the HEXACO-60 (Ashton & Lee, 2009)—whose scales contain 10 items each and are thus comparable in length with the scales of the BFI and of the NEO-FFI.

To examine the extent to which the Dark Triad composite[3] and Honesty–Humility would improve the prediction of the outcome variables beyond the level achieved by the Big Five, we conducted a series of multiple regression analyses. We also performed multiple regression analyses to compare the predictive validity of the six HEXACO factors with that of the combination of the Big Five plus the Dark Triad composite and with that of the combination of the Big Five plus Honesty–Humility.

Results from Sample 1
We report the results obtained from the self-report dataset first, followed by the results from the peer report dataset. The zero-order correlations of the self-report personality

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Table 4. Principal components analyses of 10 outcome variables (promax rotation)

	Sample 1			Sample 2		
	I	II	III	I	II	III
Sex						
Short-term mating orientation	**0.87**	−0.02	−0.01	**0.88**	0.06	−0.12
Short-term mating behaviour	**0.81**	0.18	−0.27	**0.75**	0.06	−0.32
Ludus love style	**0.74**	−0.05	0.07	**0.68**	−0.17	0.24
Sexual quid pro quo	**0.56**	−0.12	0.36	**0.70**	0.05	0.15
Money						
Conspicuous consumption: new brands	−0.06	**0.82**	−0.11	−0.03	**0.72**	0.17
Materialism	0.02	**0.73**	0.05	−0.05	**0.78**	0.05
Conspicuous consumption: extra money	0.18	**0.54**	0.23	0.09	**0.76**	−0.13
Power						
SDO	0.05	−0.19	**0.80**	0.45	−0.01	**0.51**
Desire for power	−0.05	0.14	**0.68**	−0.01	−0.05	**0.76**
SVS power	−0.12	0.32	**0.60**	−0.09	0.13	**0.83**
			Factor intercorrelations			
Factor I	1.00			1.00		
Factor II	0.13	1.00		0.26	1.00	
Factor III	0.29	0.33	1.00	0.10	0.12	1.00

Note: $N = 232$ for Sample 1; $N = 200$ for Sample 2. Factor loading values greater than 0.50 are in bold type.

variables with the three outcome variables are shown in Table 5. The values in parentheses in the table are those obtained after controlling for gender effects by examining within-gender standardized scores on the variables in the equation. Consistent with previous results, the best predictor of these variables among the Big Five factors was BFI Agreeableness (rs = −.19 for Sex, −.35 for Power, and −.20 for Money). As expected, however, the 40-item Dark Triad composite and the 10-item Honesty–Humility scale showed much stronger correlations with these variables than did the 9-item BFI Agreeableness scale (in the order of Sex,

Power, and Money, r = .38, .60, and .35 for the Dark Triad; r = −.34, −.59, and −.47, for Honesty–Humility).

Table 5 also provides adjusted multiple correlations (Rs) for the regression equations described earlier. Multiple correlations obtained from the equations involving the BFI were .24 for Sex, .35 for Power, and .17 for Money, and these values were increased substantially by adding the composite measure of SD3 Dark Triad or Honesty–Humility (Rs for BFI plus Dark Triad/Honesty–Humility were .37/.38 for Sex; .60/.60 for Power; .36/.46 for Money). Consistent with this hypothesis, the multiple correlations obtained by adding

Table 5. Correlations and multiple correlations of self-reports of personality variables with the three outcome variables (Sample 1)

	Sex	Power	Money
HEXACO-60			
Honesty–Humility (.76)	−.34** (−.30**)	−.59** (−.57**)	−.47** (−.47**)
Emotionality (.80)	−.30** (−.17**)	−.14* (.02)	.05 (.09)
Extraversion (.81)	−.07 (−.10)	.01 (.00)	.05 (.04)
Agreeableness (.78)	−.06 (−.07)	−.24** (−.26**)	−.22** (−.23**)
Conscientiousness (.80)	−.17** (−.14*)	.01 (.04)	−.07 (−.06)
Openness to Experience (.77)	.08 (.13)	−.24** (−.22**)	−.20** (−.20**)
BFI			
Extraversion (.87)	.05 (.05)	.06 (.07)	.01 (.01)
Agreeableness (.79)	−.19** (−.14*)	−.35** (−.32**)	−.20** (−.20**)
Conscientiousness (.83)	−.10 (−.08)	−.07 (−.06)	−.08 (−.07)
Emotional stability (.84)	.11 (.03)	.01 (−.08)	−.10 (−.12)
Openness to Experience (.81)	.09 (.10)	−.04 (−.04)	−.10 (−.11)
SD3 composite (.80)	.38** (.31**)	.60** (.57**)	.35** (.35**)
		Adjusted multiple correlations	
BFI	.24 (.15)	.35 (.32)	.17 (.19)
BFI + SD3	.37 (.28)	.60 (.57)	.36 (.36)
BFI + Honesty–Humility	.38 (.31)	.60 (.58)	.46 (.46)
HEXACO	.47 (.39)	.60 (.59)	.50 (.50)

Note: $N = 232$. Numbers in parentheses next to variable name indicate internal consistency reliabilities. Numbers in parentheses within the matrix indicate within-sex standardized values.
*$p < .05$.
**$p < .01$.

Table 6. Correlations and multiple correlations of peer reports of personality variables with the three outcome variables (Sample 1)

	Sex	Power	Money
HEXACO-60			
Honesty–Humility (.82)	−.30** (−.25**)	−.45** (−.43**)	−.30** (−.30**)
Emotionality (.81)	−.26** (−.12)	−.21** (−.08)	.10 (.15*)
Extraversion (.83)	−.06 (−.07)	−.04 (−.04)	.00 (.00)
Agreeableness (.85)	−.12 (−.10)	−.22** (−.19**)	−.11 (−.11)
Conscientiousness (.87)	−.20** (−.17*)	−.16* (−.12)	−.07 (−.06)
Openness to Experience (.83)	−.11 (−.07)	−.29** (−.26**)	−.30** (−.30**)
BFI			
Extraversion (.86)	.02 (.02)	.03 (.03)	.02 (.01)
Agreeableness (.84)	−.20** (−.15*)	−.25** (−.21**)	−.15* (−.15*)
Conscientiousness (.87)	−.19** (−.15*)	−.15* (−.10)	−.04 (−.03)
Emotional Stability (.83)	−.02 (−.06)	.06 (.03)	−.10 (−.11)
Openness to Experience (.81)	−.04 (−.02)	−.20** (−.20**)	−.22** (−.22**)
SD3 Composite (.85)	.32** (.24**)	.44** (.38**)	.25** (.24**)
	Adjusted multiple correlations		
BFI	.20 (.13)	.30 (.24)	.22 (.22)
BFI + SD3	.28 (.20)	.45 (.39)	.28 (.28)
BFI + Honesty–Humility	.29 (.23)	.46 (.43)	.30 (.30)
HEXACO	.37 (.27)	.49 (.44)	.36 (.36)

Note: N = 232. Numbers in parentheses next to variable name indicate internal consistency reliabilities. Numbers in parentheses within the matrix indicate within-sex standardized values.
*p < .05.
**p < .01.

Table 7. Correlations and multiple correlations of self-reports of personality variables with the three outcome variables (Sample 2)

	Sex	Power	Money
HEXACO-60			
Honesty–Humility (.72)	−.46** (−.42**)	−.47** (−.45**)	−.52** (−.53**)
Emotionality (.79)	−.16* (−.06)	−.07 (−.00)	.09 (.09)
Extraversion (.79)	−.12 (−.13)	.03 (.02)	−.03 (−.04)
Agreeableness (.82)	−.12 (−.15*)	−.23** (−.25**)	−.29** (−.30**)
Conscientiousness (.79)	−.23** (−.20**)	.03 (.05)	−.10 (−.10)
Openness to Experience (.76)	.05 (.04)	−.20** (−.19**)	−.10 (−.11)
NEO-FFI			
Extraversion (.76)	.09 (−.08)	−.09 (−.10)	.03 (.02)
Agreeableness (.78)	−.28** (−.26**)	−.34** (−.33**)	−.26** (−.27**)
Conscientiousness (.86)	−.24** (−.21**)	.06 (.08)	−.16* (−.17*)
Neuroticism (.85)	.06 (.10)	−.04 (−.01)	.12 (.12)
Openness to Experience (.69)	.05 (.03)	−.21** (−.22**)	−.09 (.09)
Dirty Dozen composite (.79)	.39** (.34**)	.41** (.38**)	.29** (.30**)
	Adjusted multiple correlations		
NEO-FFI	.33 (.29)	.41 (.40)	.33 (.34)
NEO-FFI + Dirty Dozen	.42 (.36)	.49 (.46)	.36 (.37)
NEO-FFI + Honesty–Humility	.48 (.43)	.52 (.50)	.53 (.54)
HEXACO	.50 (.45)	.49 (.47)	.54 (.54)

Note: N = 200. Numbers in parentheses next to variable name indicate internal consistency reliabilities. Numbers in parentheses within the matrix indicate within-sex standardized values.
*p < .05. **p < .01.

the Dark Triad composite to the Big Five were similar to those obtained by adding Honesty–Humility to the Big Five in predicting the Sex and Power factors. However, adding Honesty–Humility resulted in a larger multiple correlation (.46) than did adding the SD3 Dark Triad composite (.36) in the equation involving the Money factor. This is likely due in part to the difference in content between Honesty–Humility and the SD3, as the Honesty–Humility factor subsumes a Greed Avoidance facet scale (which assesses materialistic tendencies), whereas the SD3 lacks this element. That is, individual

differences in the tendency to engage in costly display would be expected to be better captured by Honesty–Humility than by the Dark Triad variables.

We next compared the predictive validity of the HEXACO model as a whole with that of the Big Five plus the Dark Triad (or the Big Five plus Honesty–Humility). There was no difference of practical importance between the two models in predicting the Power factor. In predicting the money factor, the equations involving Honesty–Humility (.46 for the Big Five plus Honesty–Humility, .50 for the

Table 8. Correlations and multiple correlations of peer reports of personality variables with the three outcome variables (Sample 2)

	Sex	Power	Money
HEXACO-60			
Honesty–Humility (.78)	−.31** (−.26**)	−.19** (−.16*)	−.26** (−.27**)
Emotionality (.83)	−.22** (−.03)	−.01 (.06)	−.02 (.09)
Extraversion (.79)	−.14 (−.04)	.06 (.03)	.00 (.00)
Agreeableness (.86)	−.07 (−.07)	−.22** (−.23**)	−.19** (−.19**)
Conscientiousness (.84)	−.15* (−.21**)	−.02 (.01)	.08 (−.02)
Openness to Experience (.77)	−.03 (−.06)	−.03 (−.03)	−.11 (.11)
NEO-FFI			
Extraversion (.80)	.06 (.04)	−.01 (−.03)	.04 (.04)
Agreeableness (.79)	−.18* (−.15*)	−.19* (−.17*)	−.17* (−.17*)
Conscientiousness (.84)	−.13 (−.12)	−.04 (−.03)	−.09 (−.08)
Neuroticism (.83)	−.04 (.02)	.01 (.05)	.08 (.08)
Openness to Experience (.70)	.14 (.11)	−.09 (−.11)	−.04 (−.04)
Dirty Dozen composite (.86)	.24** (.22**)	.18* (16*)	.15* (.15*)
	Adjusted multiple correlations		
NEO-FFI	.24 (.17)	.16 (.13)	.13 (.13)
NEO-FFI + Dirty Dozen	.28 (.23)	.16 (.11)	.12 (.11)
NEO-FFI + Honesty–Humility	.32 (.25)	.17 (.13)	.21 (.21)
HEXACO	.32 (.25)	.19 (.17)	.25 (.25)

Note: N = 200. Numbers in parentheses next to variable name indicate internal consistency reliabilities. Numbers in parentheses within the matrix indicate within-sex standardized values.
*p < .05.
**p < .01.

HEXACO model) outpredicted that involving the SD3 composite (.36), a finding expected from the fact that Honesty–Humility includes content related to materialism. In predicting the Sex factor, the HEXACO model outperformed the other two models (Rs = .47 vs .38 for Big Five plus Honesty–Humility, and .37 for Big Five plus SD3 composite). A similar difference was also observed for a within-gender standardized Sex factor (.39 vs .28 and .31, respectively). We suggest that these differences are largely due to the inclusion of Emotionality in the HEXACO model, which plays an important role in determining short-term mating tendencies, even within genders (Bourdage et al., 2007). To test this interpretation, we added Emotionality to the equation involving the Sex factor as predicted by the Big Five plus Honesty–Humility, and obtained a multiple correlation of .44, a higher value than that of the equation without it (.38).

The corresponding results involving the peer reports of personality are shown in Table 6. For the most part, the results obtained from the peer report data replicated those obtained from the self-report data; therefore, we will describe only a few main findings from the peer report results. First, the SD3 composite and Honesty–Humility were found to be the strongest correlates of the Sex, Power, and Money factors, substantially stronger than BFI Agreeableness. Second, the HEXACO model tended to outperform the models combining the BFI with either Honesty–Humility or the SD3 composite. (One partial exception to this pattern was that the relative advantage of Honesty–Humility over the SD3 composite in predicting the Money factor was not as prominent in the peer report data as it was in the self-report data.) In general, a very similar pattern of results was found in both self-report and peer report data, which indicates that these results were largely due to substantive relationships among the personality and outcome variables, not to source-specific common method factors.

Results from Sample 2

In Sample 2, the NEO-FFI and the Dirty Dozen were used to operationalize the FFM dimensions and the Dark Triad, respectively. The zero-order correlations of the outcome variables with self-reported personality variables are shown in Table 7 (values in parentheses are for within-sex-standardized variables). As with the results obtained from Sample 1, Honesty–Humility correlated more strongly with the Sex, Power, and Money factors (rs = .46, .47, and .52) than did the measure of Big Five/FFM Agreeableness (rs = .28, .34, and .26). The Dirty Dozen composite showed correlations that fell between Honesty–Humility and NEO-FFI Agreeableness (rs = .39, .41, and .29).

Table 7 also shows adjusted multiple correlations obtained from a series of multiple regression analyses. The NEO-FFI achieved multiple correlations of .33 for Sex, .41 for Power, and .33 for Money. Adding the Dirty Dozen composite to this equation contributed significantly to the prediction of the outcome variables, resulting in larger multiple correlations for Sex and Power (Rs = .42 and .49, respectively) and to a lesser degree for Money (R = .36). Adding Honesty–Humility to the NEO-FFI increased multiple correlations to a greater degree than did the Dirty Dozen composite in all three domains (Rs = .48 for Sex, .52 for Power, and .53 for Money). The finding that Honesty–Humility showed a substantial advantage over the Dirty Dozen composite in predicting the Money factor replicates the finding from Sample 1 for the SD3.

To compare the predictive validity of the HEXACO model with that of the FFM plus the Dirty Dozen composite (and of the FFM plus Honesty–Humility), we conducted multiple regression analyses involving the six HEXACO factors. As with the results from Sample 1, the multiple correlations achieved by the HEXACO model were larger

than those achieved by the FFM plus the Dark Triad composite with respect to the Sex and Money factors. In contrast, the multiple correlations achieved by the HEXACO model and the FFM-plus-Honesty–Humility model were very similar to each other. The latter results contrast with those obtained in Sample 1, in which the HEXACO model outperformed the BFI-plus-Honesty–Humility model. These results may suggest that the NEO-FFI captures some variance related to the outcome variables that is not assessed by the BFI.

Results obtained from the peer rating dataset are generally consistent with those involving the self-report dataset. The results of these analyses are shown in Table 8. Honesty–Humility was the strongest correlate of the Sex and Money factors, which were not as strongly related to NEO-FFI Agreeableness or to the Dirty Dozen composite. However, these three predictor variables (i.e. Honesty–Humility, NEO-FFI Agreeableness, and the Dirty Dozen composite) all correlated similarly with the Power factor in the peer report dataset. With respect to the results of multiple regression analyses, adding the Dirty Dozen composite to the NEO-FFI variables did not increase the prediction of the outcome variables except for a small increase for the Sex factor. Adding Honesty–Humility to the NEO-FFI variables, however, resulted in higher increases in multiple correlations for the Sex and Money factors. In addition, as with the results from the self-report data, the equations involving Honesty–Humility performed significantly better at predicting the Money factor than did that involving the NEO-FFI variables and the Dirty Dozen composite. Finally, consistent with the finding from the self-report dataset, the HEXACO model performed quite similarly to the NEO-FFI-plus-Honesty–Humility combination. In this peer rating dataset, the peer reported Dirty Dozen composite was found to be somewhat weak in predicting the outcome variables, but the pattern of the findings involving peer reported Honesty–Humility was generally similar to what was found in Sample 1.

Results involving the Dark Triad facets
The aforementioned results were based on the composite measure of the Dark Triad variables. In this section, we describe the predictive validity achieved when the three Dark Triad variables are entered separately into the regression equations. In Sample 1, adding the three SD3 variables to the BFI produced multiple correlations at least .05 higher than those obtained by the BFI plus the SD3 composite for Sex in the self-report and peer report data (Rs = .42 and .33, respectively), and for Money in the self-report data only (R = .33). None of these multiple correlations exceeded those obtained by the six HEXACO variables.

In Sample 2, the FFM plus the three Dirty Dozen facets showed predictive validity greater than that of the FFM plus the Dirty Dozen composite for Power in the self-report and peer report data (adjusted Rs = .54 and .28, respectively). These multiple correlations involving Power exceeded those achieved by the HEXACO variables. It is Dirty Dozen Narcissism that was entirely responsible for the increase in predictive validity, apparently because of the power-related content heavily represented in this scale (e.g. wanting special favours from others, wanting admiration/attention, and seeking status and prestige).

However, when Honesty–Humility was replaced with its four constituent facet scales, an analysis comparable with that involving the Dark Triad facets, the HEXACO equation produced adjusted multiple correlations of .59 (self-report) and .36 (peer report), exceeding considerably those achieved by the FFM plus the Dirty Dozen facets.

GENERAL DISCUSSION

Dark Triad in the HEXACO model

The first part of the present research involved the explication of the Dark Triad constructs. Specifically, we investigated the common and specific characteristics of the Dark Triad using the HEXACO model of personality. As hypothesized, the common variance of the Dark Triad was found to be very highly saturated with the Honesty–Humility factor across two samples involving two different measures of the Dark Triad. The hypothesized relations involving the unique characteristics of each of the Dark Triad variables were generally supported when the Dark Triad variables were measured by the SD3 (Paulhus & Jones, 2011). Specifically, Machiavellianism was associated with (low) HEXACO Agreeableness, Narcissism was associated with Extraversion, and Psychopathy was associated with (low) Emotionality and to a lesser degree with (low) Conscientiousness. Such a pattern of results was not fully observed in the present research when the Dark Triad were measured by the Dirty Dozen (Jonason & Webster, 2010).

The results presented earlier have some implications for the use of Dark Triad measures in empirical research. If one is interested in obtaining a composite measure of the Dark Triad to investigate its relationship with various outcome variables, then both the SD3 and Dirty Dozen might be reasonable choices as measures of the Dark Triad. But if one is interested in measuring each of the Dark Triad variables in its own right, so that unique as well as common variance is emphasized, then the SD3 is the recommended measure.

Big Five, Dark Triad, and HEXACO model

We examined whether the Dark Triad composite can compensate for the limited validity of the Big Five or FFM in predicting behaviours related to the domains of sex, power, and money. The Big Five/FFM as measured by the BFI and NEO-FFI showed rather limited ability to predict these variables, and the Dark Triad composite satisfactorily compensated for the predictive deficit of the Big Five. This finding is as expected given the recent interest in the Dark Triad as predictors of various phenomena in these domains (Hodson et al., 2009; Jonason et al., 2009).

We also compared the predictive validity of the HEXACO factors with that of an *ad hoc* Big Five-plus-Dark Triad combination. In Samples 1 and 2, we found that the six scales of the HEXACO-60 showed levels of predictive validity that sometimes exceeded those yielded by the combination of the BFI (or NEO-FFI) and the SD3 (or Dirty Dozen). These

results can, in part, be attributed to the fact that HEXACO Honesty–Humility sometimes showed higher correlations with the outcome variables than did the Dark Triad measures. The predictive validity of the Dark Triad for some criteria was enhanced when the three Dark Triad variables were used instead of their composite. However, the predictive validity obtained when the Dark Triad variables were entered separately was not generally higher than that achieved by the six HEXACO factors, and substantially lower than that achieved by the four Honesty–Humility facets and the other five HEXACO factors. As far as predictive validity with regard to Sex, Money, and Power is concerned, the results suggest that an *ad hoc* combination of the Big Five/FFM and Dark Triad would be somewhat less useful than the HEXACO model.

Beyond considerations of predictive validity alone, the HEXACO model may also be preferred over the Big Five/FFM-plus-Dark Triad combination for theoretical reasons. One such reason involves the independence of the factors: Whereas Big Five/FFM Agreeableness overlaps substantially with the Dark Triad ($r = -.52$ and $-.55$ in self-report data of Samples 1 and 2), none of the HEXACO scales are so strongly intercorrelated (the strongest correlations being $r = .32$ and .43 between Honesty–Humility and Agreeableness in the self-report data of Samples 1 and 2). Another reason involves the interpretability of the factors: HEXACO Honesty–Humility, Agreeableness, and Emotionality are suggested to represent dimensions underlying two forms of reciprocal altruism and kin altruism, respectively (see detailed discussion in Ashton & Lee, 2007); in contrast, there are no such conceptual connections among the Dark Triad, Big Five/FFM Agreeableness, and Big Five/FFM Emotional Stability.

The present research also has some implications regarding the use of different measures of the Big Five or FFM. It is well known that FFM measures (such as the NEO-FFI or NEO-PI-R; Costa & McCrae, 1992) include a broad Agreeableness factor that contains a larger portion of the variance related to Honesty–Humility than occurs in measures of 'classic' Big Five Agreeableness (Ashton & Lee, 2005; see also Miller, Gaughan, Maples, & Price, 2011). In fact, the inclusion of some Honesty–Humility content within the Agreeableness domain (via the Straightforwardness and Modesty facets in the NEO-PI-R) is a feature of FFM Agreeableness not shared by other widely used measures of Big Five Agreeableness. The NEO-FFI—the shorter version of the NEO-PI-R—used in this study also has an Agreeableness factor that contains some Honesty–Humility content but less than in the longer NEO-PI-R (e.g. Miller et al., 2011). In the present research, the NEO-FFI did not show levels of validity approaching those of the HEXACO model in predicting the Sex, Power, and Money factors. Therefore, the incorporation of some Honesty–Humility content within the Agreeableness factor is unlikely to compensate fully for the predictive deficit of the Big Five or FFM in predicting variables similar to those included in the present research.

Readers might wonder whether the advantage of the HEXACO model over the Big Five/FFM in the prediction of Sex, Power, and Money is attributable to any direct overlap of item content between predictors and criteria. In the case of the Sex criteria, the predictive advantage is clearly not attributable to any such overlap, as none of the HEXACO-PI-R items refer to sexual behaviour. The same conclusion applies in the case of the Power criteria; note that although the Modesty facet of HEXACO-PI-R Honesty–Humility contains some items referring to social status, it does not include any items describing a desire for *power* over others. With regard to the money criteria, some content overlap does exist, insofar as the fairness and greed-avoidance facets of HEXACO-PI-R Honesty–Humility do contain items referring to money and/or material goods. If a reduced Honesty–Humility scale is computed from the items of the remaining two facets (sincerity and modesty), then the predictive advantage of the HEXACO variables over the Big Five/FFM variables is substantially reduced, but not eliminated.[4] This result suggests that item content related to money and material goods is partly but not entirely responsible for the advantage of the HEXACO model over the Big Five/FFM in predicting the money criterion.

We should note that some previous studies have examined the relative validity of the Big Five/FFM and HEXACO factors in predicting some variables within the Sex and Money domains (e.g. sexual quid pro quos and materialism in Ashton & Lee, 2008). However, the present research was much broader in scope: Not only did it include a wider array of variables within those two domains (e.g. game-playing 'love styles' and conspicuous consumption) but it also extended these comparisons to the domain of power. Moreover, the present studies have provided the first joint comparison of the predictive validity of the Dark Triad, the Big Five/FFM, and the HEXACO factors.

Sex, Power, Money, and Personality

We found that the criterion variables involving money (e.g. conspicuous consumption, materialism), power (e.g. desire for power), and sex (e.g. short-term mating strategy and instrumental sexual behaviours) correlated more strongly with Honesty–Humility and the Dark Triad composite than with the other personality variables included in this study. All three outcome variables were particularly strongly correlated with Honesty–Humility. Thus, although these three criterion domains were only modestly intercorrelated, their common element appears to be low Honesty–Humility.

Why should low Honesty–Humility be the common element underlying these three domains? On the one hand, low Honesty–Humility represents the willingness to gain at the expense of others. On the other hand, the

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[4]Specifically, we replaced the 10-item Honesty-Humility scale with an 8-item scale consisting only of items from the sincerity and modesty facets (recall that a total of 16 Honesty-Humility items were administered to participants). The multiple correlations yielded by the HEXACO-PI-R with this reduced variant of Honesty-Humility in predicting the Money factor were .36 (self-reports, Study 1), .35 (peer reports, Study 1), .37 (self-reports, Study 2), and .18 (peer reports, Study 2). As indicated in Tables 5 through 8, the corresponding values obtained from the Big Five/FFM instruments were .17 (self-reports, Study 1), .22 (peer reports, Study 1), .33 (self-reports, Study 2), and .13 (peer reports, Study 2).

Money, Power, and Sex factors of this study all involve the motivation to have more resources than others (rather than being content merely to have equal resources): The Money factor represents a drive to consume more material resources than do others, the Power factor represents a drive for superior social status, and the Sex factor emphasized the motivation to have many uncommitted, short-term sexual partners.[5] Thus, through their emphasis on having more resources than do others, the Money, Power, and Sex factors have a close conceptual link with the exploitation that characterizes low Honesty–Humility.

Limitations

There are several limitations in the present research. First, the criterion variables were assessed with self-reports rather than objective measures of actual behaviours. Although we avoided the problem of common rating source variance by including peer reports of personality, it would have been useful to have included some reliable and construct valid objective criteria (cf., Hershfield, Cohen, & Thompson, 2012).

As with some studies in this field, we relied on convenience samples of psychology undergraduate students. One of the characteristics of such samples includes the imbalance in gender ratio. In the present research, about 70% of the participants were women. It may well be that the relationships of Honesty–Humility and the Dark Triad with some criterion variables (e.g. short-term mating tendencies) would differ depending on participants' gender. Owing to the relatively small absolute number of male participants in our studies, we did not pursue within-gender analyses.

In assessing the Dark Triad, we used two recently developed short instruments. These measures were developed with reference to the NPI (Raskin & Hall, 1979), the SRP-III (Paulhus et al., in press), and the Mach-IV (Christie & Geis, 1970). One might question whether the results of the current study would generalize to the original measures of the three constructs. We believe that the results involving the SD3 (Paulhus & Jones, 2011) are likely to be highly generalizable for two reasons. First, as shown by Paulhus and Jones, the SD3 scales displayed strong convergence with the original measures of the constructs. Second, the SD3 generally showed the hypothesized relationships with the HEXACO variables, even though these hypotheses were largely derived from the content of the original measures of the constructs. With regard to the Dirty Dozen, this instrument appears to tap the common core of the Dark Triad reasonably well, but it appears not to capture fully the unique features of the original Dark Triad measures. Some caution is therefore warranted regarding the generalizability of results obtained from the Dirty Dozen.

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[5]We presume that access to sexual partners can be considered as a resource, particularly among men. Consistent with this view, the correlations of Sex with Money and Power in the present research were higher among men than among women. We conjecture that this difference in correlations would be eliminated or even reversed if a Sex factor were defined by variables emphasizing the importance of money and power as criteria in selecting a mate.

CONCLUSION

The results of the present study showed that the common variance of the Dark Triad variables is nearly equivalent to low Honesty–Humility. The residual variance of each Dark Triad variable has theoretically meaningful associations with other personality dimensions. Both the Dark Triad and Honesty–Humility are strong predictors of criterion variables in the domains of sex, power, and money, which are not well predicted by the dimensions of the Big Five. The Dark Triad adds considerably to the validity of the Big Five in predicting these criteria, but the validity of the Big Five-plus-Dark Triad combination is matched or exceeded by that of the HEXACO personality factors.

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APPENDIX A
WHAT WOULD YOU DO WITH EXTRA MONEY?

Suppose that you have recently graduated from university. You have a full-time job that pays moderately well, and you have been spending money in much the same way that other people in your position typically do. You have some debts that you are currently paying off.

But now suppose that you suddenly have a lot more money: a close relative has won the lottery and has given you $100,000. Now you must decide what you will do with the money.

Please indicate your priorities for using the money that you have gained. For each of the items below, rate each of them on a scale as follows:

1 wouldn't spend any more money on this item than I did before
2
3
4
5 would spend much, much more money on this item than I did before

_____luxury car(s) (or other motor vehicles)
_____debt payments
_____jewelry
_____education (books, courses, etc.)
_____designers' clothes
_____health products
_____home electronics (big screen HD TV, home theater and audio system, etc)
_____charitable donations
_____vacations
_____insurance policies
_____apartment/condo rental (or mortgage for house)
_____savings and long-term investment
_____high-end restaurant meals, etc.

APPENDIX B
HOW IMPORTANT IS IT TO YOU THAT <u>NEWEST TYPE/BRAND</u> OF THE FOLLOWING ITEMS?
(PLEASE CIRCLE THE NUMBER)

Sunglasses:	Not important at all	1	2	3	4	5	6	7	Very important
Deodorant:	Not important at all	1	2	3	4	5	6	7	Very important
Jeans:	Not important at all	1	2	3	4	5	6	7	Very important
Toothbrush:	Not important at all	1	2	3	4	5	6	7	Very important
Cell phone:	Not important at all	1	2	3	4	5	6	7	Very important
Household Cleaners:	Not important at all	1	2	3	4	5	6	7	Very important
Cereal:	Not important at all	1	2	3	4	5	6	7	Very important
MP3 Player:	Not important at all	1	2	3	4	5	6	7	Very important
Shampoo:	Not important at all	1	2	3	4	5	6	7	Very important
Car:	Not important at all	1	2	3	4	5	6	7	Very important
Laptop Computer:	Not important at all	1	2	3	4	5	6	7	Very important
Shoes:	Not important at all	1	2	3	4	5	6	7	Very important