

# Duplicity Among the Dark Triad: Three Faces of Deceit

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Although all 3 of the Dark Triad members are predisposed to engage in exploitative interpersonal behavior, their motivations and tactics vary. Here we explore their distinctive dynamics with 5 behavioral studies of dishonesty (total  $N = 1,750$ ). All 3 traits predicted cheating on a coin-flipping task when there was little risk of being caught (Study 1). Only psychopathy predicted cheating when punishment was a serious risk (Study 2). Machiavellian individuals also cheated under high risk—but only if they were ego-depleted (Study 3). Both psychopathy and Machiavellianism predicted cheating when it required an intentional lie (Study 4). Finally, those high in narcissism showed the highest levels of self-deceptive bias (Study 5). In sum, duplicitous behavior is far from uniform across the Dark Triad members. The frequency and nature of their dishonesty is moderated by 3 contextual factors: level of risk, ego depletion, and target of deception. This evidence for distinctive forms of duplicity helps clarify differences among the Dark Triad members as well as illuminating different shades of dishonesty.

**Keywords:** cheating, Dark Triad, deception, honesty

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Concern about others' honesty is among the strongest situational influences on social behavior (Rauthmann et al., 2014), and honesty attribution is the single most influential factor in person perception (Paunonen, 2006). However, the measurement of honesty as a trait is characterized by a fractured history reaching back to Hartshorne and May (1928). After assessing diverse forms of dishonest behaviors (e.g., lying, cheating, stealing) on large samples of children, those seminal researchers dismissed the notion of a unitary trait construct. When properly interpreted, however, their data do indicate significant convergence across various forms of duplicity (Burton, 1963). Such tendencies also tend to converge at the virtuous pole (Jayawickreme, Meindl, Helzer, Furr, & Fleeson, 2014). In contemporary personality research, Ashton and Lee (2001) have been relentless in confirming this trait notion by isolating an Honesty-Humility (H-H) factor in their HEXACO model of personality. The incremental value of adding this factor in the prediction of personal integrity appears to be well supported (e.g., Lee, Ashton, Morrison, Cordery, & Dunlop, 2010; Spain, Harms, & Lebreton, 2014).

Under the broad umbrella of the H-H factor, three narrower traits—narcissism, Machiavellianism, and psychopathy—have received extensive theoretical and empirical attention. Paulhus and Williams (2002) coined the term *Dark Triad* to encourage re-

searchers to study these three traits as a constellation.<sup>1</sup> Their rationale was that only a concurrent analysis can clarify any unique contributions of the triad members to outcome variables. Many researchers have taken up that challenge and the body of research has expanded geometrically (for the most recent review, see Paulhus, 2014). Of particular interest to the current report is that, in a series of factor analyses, all three of the Dark Triad loaded on the H-H factor (Book, Visser, & Volk, 2015; Lee & Ashton, 2005; Lee et al., 2013). Given that scores on the H-H factor predict honest behavior in the workplace (Lee, Ashton, & de Vries, 2005), we were encouraged to tease apart distinctive forms of dishonesty linked with the Dark Triad members (See also Mededovic, 2012).

One handicap to Dark Triad research has been the excessive length of the original measures: They add up to a taxing 124 items! Fortunately, two brief inventories tapping all three traits have become available. First is the Dirty Dozen (DD) (Jonason & Webster, 2010), a 12-item instrument. Although a significant body of research has exploited this measure (Jonason, Webster, Schmitt, Li, & Crysel, 2012), the consequences of its brevity have raised criticism (Carter, Campbell, Muncer, & Carter, 2015; Lee et al., 2013; Miller et al., 2012; Rauthmann & Kolar, 2012). The second combination measure is the 27-item Short Dark Triad (SD3) developed by Jones and Paulhus (2014). When the two measures are compared head-to-head, the SD3 validities tend to be higher and more closely match the original Dark Triad measures (Lee et al., 2013; Maples, Lamkin, & Miller, 2014; Jones & Paulhus, 2014). To confirm this previous pattern, we used the traditional measures as well as both brief measures of the Dark Triad in several of the studies detailed below.

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<sup>1</sup> Note that the present research concerns subclinical levels of these variables (LeBreton et al., 2006) not clinical levels, where the term personality disorder applies (see Campbell & Miller, 2011).

Whether the D3 are operationalized with the traditional measures, the Dirty Dozen or Short Dark Triad, large bodies of research confirm the importance of distinguishing the three constructs<sup>2</sup>—despite their positive intercorrelations (e.g., O’Boyle, Forsyth, Banks, & McDaniel, 2012). Successful applications include such research domains as interpersonal aggression, personnel selection, forensic diagnosis, and academic misbehavior as well as sexual and romantic relationships. In all of these studies, the triad members manifest distinctive patterns of interpersonal malevolence (see Paulhus, 2014, Jones & Paulhus, 2010).

A critical point for the present paper is that previous work has linked all three Dark Triad members to a predisposition to deceive (Baughman et al., 2014; Giammarco, Atkinson, Baughman, Veselka, & Vernon, 2013; Jonason, Lyons, Baughman, & Vernon, 2015; O’Boyle et al., 2012). To date, however, only two studies on the Dark Triad have exploited behavioral measures of dishonesty (Jones, 2013, 2014a). All five studies presented below maintain the rigor and objectivity maximized by the use of behavioral outcomes.

### The Present Research

Dishonesty has long been linked to callousness, that is, lack of empathy (Davis, 1996; Brown et al., 2010; Frick, 2009; Giammarco & Vernon, 2015; Trout, 2009). Absent of concern for its effect on others, achievement striving is unmitigated and cheating behavior is unconstrained. Given our assumption that callousness is a common element of the Dark Triad (Jones & Paulhus, 2011a), all three should show a predisposition to dishonesty—at least, when repercussions are unlikely (i.e., low risk).

Under more risky conditions, however, the dynamics of cheating may play out in a different way for each Dark Triad member. Individuals with psychopathic traits have difficulty resisting an immediate reward—even when risk of punishment is high (Crysel, Crosier, & Webster, 2013; Jones, 2014b). Hence, in the studies below, we predict that the dishonesty of those with psychopathic traits will continue even under high risk conditions.

By contrast, the hallmark of those high in Machiavellianism is strategic manipulation (Christie & Geis, 1970). To exploit scholastic situations, for example, they opt for surreptitious plagiarism rather than opportunistic copying during exams (Williams, Nathanson, & Paulhus, 2010). Such strategic thinking requires cognitive resources. When depleted of these resources, individuals high in Machiavellianism may lose their strategic advantage and behave more like those high in psychopathy.

Finally, those high in narcissism have a grandiose belief in their superiority to others (Kohut, 1966). Rather than an instrumental motivation to acquire resources, their egoistic motivation requires repeated confirmation of their intellectual superiority (Campbell & Foster, 2007; Jones & Paulhus, 2011a). In short, their dishonesty is self-deceptive in nature (Paulhus et al., 2003; von Hippel & Trivers, 2011). Even when confronted with contradictory evidence, narcissistic individuals tend to exaggerate their general knowledge (Paulhus et al., 2003) and group performance (Robins & John, 1997). Psychopathic individuals also showed this tendency, but to a lesser degree (Paulhus & Williams, 2002).

To summarize these qualitative differences in dishonesty, we have laid them out in Table 1. Three distinctions loom large in the present set of studies on dishonesty: (a) instrumental versus ego-

istic motivation, (b) impulsivity versus caution, and (c) self- versus other-deception. Those broad themes were highlighted in five studies of deceptive behavior. Study 1 examined which traits predicted dishonesty when there was minimal risk of being caught. Study 2 examined which individuals would continue to cheat when punishment was a serious risk. Study 3 examined the effects of ego depletion on dishonesty. Study 4 examined who was most likely to engage in blatant misrepresentation for financial benefit. Finally, Study 5 examined which individuals would exhibit self-deception on an anonymous overclaiming task.

## Study 1: All Three Show (Low-Risk) Dishonesty

### Method

**Power analysis.** Although power analysis is challenging with novel research, we took guidance from the meta-analysis by Richard, Bond, and Stokes-Zoota (2003). Across the body of social psychology and personality research, their meta-analysis yielded a mean correlation effect size of .21. They deduced that achieving 80% power of reaching significance with that effect size would require 173 participants. To be conservative, we aimed at a substantially larger sample.

**Participants.** The collection of human subjects data was approved by the Institutional Review Board of the University of Texas – El Paso. The protocol number and title were as follows: [391743–7] *Moral Machiavellianism survey*. The same approval was used to collect data for all the studies presented in this article.

Participants were 292 adults from MTurk (51% women, *Mean age* = 32.86, *SD* = 11.78). Overall, 68% reported European Heritage, 7% African Heritage, 6% East Asian, 7% South Asian, 7% Latino, 5% other mixed ethnicities. Unless otherwise indicated, participants were compensated at a rate typical for MTurk (i.e., \$.025; see Buhrmester, Kwang, & Gosling, 2011).

**Measures.** Across all studies, personality scales were collected on Likert-type scales anchored by 1 (*strongly disagree*) and 5 (*strongly agree*). The only exception is the NPI-16 used in Study 3, which used a dichotomous response format.

**Short Dark Triad.** To assess the Dark Triad traits in an efficient fashion, we used the Short Dark Triad (SD3) inventory (Jones & Paulhus, 2014). Although recent in appearance, the distinctive construct validity of this inventory has already been supported by over 100 studies. Although not interchangeable, the SD3 tends to yield results that run parallel to those with the original Dark Triad measures (Jones & Olderbak, 2014; Jones & Paulhus, 2014). The three subscales have predicted unique patterns of interpersonal malevolence in dozens of studies: Using self-reports, those outcomes include partner aggression (Hamel, Jones, Dutton, & Graham-Kevan, 2015), racism (Jonason, 2015), bullying (Baughman et al., 2012), cyber-aggression (Pabian, De Backer, & Vandebosch, 2015), malevolent intentions (Veselka, Giammarco, & Vernon, 2014), and immorality (Jonason, Strosser, Krull, Duinefeld, & Baruffi, 2014).

A number of behavioral studies have also added to the construct validity of the SD3: These behaviors included distinctive patterns

<sup>2</sup> The distinction is even supported by behavior genetics research (Vernon, Villani, Vickers, & Harris, 2008; Veselka, Schermer, & Vernon, 2011).

Table 1  
Summary of Predictions

D3 trait	Low-risk deception	High-risk deception	Ego-depleted deception	Intentional fraud	Self deception
Machiavellianism	Yes	No	Yes	Yes	No
Psychopathy	Yes	Yes	Yes	Yes	Somewhat
Narcissism	Yes	No	No	No	Yes

of mimicry (Ashton-James & Levordashka, 2014), selfish financial behavior (Jones, 2013, 2014a; Roeser et al., 2016), and laboratory aggression (Buckels, Jones, & Paulhus, 2013). In all of these studies, the triad members, as operationalized with the SD3, manifested distinctive patterns of malevolence.

The SD3 inventory measures the Dark Triad with nine items per trait. In the present sample, the subscales showed typical means and acceptable alpha reliabilities: Machiavellianism ( $M = 3.31, SD = .60, \alpha = .74$ ); psychopathy ( $M = 2.14, SD = .70, \alpha = .81$ ); narcissism ( $M = 2.76, SD = .57, \alpha = .71$ ). Subscale intercorrelations were in the usual range: Machiavellianism with psychopathy ( $r = .54$ ); psychopathy with narcissism ( $r = .41$ ); Mach with narcissism ( $r = .27$ ).

**Dirty Dozen.** We also included a second brief inventory, namely, the so-called ‘Dirty Dozen’ (DD) (Jonason & Webster, 2010). Using only four items per subscale, the Dirty Dozen has nonetheless generated a large body of research (see Jonason, Webster, Schmitt, Li, & Crysel, 2012). The inevitable tradeoff of fidelity for efficiency is discussed by Maples et al. (2014) as well as Jonason, Li, and Czarna (2013).

In the present sample, internal consistencies for the Dirty Dozen subscales were all strong: narcissism ( $\alpha = .82$ ); Machiavellianism ( $\alpha = .78$ ), and psychopathy ( $\alpha = .76$ ). The subscale intercorrelations were as follows: Machiavellianism with narcissism ( $r = .44$ ); Machiavellianism with psychopathy ( $r = .60$ ); psychopathy with narcissism ( $r = .31$ ). More detailed descriptives on the Dirty Dozen are provided in the Supplementary Materials.

**Procedure.** Participants completed an online package of questionnaires: It comprised the SD3, DD, the Ten Item Personality Inventory (TIPI; Gosling, Rentfrow, & Swann, 2003) as well as several questions about luck and gambling. The purpose of the TIPI and gambling questions were to obfuscate the true purpose of the study, that is, to examine the link between the Dark Triad and cheating.

After completing the questionnaires, participants were sent to a new page, which had instructions in the center that read: “On the next page is a coin flipping task – if you win, you get a bonus! Unfortunately, there’s a glitch in the software, so it’s possible to flip the coin multiple times. So please only flip the coin once to be fair.” Participants then went to the next page, which had (a) choice buttons labeled “heads” and “tails”, (b) a “flip” button represented by a rotating coin and (c) a heading that read “Are you a lucky person?” This procedure was developed by Quoidbach and Chakroff (2011) in order to study dishonesty in a virtual environment.

Participants had to press “heads” or “tails” and were then asked to press the flip button. The result of the coin flip, however, was preprogrammed as follows: (a) on the first flip, it did not match participant’s choice, (b) a similar mismatch occurred on the second

flip, and (c) on the third flip, it finally matched the participant’s choice. This process allowed dishonest participants the chance to flip until they obtained the desired outcome. Our primary dependent variable was whether or not participants flipped the coin more than once in order to obtain the bonus.

**Results and Discussion**

Overall, 13% of the sample cheated. As predicted, SD3 narcissism,  $r = .21, p < .001$ , Machiavellianism,  $r = .18, p < .001$ , and psychopathy,  $r = .23, p < .001$  all had significant point-biserial correlations with dishonesty. A series of  $z$  tests provided no evidence that the three correlations were different (all  $ps > .10$ ). Note from Table 2, however, that when entered simultaneously into a logistic regression, no one trait reached a .05 significance. In other words, the three correlations with dishonesty were so similar that claiming predominance for any one of them would be arbitrary. This preliminary result suggests that the three members of the Dark Triad were equally likely to cheat in this study.

A similar but weaker pattern was found for the Dirty Dozen scales: narcissism,  $r = .19, p < .002$ , Machiavellianism,  $r = .11, p = .07$ , and psychopathy,  $r = .17, p = .004$ . Such weaker results are consistent with recent criticisms leveled against the scale (Carter et al., 2015; Jones & Paulhus, 2014; Kajonius, Persson, Rosenberg, & Garcia, 2015; Maples, Lamkin, & Miller, 2014; Miller et al., 2012). Not only do DD results tend to be weaker than SD3 results, they tend to be misaligned with the gold standard measures. Therefore, we relegate further results for the Dirty Dozen to our Supplementary Materials and will focus on the SD3 in the subsequent studies. Finally, none of the Big Five factors, as measured by the TIPI, showed any correlation with coin flip cheating ( $r$  values ranged from  $-.11$  to  $.09$ , all  $p > .06$ ). Therefore, we did not include the TIPI in any of the subsequent studies.

Table 2  
Cheating as a Function of the Dark Triad Under Low Risk in Study 1

Predictors	$r$	$r_{x,y}$	$B$	WALD	OR	95% CI	$p$
Machiavellianism	.18*	.06	.23	1.07	1.26	.81, 1.97	.301
Narcissism	.21*	.12	.37	3.16	1.45	.96, 2.19	.076
Psychopathy	.23*	.12	.41	3.15	1.50	.96, 2.34	.076

Note.  $N = 292$ . The tabled values emerged from a logistic regression. \*  $p < .05$ , two-tailed.

## Study 2: Under High-Risk, Only Psychopathy Predicts Dishonesty

### Method

**Power analysis.** Instead of the meta-analysis (Richard et al., 2003), we used the effect sizes from Study 1 to calculate the sample needs of Study 2. The lowest simultaneous *OR* obtained in the Binary Logistic Regression from Study 1 was for Machiavellianism ( $OR = 1.47$ ). Using this effect size, a power analysis suggested 340 participants were needed to achieve 80% power. Because Study 2 also examined an interaction, we collected an even larger sample of 441 participants. Note that we sampled 545 to achieve this final sample size after exclusion based on attention checks.

**Overview.** Study 2 used a similar coin-flip paradigm but varied the risk of getting caught. Based on the previous literature, key differences among the Dark Triad should emerge under high-risk conditions. On MTurk, the most serious risk to workers is having their efforts “rejected”: They are fully aware that complaints about bad work are documented as a bad reputation and may limit their ability to find future work on MTurk (see Paolacci & Chandler, 2014).

Perceived risk of getting caught was manipulated by randomly assigning participants to one of two warning conditions. As in Study 1, most participants under low risk should be tempted to coin-flip more than once. Under high risk, however, only individuals high in psychopathy should persist in cheating—because of their inability to delay gratification (Jonason, 2015; Jones, 2014a; Jones & Paulhus, 2011b).

An interaction should emerge such that individuals high in Machiavellianism will cheat at low levels but not at high levels of risk. This prediction was based on previous literature showing the strategic flexibility of Machiavellians (Bereczkei et al., 2013; Christie & Geis, 1970; Esperger & Bereczkei, 2012; Jones & Paulhus, 2011a). For psychopathy, no such interaction should emerge: Individuals high in psychopathy should be just as likely to cheat in high and low risk conditions (see Jones, 2014b). We made no strong predictions for narcissism in the high risk condition, but along with most participants, individuals high in narcissism should cheat in the low risk condition.

**Participants.** Participants were 545 adults solicited from Amazon’s MTurk. A total of 104 participants were removed for failing attention checks or for taking the survey twice. Note that these rates of attention check failure are within the typical parameters for MTurk samples (Deetlefs, Chylinski, & Ortmann, 2015). The final sample was 441 workers (46% women, *Mean age* = 34.52, *SD* = 11.18; 77% European Heritage, 4% African Heritage, 7% East Asian, 6% Latino(a), 6% other).

**Dark Triad.** As in Study 1, we used the *Short Dark Triad* or SD3 (Jones & Paulhus, 2014). The SD3 had significant (all  $p < .001$ ) and moderate size intercorrelations: Machiavellianism with psychopathy = .58, Machiavellianism with narcissism = .37, and narcissism with psychopathy = .45. Means and internal consistencies were similar to those in Study 1: psychopathy ( $M = 2.11$ ,  $SD = .64$ ,  $\alpha = .79$ ); Machiavellianism ( $M = 3.09$ ,  $SD = .68$ ,  $\alpha = .82$ ); narcissism ( $M = 2.63$ ,  $SD = .64$ ,  $\alpha = .77$ ).

**Measures and procedure.** Participants first completed the SD3 and were randomly assigned to one of two messages: The low

risk message was identical to that of Study 1. The high risk message read, “We will be conducting random checks to see if anyone flipped the coin more than once. Those who do will have their work rejected.” In both messages, however, participants were alerted to the computer glitch and the fact that the coin could be flipped more than once.

### Results

The warning manipulation was successful, with a higher percentage of participants cheating (i.e., performing more than one coin-flip) in the low risk condition (17%) than in the high risk condition (10%),  $\chi^2 = 5.09$ ,  $p = .02$ . We then examined cheating as a function of condition and the Dark Triad, as well as the three Dark Triad  $\times$  condition interactions in a binary logistic regression. As displayed in Table 3, results indicated a main effect for psychopathy, and an interaction between Machiavellianism and condition ( $p < .05$ , two-tailed).

We went on to examine the point-biserial correlations of cheating within conditions. As expected, both Machiavellianism,  $r = .21$ ,  $p = .002$  and psychopathy,  $r = .17$ ,  $p = .01$  were associated with cheating in the low risk condition. Unexpectedly, narcissism failed to reach significance. As predicted, only psychopathy,  $r = .15$ ,  $p = .03$  was significant in the high risk condition; Machiavellianism,  $r = .05$ ,  $p = .46$ , and narcissism,  $r = .10$ ,  $p = .16$  were not.

We went further to conduct logistic regressions within condition. The results indicated that under low risk, Machiavellianism and psychopathy were the best predictors of cheating (Machiavellianism:  $B = .87$ ,  $Wald = 5.91$ ,  $OR = 2.39$ , 95% CI for  $OR = 1.18, 4.81$ ,  $p = .015$ ; narcissism:  $B = -.68$ ,  $Wald = 3.50$ ,  $OR = 0.51$ , 95% CI for  $OR = 0.25, 1.03$ ,  $p = .506$ ; psychopathy:  $B = .67$ ,  $Wald = 3.23$ ,  $OR = 1.94$ , 95% CI for  $OR = 0.94, 4.01$ ,  $p = .072$ ).

In the high-risk condition, only psychopathy showed an odds ratio  $>1.00$  and the only significant B coefficient: (Machiavellianism:  $B = -.32$ ,  $Wald = 0.45$ ,  $OR = 0.73$ , 95% CI for  $OR = 0.29, 1.84$ ,  $p = .503$ ; Narcissism:  $B = .36$ ,  $Wald = 0.85$ ,  $OR = 1.44$ , 95% CI for  $OR = 0.67, 3.10$ ,  $p = .356$ ; Psychopathy:  $B = .89$ ,  $Wald = 3.30$ ,  $OR = 2.43$ , 95% CI for  $OR = 0.93, 6.35$ ,  $p = .069$ ).

Finally, we tested the difference in strength between the cheating correlations (Machiavellianism vs. psychopathy) in the high risk condition. Results indicated that, as predicted, the correlation

Table 3  
*Cheating as a Function of Dark Triad and Instructions in Study 2: Logistic Regression*

Predictors	<i>r</i>	<i>r</i> <sub>x,y</sub>	<i>B</i>	WALD	OR	95% CI	<i>p</i>
Condition	-.10*	-.10*	-.27	2.79	.76	.55, 1.05	.095
Machiavellianism	.15*	.07	.19	.87	1.21	.81, 1.79	.351
Narcissism	.05	-.04	-.10	.35	.90	.65, 1.26	.552
Psychopathy	.16*	.10*	.50	6.41	1.65	1.12, 2.43	.011
Mach $\times$ Cond	-.09	-.10*	-.40	4.01	.67	.45, .99	.045
Narcissism $\times$ Cond	-.03	.08	.33	3.80	1.40	.99, 1.95	.051
Psychopathy $\times$ Cond	.04	.00	.07	.38	1.08	.73, 1.58	.715

Note.  $N = 441$ . The tabled values emerged from a logistic regression. Columns 7–8 provide confidence intervals and significant levels for the odds ratios in Column 6.

\*  $p < .05$ , two-tailed.

of cheating with psychopathy was (marginally) higher than that with Machiavellianism, based on a two-tailed test,  $t = 1.89, p = .08$ . The cheating correlation with narcissism, however, was not significantly different from that with psychopathy or Machiavellianism ( $ps > .20$ ).

**Discussion**

The results of Study 2 extend those from Study 1 in demonstrating the tenacious link between psychopathy and dishonesty. Even in the high risk condition, those with psychopathic traits persisted in risking their MTurk reputation for minimal gain (\$0.25). This finding supports the risk-taking element of psychopathy, well-known even from early writings on the topic (Hare & Neumann, 2008). This failure to consider long-term consequences puts such individuals at risk for self-destructive as well as interpersonally malevolent behavior (e.g., Lynam, 1996).

By contrast, individuals high in Machiavellianism hesitated to cheat under risk (see Figure 1). For them, the long-term reputational loss was not worth the short-term financial gain. The finding is consistent with evidence for the adaptive flexibility of Machiavellians (Adams et al., 2014; Bereczkei et al., 2013; Jones & Paulhus, 2011b).

Although not predicted, narcissism showed a marginally significant interaction. Hence it may be the case that, although less than Machiavellianism, narcissism may also entail some degree of flexibility (e.g., Wallace & Baumeister, 2002). Overall, these findings support the idea that the Dark Triad members can show distinct behavioral patterns, consistent with their distinct theoretical roots (Jones & Paulhus, 2011a).

**Study 3: Ego Depletion Induces Psychopathic Behavior**

**Among Machiavellians**

To implement their strategic planning, individuals of a Machiavellian character require higher-level cognitive resources (Jones & Paulhus, 2011a). Any context that blocks or undermines executive functioning should serve to impair their impulse control (Gino et al., 2011). By contrast, temporary reductions in executive

functioning should have little effect on psychopathic individuals: After all, their impulse control is chronically low (Hare & Neumann, 2008), even for those at the subclinical levels (LeBreton, Binning, & Adorno, 2006).

A straightforward method for testing such a hypothesis would be to experimentally undermine the executive resources of research participants. If this manipulation changed the behavior of those high in Machiavellianism, but not those high in psychopathy or narcissism, it would provide strong evidence that Machiavellian individuals rely on those executive resources more than do individuals high in other dark traits.

One approach to impairing executive resources is to apply a cognitive load during the target behavior (e.g., Finn, Gunn, & Gerst, 2015; Paulhus, Graf, & van Selst, 1989; Visu-Petra, Miclea, & Visu-Petra, 2012). An even longer-lasting impairment can be effected via a manipulation known as *ego depletion* (Baumeister, 2001): Specifically, a taxing inhibition task temporarily disables resources normally allocated for strategic thinking and thought regulation (Schmeichel, Vohs, & Baumeister, 2003).<sup>3</sup>

When effective, these ego depletion procedures appear to strip away one’s ability to override unacceptable impulses such as prejudicial behaviors (Govorun & Payne, 2006). Most important for the present study, such ego depletion also alters one’s ability to resist cheating or even resist temptations that might lead to cheating (Gino, Schweitzer, Mead, & Ariely, 2011). Individuals who were subjected to ego depletion were less likely to tell the truth when monetarily rewarded for a task under conditions that posed no serious consequence. In this way, individuals who are trying to do the right thing may be unable to resist a cheating opportunity.

This line of argument suggests that, when ego depleted, individuals high in Machiavellianism may be just as likely as those high in psychopathy to act dishonestly without full consideration of the consequences. By contrast, individuals high in psychopathy or narcissism should be unaffected by the ego depletion paradigm. Those high in psychopathy are unlikely to be affected because of their dispositionally poor impulse control. Narcissistic individuals are unlikely to be affected because they are motivated by self-promotional gains rather than instrumental ones (Jones & Paulhus, 2011a). Moreover, narcissism is associated with some degree of impulsivity (Vazire & Funder, 2006), if not as extreme as that found with psychopathy.

In sum, we tested the hypothesis that ego depletion will render Machiavellian individuals more reckless, but will have little effect on those high in narcissism and psychopathy. Participants were randomly assigned to an ego depletion task or a control condition. Under ego depletion, the executive resources required for Machiavellian impulse control should be stripped away and such individuals should act in ways that are similar to those high in psychopathy.

**Method**

**Participants.** We recruited 501 participants (51% Women; Mean age = 32.60,  $SD = 11.25$ ; 74% European Heritage; 6%

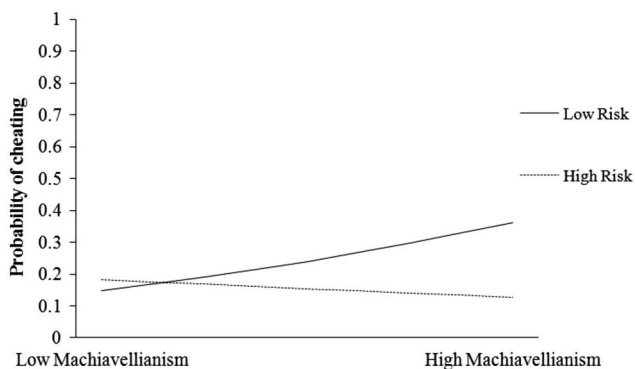


Figure 1. Cheating as a function of Machiavellianism under high and low risk: Study 2.  $N = 441$ . Plotted values are probabilities of cheating among those scoring 1  $SD$  above and below the mean on Machiavellianism.

<sup>3</sup> Some reviews have called into question the replicability of ego depletion findings (e.g., Lurquin et al., 2016). Those critics recommend large sample sizes (such as ours) to avoid misleading, underpowered effects.

African Heritage; 5% East Asian; 3% Latino, 12% other) on Amazon's MTurk for a study on personality and behavior.

**Measures.** Participants were collected in two separate waves. The first wave used the original measures of the Dark Triad. The 20-item *Mach IV* (Christie & Geis, 1970) uses a 5-point Likert format ( $M = 2.70$ ,  $SD = .50$ ,  $\alpha = .81$ ). The 64-item *Self-Report Psychopathy* (SRP) scale (Paulhus, Neumann, & Hare, 2016) also employs a 5-point Likert format ( $M = 2.18$ ,  $SD = .60$ ,  $\alpha = .92$ ). The 16-item version of the *Narcissistic Personality Inventory* (NPI-16; Ames et al., 2006) uses a dichotomous (1–2) format ( $M = 1.30$ ,  $SD = .19$ ,  $\alpha = .70$ ). The 16 items are a subset of the full 40-item NPI (Raskin & Hall, 1979).

The second wave used the 27-item SD3 to tap the Dark Triad. Subscale descriptives were as follows: psychopathy ( $M = 2.09$ ,  $SD = .65$ ,  $\alpha = .79$ ), Machiavellianism ( $M = 3.09$ ,  $SD = .54$ ,  $\alpha = .74$ ), and narcissism ( $M = 2.76$ ,  $SD = .57$ ,  $\alpha = .73$ ). The pair of measures for each Dark Triad member were standardized within wave and merged. Despite the combining of SD3 and standard measures, overall intercorrelations were again typical: Machiavellianism with psychopathy = .51, Machiavellianism with narcissism = .19, narcissism with psychopathy = .32).

**Design and procedure.** Similar to the methodology of Schmeichel and colleagues (2003), participants were asked to watch one of two foreign language interviews on youtube.com with English subtitles. In the ego depletion condition, they were told to ignore the English subtitles. This task is effortful and temporarily undermines cognitive resources (Baumeister et al., 2007). One was an interview with Cambodian journalists (<http://www.youtube.com/watch?v=J-sukXsXqo>). The other was an interview with the Argentinian writer Jorge Luis Borges (<http://www.youtube.com/watch?v=prpPH923f4M>). Both videos were approximately three minutes in length. The switch in video was necessary because the Borges video became unavailable on YouTube. However, this switch turned out to be advantageous because the use of two separate foreign-language videos allowed a test of generalizability.

Note that the wave corresponding to the Borges video had two control conditions, one advising participants to cheat on the coin flipping task, the other advising participants not to cheat. This manipulation did not interact with any Dark Triad traits, and had no effect on the overall outcome (see Supplementary Materials). Therefore, we combined these two control groups into one.

Participants were randomly assigned to instruction conditions following Schmeichel and colleagues (2003): ego depletion (*pay attention to the video but ignore the subtitles*) or control condition (*pay attention to the video*). Because they were warned they would be queried about their reactions to the film, participants in both conditions were motivated to pay attention. Immediately afterward, all participants completed the same coin-flip procedure as in Studies 1 and 2.

## Results

Cheating across the two samples was comparable: 22% cheated in the Borges video sample, and 20% cheated in the Cambodian journalist sample. To evaluate whether or not video source had any impact on the results, we contrast coded the videos (*Borges video* = -1; *Cambodian journalists video* = +1) and examined them as an interaction term with the Dark Triad and ego depletion.

We also explored three-way interactions with video, condition, and each Dark Triad trait. Note that this analysis was performed both simultaneously and for each Dark Triad trait in isolation. No interactions with video emerged, so we collapsed the two samples (see Supplementary Materials). That degree of similarity supports the robustness of findings across videos and across personality inventories. The latter is consistent with previous research indicating the comparability of the SD3 (Jones & Paulhus, 2014) and the original Dark Triad measures (Jones & Olderbak, 2014).

We then conducted a binary logistic regression predicting coin flip cheating. The predictors were (a) the Dark Triad scores, (b) condition (*ego depletion* = +1; *no ego depletion* = -1), and (c) the three Dark Triad  $\times$  condition interactions. The results of a binary logistic regression are presented in Table 4. The interaction pattern (displayed in Figure 2) is consistent with our prediction that ego depletion unleashes reckless dishonesty among individuals high in Machiavellianism. None of the other predictors showed any consistent evidence of a significant contribution.

## Discussion

Study 3 provided experimental evidence that psychopathy and Machiavellianism do differ in (at least) one important way. The cautious behavior of Machiavellians can be undermined by ego depletion, resulting in risky antisocial behavior. Under such conditions the behavior of those high in Machiavellianism appears indistinguishable from the behavior of those high in psychopathy. By contrast, narcissism and psychopathy appear to be unaffected by the ego depletion task.

The results imply that Machiavellian individuals are motivated to cheat—even for minimal gain—but through executive override, resist that temptation. These findings extend the theoretical perspective of Jones and Paulhus (2011a) that psychopathy and Machiavellianism can be differentiated with respect to temporal orientation. Specifically, we argued that, compared with individuals high in psychopathy, those high in Machiavellianism have a longer-term orientation (i.e., more ego-control). The present findings suggest that such a long-term orientation requires intact executive functioning. This statement is not to imply that Machiavellian individuals necessarily have superior executive functioning compared to the average person: They simply do not have those deficits in executive functioning that are diagnostic of indi-

Table 4  
*Cheating as a Function of Dark Triad and Ego Depletion (ED) in Study 3*

Predictors	$r$	$r_{x,y}$	$B$	WALD	OR	95% CI	$p$
Ego depletion	.08	.07	.15	1.42	.98	.91, 1.47	.234
Machiavellianism	.13*	.06	.24	2.78	.76	.96, 1.67	.095
Narcissism	.15*	.11*	.26	4.75	1.15	1.03, 1.64	.029
Psychopathy	.14*	.06	.15	1.21	1.55	.89, 1.52	.271
Mach $\times$ ED	.08	.09*	.31	4.73	3.38	1.03, 1.79	.030
Narcissism $\times$ ED	.02	.02	.09	.01	1.56	.80, 1.28	.942
Psychopathy $\times$ ED	.00	-.05	-.13	.88	.62	.67, 1.15	.347

Note.  $N = 501$ . Ego depletion was coded as: depletion = 1 ( $n = 193$ ) and no depletion = -1 ( $n = 308$ ). Because both variables are dichotomous, the correlation between ego depletion and cheating is a phi-coefficient.

\*  $p < .05$ , two-tailed test.

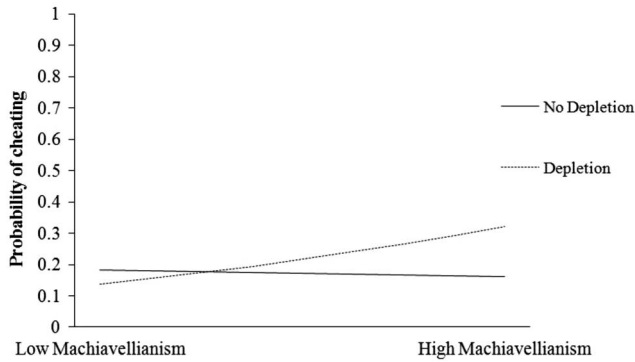


Figure 2. Cheating as a function of ego depletion and Machiavellianism: Study 3.  $N = 501$ . Plotted values are probabilities of cheating among those scoring 1 *SD* above and below the mean on Machiavellianism.

viduals high in psychopathy (Lynam, 1996) or other impulsive traits (Vazire & Funder, 2006).

**Study 4: Intentional Fraud in Record-Keeping**

Although the coin flipping task provides a simple way of indexing (relatively harmless) cheating, it is unclear as to whether participants are intentionally lying or merely self-deceiving. It would be easy to justify their misbehavior with such notions as “That first coin toss was simply bad luck” or “It did eventually land on heads” or “I wanted to make sure it wasn’t stuck on tails.” Such behavior may be more a matter of rationalized impulsivity. Therefore, we designed Study 4 to examine cheating in a way that minimizes the possibility of rationalization because it involves a blatant, delayed fraud – false record-keeping.

Given that the constructs of Machiavellianism and psychopathy are both associated with blatant lying (Jones & Paulhus, 2011a), we predicted that both traits would be associated with cheating in a record-keeping paradigm. On the other hand, narcissistic duplicity tends to be more self-deceptive and justified by entitlement. Because the duplicity is so deliberate, we predicted that narcissism would have no unique contribution to fraudulent reporting.

**Method**

**Participants.** A total of 254 (55% Women; mean age = 34.13, *SD* = 11.69; 74% European Heritage, 8% African Heritage, 6% East Asian, 6% Latin American, 6% other) workers on MTurk participated in a study described as “Personality and Behavior.” The payment regimen is described below.

**Measures.** We again used the Short Dark Triad measure of the Dark Triad. Its subscales showed intercorrelations similar to those in Study 1 (Mach & psychopathy = .59, Mach & narcissism = .38, narcissism & psychopathy = .41). Again, the internal consistencies were acceptable (Mach: Mean = 3.01, *SD* = .71,  $\alpha = .82$ ; psychopathy: Mean = 2.16, *SD* = .70,  $\alpha = .81$ ; narcissism: Mean = 2.66, *SD* = .65,  $\alpha = .77$ ).

**Design and procedure.** Participants were told that they were playing a game for a financial bonus. Here, we took advantage of MTurk’s bonus mechanism as well as the interface. Because MTurk workers are anonymous, their data are only available

on MTurk’s website with (a) an anonymous ID and (b) a space where workers may provide a pass code given to them to get credit for completing the survey. On this MTurk page, we added a second line asking for how many rounds they won. Our cover story was simply that we were unable to link their MTurk ID to their survey data, because that would be unethical. Instead, they were supposed to keep track of their winnings throughout the game so they could report it for us on MTurk’s web page: We could then provide them with the appropriate bonus.

During the actual survey, participants were presented with three identical images of a door. They were told that one of the doors was a winner and the other two were losers. Unbeknownst to them, participants had been surreptitiously assigned to one of two conditions. The loss condition had them start with \$0.25 and lose \$0.05 for every wrong door. The gain condition had them start with \$0.00 and gain \$0.05 for every correct door. This manipulation had no impact on the overall results (see gain-loss table in Supplementary Materials). Therefore, we combined the two conditions.

Participants were required to play all five rounds and were advised to keep track of the rounds that they won or lost (for reasons mentioned above). In actual fact, all participants were assigned to win Round 4, and lose all other rounds: Hence, all honest participants should have reported one win. The primary dependent variable was whether or not they reported winning more than one round.

**Results**

Of the full sample, a total of 8% ( $n = 21$ ) misrepresented how many rounds they won, with most reporting one extra win. We calculated point-biserial correlations between misrepresentation and each Dark Triad trait. As predicted, Machiavellianism,  $r = .24, p < .001$ , and psychopathy,  $r = .24, p < .001$ , were significantly correlated with intentional misrepresentation. Also as predicted, narcissism was unrelated,  $r = .05, p = .46$ .

We then conducted a binary logistic regression predicting misrepresentation from the three Dark Triad traits. Results indicated that both Machiavellianism ( $B = .71, SE = .30, Wald = 5.57, OR = 2.02, 95\% CI for OR = 1.13, 3.64, p = .02$ ) and psychopathy ( $B = .69, SE = .30, Wald = 5.22, OR = 1.99, 95\% CI for OR = 1.10, 3.59, p = .02$ ) made unique contributions to misrepresentation. Also as predicted, narcissism was unrelated ( $B = -0.36, SE = .33, Wald = 1.76, OR = 0.70, 95\% CI for OR = 0.41, 1.19, p = .19$ ). See Table 5.

**Discussion**

The duplicity required in Study 4 was more dramatic than that required in Studies 1 & 2. In the latter paradigm, participants simply had to add an additional click of the same response button. In Study 4, participants were asked to keep a record of how many wins they had accumulated over a series of trials, most of which they had actually lost. Thus, the awareness of committing fraud was evident throughout.

Only those for whom fraud is not dissonant can sustain duplicity over an extended period (Ditto & Lopez, 1992). Psychopathic and Machiavellian individuals have little trouble in this regard because such immorality does not evoke distress (Jonason et al., 2014).

Table 5  
Record-Keeping Fraud as a Function of the Dark Triad in Study 4

Predictors	<i>r</i>	<i>r</i> <sub>x,y</sub>	<i>B</i>	WALD	<i>OR</i>	95% CI	<i>p</i>
Machiavellianism	.24*	.14*	.71	5.57	2.02	1.13, 3.64	.018
Narcissism	.05	-.08	-.36	1.76	.70	.41, 1.19	.185
Psychopathy	.24*	.14*	.69	5.22	1.99	1.10, 3.59	.022

Note. *N* = 254. The tabled values emerged from a logistic regression. Predictor variables were measured with the Short Dark Triad inventory. \* *p* < .05, two-tailed test.

### Study 5: Narcissism Entails Self-Deception

Although impression managers tend to be aware of their dishonesty, self-deceivers actually believe in their distorted version of reality (Lockard & Paulhus, 1988; von Hippel & Trivers, 2011). Here we assume that self-enhancement conducted in private represents a form of self-deception (Baumeister & Cairns, 1992; Ditto & Lopez, 1992). Without an apparent audience, the alternative—conscious impression management—seems implausible.

Both public and private forms of self-promotion have been observed when survey respondents are asked to rate their familiarity with nonexistent items (Paulhus, 2011). Known as *overclaiming*, this tendency is highest when (a) accountability is low (Paulhus et al., 2003) and (b) perceived expertise is high (Atir, Rosenzweig, & Dunning, 2015). The systematic tendency to claim familiarity with nonexistent items serves as a concrete indicator of self-enhancement. Some individuals even overclaim in private contexts: Such individuals also tend to score high on personality measures of narcissism and self-deception (Gebauer, Sedikides, Verplanken, & Maio, 2012; Paulhus, 2011). This pattern of personality correlates supports the notion that private overclaiming is a form of self-deception. Here we investigate the Dark Triad correlates of private overclaiming.

Although narcissism has previously been linked to overclaiming, our usual concern about overlap requires that the three triad members be evaluated concurrently. To date, the only study comparing all three (Paulhus et al., 2003) was administered in a supervised laboratory (i.e., public) setting. Moreover, the long traditional triad measures were used instead of the newer, more efficient measures used here.

In the present study, the overclaiming items were administered online in an anonymous fashion. The Dirty Dozen and Short Dark Triad measures were included as predictors. Our hypothesis was that, among the Dark Triad, narcissism would emerge as the primary predictor.

### Method

**Participants.** Participants were 262 adults from MTurk (59% women, *Mean age* = 33.85 (*SD* = 21.2); 77% European Heritage, 7% African Heritage, 7% East Asian, 2% South Asian, 6% Latino(a), 7% other). An item regarding educational level indicated that 60% of participants held a bachelor's degree or higher. Hence, use of the academic OCQ seemed appropriate with this sample.

#### Measures.

**Dark Triad.** To assess the Dark Triad traits, we again included the Short Dark Triad (SD3)(Jones & Paulhus, 2014) and the Dirty Dozen (DD)(Jonason & Webster, 2010). The SD3 subscales again

had adequate internal consistency (Machiavellianism: *Mean* = 2.98, *SD* = 0.60,  $\alpha$  = .78; narcissism: *Mean* = 2.79, *SD* = 0.63,  $\alpha$  = .73; psychopathy: *Mean* = 2.16, *SD* = 0.62,  $\alpha$  = .79), and the intercorrelations were again typical: Mach with psychopathy = .50, Mach with narcissism = .29, narcissism with psychopathy = .33). As in Study 1, we relegate all Dirty Dozen results to our Supplementary materials.

**Overclaiming Questionnaire (OCQ).** Participants completed the 90-item academic version of the OCQ (Paulhus et al., 2003). This abbreviated version was designed to capture knowledge accuracy and bias in a relatively rapid fashion.<sup>4</sup> Participants are asked to rate their familiarity with 90 items covering five topics (philosophy, literature, etc.): 72 are *real* items and 18 are nonexistent *foils*. The reals ranged from common (e.g., “gene”) to quite obscure (e.g., “charm quark”). The foils, designed to look realistic, included “quasi-limbics” and “restyllation”: Their nonexistence is best confirmed with a Google search shortly before administration of the questionnaire.

A variety of scoring formulas for the signal detection theory (SDT) approach can be found in Stanislaw and Todorov (1999). All accuracy and bias formulas are based on two empirical values: the *hit rate* (proportion of real items claimed) and *false alarm rate* (proportion of foils claimed). The so-called common-sense index pair (Paulhus, 2011) consists of (a) *knowledge accuracy*—the simple difference between hit rate and false alarm rate, and (b) *knowledge bias*—the mean of the hit and false alarm rates (i.e., the overall claim rate). Calculated for each participant, these four indices can then be used as predictors or criteria in regression analyses.

Among the other SDT indices detailed by Stanislaw and Todorov (1999), we also scored a ‘standard’ pair: For accuracy, we chose index *d'*; for overall bias, we chose index *c*. Note that the hits and false alarms must be normally distributed to calculate *d'* and *c*: We confirmed that they were.

**Procedure.** The online questionnaire was strictly anonymous. Therefore, participants had no reason to engage in impression management. At the same time, they were likely to take the task seriously because MTurk procedures encourage conscientiousness through a number of procedures, including the threat of having work rejected (Paolacci & Chandler, 2014).

### Results

Descriptives for the standard SDT indices were as follows: *d'* (*M* = 1.04, *SD* = .76) and *c* (*M* = .24, *SD* = .54). Note that negative values of *c* indicate greater bias toward indicating familiarity. Descriptives for the commonsense SDT measures were as follows: knowledge accuracy (*M* = .35, *SD* = .22) and knowledge bias (*M* = .42, *SD* = .17). These indices were each correlated with, and independently regressed on, the Dark Triad members.

For both standard and common sense metrics, SD3 narcissism emerged as the major predictor of bias. Only narcissism showed a significant correlation with *c*,  $r = -.15$ ,  $p < .05$  and common sense bias,  $r = .18$ ,  $p < .05$ . Regression results are spelled out in Table 6: The pattern is similar to previous research, with narcissism as the only unique predictor of the bias indices (although only

<sup>4</sup> The original long form of the academic OCQ comprises 150 items (Paulhus et al., 2003).



Table 6  
Self-Deceptive Overclaiming as a Function of the Dark Triad in Study 5

Predictors	<i>r</i>	<i>r</i> <sub>x,y</sub>	β	95% CI	<i>p</i>
Standard indices					
Results for <i>c</i>					
Machiavellianism	-.09	-.04	-.05	.20, .11	.544
Narcissism	<b>-.15*</b>	-.13	-.14	-.29, .01	.064
Psychopathy	-.08	-.01	-.01	-.17, .14	.871
Results for <i>d'</i>					
Machiavellianism	-.14*	.01	.01	-.14, .16	.912
Narcissism	-.29*	-.22*	-.25	-.39, -.10	.001
Psychopathy	-.24*	-.15*	-.16	-.31, -.02	.032
Commonsense indices					
Accuracy					
Machiavellianism	-.10	.06	.06	-.03, .08	.369
Narcissism	-.25*	-.19*	-.20*	-.12, -.03	.002
Psychopathy	-.25*	-.18*	-.21*	-.13, -.03	.003
Bias					
Machiavellianism	.05	-.05	-.03	-.10, .06	.643
Narcissism	<b>.18*</b>	.15*	.16*	.02, .16	.017
Psychopathy	.11	.06	.07	-.04, .12	.331

Note. *N* = 262. Key predictions are in bold.  
\* *p* < .05, two-tailed test.

marginal for *c*). Finally, psychopathy showed a trend toward self-deception—consistent with Paulhus and Williams (2002). Results for the Dirty Dozen, however, showed no associations consistent with Dark Triad theory: These results can be found in the Supplementary Materials.

### General Discussion

Together this package of studies helps advance two research themes. First, it confirmed the distinctive profiles of the Dark Triad constructs—when operationalized with the standard measures or the Short Dark Triad (SD3) inventory. Second, this package helped elaborate three distinct forms of duplicity (self vs. other deception, risk vs. caution, intentional vs. rationalized cheating) as well as links among them. These two broad themes were advanced by exploring the distinctive dynamics of the Dark Triad with five behavioral studies of dishonesty. All studies were sufficiently powered to ensure future replicability of our findings.

To summarize, all three traits were related to dishonesty when there was no risk of being caught (Study 1). Only those high in psychopathy continued to cheat when punishment was a serious risk (Study 2). When ego-depleted, individuals high in Machiavellianism also engaged in reckless cheating (Study 3). Psychopathy and Machiavellianism, but not narcissism, were associated with blatant, intentional deception (Study 4). Finally, individuals high in narcissism exhibited the greatest degree of private overclaiming (Study 5). Whereas those high in psychopathy and Machiavellianism exhibit interpersonal deception, narcissistic duplicity appears to be self-deceptive. For the most part, these results match the pattern laid out in Table 1.

Thus, all three Dark Triad traits showed evidence of duplicity, an important form of interpersonal exploitation. In Study 1, the three associations with dishonesty were virtually identical in size. Naming one as the ‘true’ cause would have been rather arbitrary. To tease apart the unique dynamics of the triad members, Studies

2–5 required unique experimental designs. Results revealed differences in both kind and degree. Although some behavioral differences have already been found when peers are being cheated (Jones, 2013), Study 4 escalated Dark Triad duplicity to the level of blatant fraud. With broader implications, the intentional falsifying of record-keeping (Study 4) comes closest to “cooking the books,” a serious financial crime. Such active dishonesty among our participants may well presage crime later in life (Lynam, 1996), even corporate crime (Mathieu, Hare, Jones, Babiak, & Neumann, 2013).

### Dishonesty as a Trait

The most compelling trait umbrella for dishonesty is the H-H factor distinguished by Ashton, Lee, and their colleagues (e.g., Ashton & Lee, 2005; Lee & Ashton, 2014). Within that broad umbrella, the narrower Dark Triad members are linked to distinct forms of malevolent behavior, including dishonesty. Some forms of dishonesty are impulsive; some more deliberate. Some forms are clearly intentional; others may be rationalized impulsivity. In some forms of dishonesty, the audience is other people; in other forms, it is the self. Our five studies have confirmed these distinctions by linking different forms of cheating to different personalities.

Answering the call for behavioral outcomes (e.g., Baumeister, Vohs, & Funder, 2007), we have opted for objective observations to argue for trait-like predispositions. Thus our methods provide a more solid footing than do studies using self-reported dishonesty. This approach is also superior to validation with informant measures—recently recommended as a panacea by Muris, Merckelbach, Otgaar, and Meijer (in press). The latter cannot reveal the subtle interactions with context that we have teased apart with the present five studies.

In some cases, our behavioral indices also provided conceptual replications across alternative indicators: For example, psychopathic individuals cheated by repeated coin-flipping as well as by duplicitous record-keeping. Indeed, psychopathy appeared as the most (cross-situationally) consistent trait predictor of dishonesty. Our final cheating variant, that is, narcissistic self-deception, was consistent with previous research: That variant can also be subsumed under the broad H-H factor (Ashton & Lee, 2001).

### Impulsive Versus Deliberative Dishonesty

Some critics have been reluctant to accept the distinction between Machiavellianism and psychopathy (e.g., Glenn & Sellbom, 2015; Muris et al., in press). That allegation likely emanates from research showing that the two variables often show similar outcomes (Furnham et al., 2013). With regard to dishonesty, for example, individuals with psychopathic and Machiavellian tendencies show similarly favorable attitudes (Egan, Chan, & Shorter, 2014). In our research, however, the overt behavior of these two constructs was distinguished with two different dishonest behaviors: In Study 2, the discriminating behavior was multiple button pressing under high risk; in Study 3, it was the differential impact of ego depletion. In sum, psychopathy and Machiavellianism differ in their chronic ability to maintain impulse control.

The ego depletion study also helps clarify why psychopathy and Machiavellianism can be hard to distinguish at times. When cog-

nitive resources are intact, Machiavellians and psychopaths behave quite differently. Under ego depletion, however, their behavior appears to be identical. Indeed, this conversion of the Machiavellian into a psychopathic character seems to belie a strict trait framework (Jayawickreme et al., 2014). Presumably, however, this conversion is short-lived: Further research is necessary to establish its duration. For researchers studying misbehavior at the clinical level, the notion of chronic ego depletion has potential as a possible mechanism for understanding both psychopathy and externalizing behavior (see Baskin-Sommers & Newman, 2013).

### Self-Deception Versus Other-Deception

Although the definitions of self- and other-deception are patently distinct (Greenwald & Farnham, 2000; Sackeim & Gur, 1978; Myslobodsky, 1997), links between these two phenomena have been drawn by a number of writers. Some have claimed that true self-deception (the maintenance of concurrent but incompatible cognitions) is virtually impossible to confirm (Pinker, 2011). Others claim to have done so (Chance et al., 2011; Kwan et al., 2007; Paulhus & Buckels, 2012; Sackeim & Gur, 1978).

Among the variety of evolutionary arguments for self-deception in social behavior (Krebs, Denton, & Higgins, 1988; Lockard & Paulhus, 1988), one claims that self-deception actually evolved as an adaptation of other-deception. That argument rests on the tenet that believing one's own lies facilitates deceiving others (von Hippel & Trivers, 2011). From a social learning perspective, some have argued that habitual other-deception (i.e., impression management) eventually becomes self-deceptive in nature (Baumeister & Cairns, 1992) or at least automatized (Johnson & Hogan, 1981). In other words, people come to believe their own inflated self-descriptions.

Neither of these perspectives are easily reconciled with our results. We found that the most self-deceptive individuals—namely, those high in narcissism (Campbell & Foster, 2007)—showed the weakest link with other-deception (i.e., dishonesty toward others). However, this distinction is consistent with the recent demonstration that narcissism is closer to self-deception than to blatant lying (Wright, Berry, Catmur, & Bird, 2015). The distinction is also consistent with evidence that self- and other-deception implicate different areas of the brain (Kwan et al., 2007; Myslobodsky, 1997).

### Limitations

We acknowledge several key limitations to the package of studies presented here. First, all of our research was conducted in a virtual environment. Note, however, that much of modern day life is lived online and that virtual space includes its share of deception (ten Brinke, Black, Porter, & Carney, 2015). Our online research benefited from use of the novel coin-flip task developed by Quoidbach and Chakroff (2011). The task proved to be a simple but effective way to study dishonesty while retaining the many advantages of an online method.

Second, controversy has arisen over whether the ego depletion paradigm is as robust as some have asserted (Lurquin et al., 2016). Although our ego depletion manipulation was effective, it was achieved with a large sample size and more than 80% power: Underpowered studies may not achieve this same result (Richard

et al., 2003). Further, we were examining ego depletion in those with existing predispositions toward unethical behavior. Thus, it may be the case that ego depletion works only on *certain* types of individuals, and not the general population.

A third limitation is that all of our data were drawn from the online crowdsourcing website, Mechanical Turk. Although a familiar and (now) well-recognized source of high quality data (see Buhrmester et al., 2011), future research should consider alternative samples (e.g., community, forensic, student) to bolster confidence in the generalizability of the present results.

Finally, we included the Dirty Dozen (DD) inventory in Studies 1 and 5 in an attempt to operationalize the Dark Triad with more than one brief inventory. However, the DD subscales failed to perform in ways that were consistent with theory. We did not want to dwell on the limitations of the DD, given that this was not the purpose of the present research. In the spirit of full disclosure, however, complete analyses are available in the Supplementary Materials.

### Conclusions

Previous work has linked the Dark Triad to duplicity in such applied contexts as personnel selection (Furtner et al., 2011; Harms & Spain, 2015; Wu & Lebreton, 2011), sexual relationships (Jonason, Li, & Buss, 2010; Jones & Weiser, 2014), scholastic behavior (Nathanson, Paulhus, & Williams, 2006; Williams et al., 2010), and occupational choice (Jonason, Wee, Li, & Jackson, 2014). The studies presented here are more basic: They delve into the psychological dynamics of dishonesty. By comparing and contrasting their contributions to dishonest behavior, the Dark Triad distinction has thereby provided some insight into that intriguing but tangled web. In particular, the differentiations elaborated here may help explain the fractured history of honesty as a trait.

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