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A Meta-Analysis of the Dark Triad and Work Behavior: A Social Exchange Perspective

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We reviewed studies of the Dark Triad (DT) personality traits—Machiavellianism, narcissism, and psychopathy—and meta-analytically examined their implications for job performance and counterproductive work behavior (CWB). Relations among the DT traits and behaviors were extracted from original reports published between 1951 and 2011 of 245 independent samples (N = 43,907). We found that reductions in the quality of job performance were consistently associated with increases in Machiavellianism and psychopathy and that CWB was associated with increases in all 3 components of the DT, but that these associations were moderated by such contextual factors as authority and culture. Multivariate analyses demonstrated that the DT explains moderate amounts of the variance in counterproductivity, but not job performance. The results showed that the 3 traits are positively related to one another but are sufficiently distinctive to warrant theoretical and empirical partitioning.

Keywords: Dark Triad, Machiavellianism, narcissism, psychopathy, CWB

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Despite positive psychology's emphasis on human strengths and virtues, studies of counterproductive work behavior (CWB), such as employee theft (Buss, 1993), abusive supervision (Tepper, 2007), leadership derailment (Hogan & Hogan, 2002), and excessive organizational politicking (Poon, 2003), attest to the darker side of human nature. Optimism, integrity, and self-authenticity may predict health and happiness, but personality traits such as Machiavellianism, narcissism, and psychopathy may predict misbehavior. Paulhus and Williams (2002) named these three traits the Dark Triad (DT), for "individuals with these traits share a tendency to be callous, selfish, and malevolent in their interpersonal dealings" (p. 100).

The DT personality traits have been linked empirically to a wide range of negative outcomes. Machiavellians, for example, are more likely to take revenge against others (Nathanson, 2008), and they lie more regularly to their friends (Kashy & DePaulo, 1996). Narcissists, when their egos are threatened, are often hostile and aggressive, and their romantic relationships tend to be troubled due to their egocentrism and infidelity (Miller, Widiger, & Campbell, 2010). Psychopathy is associated with various forms of criminality, including sexual assault and murder (Megargee, 2009).

This review examines the DT to determine if this constellation of personality traits' association with dysfunction in interpersonal relations extends to organizational contexts. We begin with a conceptual analysis of the DT that assumes these traits are manifestations of an agentic but exploitative social strategy that motivates striving for personal goals but undermines the balance of social exchange essential to smooth organizational functioning. We then meta-analytically review past empirical studies of the relation between the DT traits and two forms of work behavior: job performance and CWB. Whereas much of that work suggests that the DT's impact is primarily negative, the empirical findings are far from consistent. For example, some researchers (e.g., Giacalone & Knouse, 1990) have reported that Machiavellians are more likely to engage in such CWB as abuse, theft, and sabotage. Other investigators, however, have found that Machiavellians who are concerned with maintaining their power in an organization are more conscientious and less likely to engage in most forms of CWB (Kessler et al., 2010). Overall, the link between the DT and work behavior is tentative, with a substantial number of positive, negative, and null findings. We examine the results of 245 separate samples totaling 43,907 participants to identify associations across studies and also identify factors that moderate the strength of those associations. We also examine the degree of overlap among the DT variables and gauge their combined predictive utility in explaining work behaviors.

The Dark Triad

Evolutionary analyses of the function of personality suggest that traits emerged in the "social landscape to which humans have had

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to adapt" (Buss, 1991, p. 471) and offer the means by which people gain status, secure their place within the group, and increase access to mates. Some individuals solve these problems through prosocial means, such as striving to be agreeable and conscientious, but others use more individually agentic, if socially aversive, strategies (Jonason & Webster, 2010). Machiavellians' beliefs about the gullibility of others and lack of concern for their rights lead to manipulative behaviors. Narcissists' inflated view of self, coupled with delusions of grandeur, creates a desire to self-promote and engage in attention-seeking behaviors. For those high in psychopathy, a disregard for societal norms leads to antisocial behavior. Paulhus and Williams (2002) labeled these three traits the DT based on their degree of social averseness. All three traits contain a degree of malevolency that directly affects interpersonal behavior.

Machiavellianism

Niccolo Machiavelli's (1532/1950) *The Prince* is a handbook for those attempting to seize and retain political power. Drawing on historical precedent rather than philosophical ideals, he suggested that even a morally righteous man must make deliberate use of ruthless, amoral, and deceptive methods when dealing with unscrupulous men. The construct drew the attention of researchers in psychology and management when Christie and Geis (1970) published a personality measure based on Machiavelli's principles. The Machiavellian personality is defined by three sets of interrelated values: an avowed belief in the effectiveness of manipulative tactics in dealing with other people (e.g., "Never tell anyone the real reason you did something unless it is useful to do so"), a cynical view of human nature (e.g., "It is safest to assume that all people have a vicious streak and it will come out when they are given a chance"), and a moral outlook that puts expediency above principle (e.g., "It is hard to get ahead without cutting corners here and there"). Narrative reviews of the literature by Fehr, Samson, and Paulhus (1992) and Jones and Paulhus (2009) generally confirmed these characterizations of Machiavellians, finding that they endorse a negative view of people and are more likely to make ethically suspect choices (Kish-Gephart, Harrison, & Treviño, 2010). They think of themselves as skillful manipulators of others, although their overall emotional intelligence is not as strong as their self-conception suggests (Dahling, Whitaker, & Levy, 2009). They are relatively successful in their careers, particularly when they work in unstructured, less organized settings. As organizational structure increases, their success tends to decrease. They are not necessarily disliked by others, but they are not exceptionally successful when politicking (e.g., Ferris & King, 1996; Ferris et al., 2005). They are more likely to cheat, lie, and betray others, but they do not regularly engage in extremely negative forms of antisocial behavior (Jones & Paulhus, 2009).

Narcissism

Extreme self-aggrandizement is the hallmark of narcissism, which was first identified by clinicians in their analyses of disordered personalities. However, personality psychologists consider milder displays of narcissism to be evidence of a personality type and not necessarily a disorder (Rhodewalt & Peterson, 2009). In this conceptualization of narcissism, most individuals, and even organizations (Brown, 1997), possess some level of narcissism that colors their perceptions and behaviors. Narcissism includes an inflated view of self; fantasies of control, success, and admiration; and a desire to have this self-love reinforced by others (Kernberg, 1989; Morf & Rhodenwalt, 2001). One of the most frequently used measures of narcissism, the Narcissistic Personality Inventory (NPI), includes items pertaining to leadership and dominance (e.g., "I am going to be a great person"), grandiose exhibitionism (e.g., "I like to be the center of attention"), and a sense of entitlement (e.g., "I insist on getting the respect that is due me"; Raskin & Hall, 1979).

Most theorists distinguish between a healthy self-respect and confidence, and unhealthy, narcissistic self-love. Narcissists exaggerate their achievements, block criticism, refuse to compromise, and seek out interpersonal and romantic relationships only with admiring individuals (W. K. Campbell, 1999; Resick, Whitman, Weingarden, & Hiller, 2009). To others, narcissists appear arrogant, self-promoting, aggressive, and in general less likable (Buffardi & Campbell, 2008). Narcissism is also, in some cases, associated with aggression. The threaten-egotism hypothesis maintains that narcissists usually dismiss negative feedback, but if publicly censured or criticized, then they are likely to respond aggressively (Bushman et al., 2009).

Psychopathy

The third personality trait of the DT, psychopathy, is marked by a lack of concern for both other people and social regulatory mechanisms, impulsivity, and a lack of guilt or remorse when their actions harm others. Interpersonally, they are often skilled impression managers, who are glib and charismatic. Emotionally shallow, they often adopt parasitic lifestyles, engaging in a variety of criminal activities to achieve their ends (Hare & Neumann, 2009). Psychopathy measures such as Lilienfeld and Widows's (2005) include items related to a person's sense of social potency (e.g., skill at using charm to avoid the ire of another), impulsive nonconformity (e.g., questioning of authority figures without good cause), immunity from stress (e.g., ability to stay calm when others cannot), and callousness, emotional coldness, and unsentimentality (e.g., inability or unwillingness to experience infatuation with another).

Like narcissism, psychopathy was originally considered a clinical disorder (antisocial personality disorder), but recent work (e.g., Hare, 1991; Levenson, Kiehl, & Fitzpatrick, 1995) has demonstrated that psychopathy can be considered a personality trait as well as a disorder. Psychopathy is associated with such aversive behaviors as academic cheating (Nathanson, Paulhus, & Williams, 2006b); the use of exploitative, short-term mating strategies (Jonason, Li, Webster, & Schmitt, 2009); and a preference for violent, explicit, or otherwise antisocial media (Williams, McAndrew, Learn, Harms, & Paulhus, 2001).

The Dark Triad in the Workplace: A Social Exchange Model

An evolutionary account of the DT stresses its adaptive value in terms of extracting resources for the individual from the collective. Although Machiavellians, narcissists, and psychopaths differ in emphasis and style, their basic strategy is one of apparent and

covert exploitation of conspecifics. In social species such as *Homo sapiens,* relationship-sustaining processes—cooperation, reciprocal altruism, compassion, and the need for inclusion—are evolutionarily stable strategies, but evolution also favors those who employ more self-serving strategies under certain conditions.

This consistent violation of the basic assumptions of a fair-exchange relationship makes social exchange theory a likely framework for conceptualizing the impact of the DT on work behaviors (Blau, 1964; Cropanzano & Mitchell, 2005; Thibaut & Kelley, 1959). Social exchange theory explains how relationships are initiated and sustained through the reliable exchange of rewards and the imposition of costs between individuals. The theory, applied to organizational settings, suggests that employees work in exchange for direct, concrete rewards such as pay, goods, and services as well as indirect, socioemotional rewards such as status and admiration (Settoon, Bennett, & Liden, 1996). These exchanges create relationships among employees and employers, which are strengthened when (a) the rewards are valued ones and any costs created by the relationships are minimized; (b) exchange partners trust each other to fulfill their obligations over the long term; (c) the exchange is judged to be a fair one, with fairness defined primarily by mutual adherence to the norm of reciprocity; and (d) both parties develop a psychological commitment to the relationship, as indicated by increased affective attachment, a sense of loyalty, mutual support, and an authentic concern for the other's well-being (Cropanzano & Mitchell, 2005).

Social exchange theory provides a theoretically coherent explanation for the average person's work-related outcomes (e.g., Anderson & Williams, 1996; Kacmar, Witt, Zivnuska, & Gully, 2003), but Machiavellians, narcissists, and psychopaths are not like most people. They are not manifestly disagreeable or disruptive, but their valuation of reward and costs, willingness to overlook obligations and reciprocity, and lack of emotional commitment to others likely undermine the binding influence of interpersonal relationships. Machiavellians, for example, are distrustful, so they are less likely to assume that they will be paid back for any extra expenditure of effort they put in on the job (Gunnthorsdottir, McCabe, & Smith, 2002). Narcissists feel they outclass their fellow coworkers so that rules about reciprocity and obligation do not apply to them (W. K. Campbell, Reeder, Sedikides, & Elliott, 2000). Psychopaths' insensitivity to others' means they are less likely to act in ways that will please others or minimize others' suffering (LeBreton, Binning, & Adorno, 2006).

In the sections that follow, we draw on the social exchange perspective to hypothesize about the expected relation between each element of the DT and job performance and CWB. Following Paulhus and Williams (2002, p. 556), we recognize that these personality traits are "overlapping but distinct constructs." Each one describes a set of alternative, and usually socially condemned, interpersonal tendencies, so their relations to work behaviors are relatively similar, but the antecedent and mediating mechanisms that sustain these relations differ from one DT trait to another. The uniqueness of each trait remains, however, an empirical question, and we offer hypotheses about possible moderators of those relations. We do not expect that any variable will change the direction of the overall relation—it is difficult to imagine a context or individual trait that would reverse the generally negative effects of the DT—but in certain contexts these relations may be tempered to a degree.

Machiavellianism and Work Behavior

Studies of marketing (e.g., Crotts, Aziz, & Upchurch, 2005; Hunt & Chonko, 1984), economics (e.g., Gunnthorsdottir et al., 2002; Sakalaki, Richardson, & Thépaut, 2007), accounting (e.g., Aziz & Vallejo, 2007; Wakefield, 2008), and applied psychology (e.g., Austin, Farrelly, Black, & Moore, 2007; Ralston, 1985) suggest that Machiavellianism is linked to work behavior, but that relation has been cast in both negative and positive terms. Those proposing a positive relation point to the Machiavellians' ability to be a social chameleon, taking on the attitudes and behaviors of those around them while subtly manipulating the situation to their favor (Hurley, 2005). This skill potentially allows someone high in Machiavellianism to establish powerful social networks, gain the trust and respect of coworkers, and extract desired outcomes from clients, thus increasing job performance. In addition, organizational citizenship behaviors are often motivated by altruistic intentions, but Machiavellians may engage in a public display of these behaviors to gain favor and portray themselves in the best light possible (Kessler et al., 2010). Machiavellianism paired with a high degree of social effectiveness may result in the capacity to mask from others the more aversive aspects of this syndrome (Witt & Ferris, 2003).

These benefits of Machiavellianism are, however, more often counterbalanced by the significant interpersonal risks one takes by regularly disrupting exchange relationships through interpersonal manipulation. A willingness to manipulate does not necessarily coincide with the ability to manipulate (Austin et al., 2007). Thus, if an individual relies on interpersonal manipulation but lacks self-presentational acumen, then coworkers, subordinates, and supervisors will recognize the ruse and the relationship linking the Machiavellian to the organization will be weakened rather than strengthened. As the adage "Fool me once, shame on you; fool me twice, shame on me," suggests, individuals in exchange relationships are sensitive to any indication of inequity in the exchange process (biased allocation of rewards, shirking obligations, reciprocity violations, etc.), so in time they should be able to detect and take steps to protect themselves against a Machiavellian's intrigues (Molm, 2010).

Social exchange theory, therefore, predicts that Machiavellianism will be negatively associated with job performance. All but a few work situations require the formation of reliable cooperative alliances with others—for example, members of teams support each other; salespersons must create durable relationships with their customers; subordinates meet their obligations because they are loyal to their managers, teams, and organization; leaders are trusted by their followers—but Machiavellians' tendency to violate principles of social exchange weakens their connection to others. Their pessimistic philosophy of human nature also undermines the motivational impact of many of the rewards an organization offers, and their pursuit of success via political machination rather than direct attention to their work may further degrade their performance. In consequence, Machiavellians will generally be less successful in meeting the demands of a business career.

With regard to CWB, Machiavellians are also less constrained by the desire to abide by the normative requirements of fair social exchange and thus more likely to engage in interpersonal forms of CWB, such as mistreatment of coworkers and betrayal. This prediction is consistent with Kish-Gephart et al.'s (2010) recent

meta-analysis, for they found that increases in Machiavellianism were associated with increases in unethical behavior. Their findings were based on only four studies, three of which took place in the laboratory with undergraduate students, but they nonetheless suggest Machiavellians' unique moral outlook means they are more likely to violate basic principles regulating social behavior. We therefore predict the following:

Hypothesis 1a: Machiavellianism will negatively relate to job performance.

Hypothesis 1b: Machiavellianism will positively relate to CWB.

Narcissism and Work Behavior

Social exchange theory's emphasis on the importance of resilient relationships linking organizational members suggests an inverse relationship between narcissism and performance. Delusions of grandeur, elitism, hypercompetitiveness, and feelings of superiority should result in both formal and informal corrective actions such as low performance ratings, being passed over for promotion, ostracism, and interpersonal deviance targeted at the narcissist. Supporting this prediction, researchers have linked increases in narcissism to unsatisfactory task performance (Judge, Lepine, & Rich, 2006), job dissatisfaction (Soyer, Rovenpor, Kopelman, Mullins, & Watson, 2001), toxic leadership (A. A. Schmidt, 2008), and a host of other negative work attitudes and outcomes.

This relationship, however, is far from certain or being universally supported empirically. Hogan and Kaiser (2005), for example, suggested that elevated narcissism results in quicker promotion, perhaps because narcissists engage in a far greater amount of self-promotion (De Vries & Miller, 1986), impression management (Vohs, Baumeister, & Ciarocco, 2005), and organizational politicking (Vredenburgh & Shea-VanFossen, 2009) to curry favor with superiors. Narcissism creates poor-quality exchanges and results in negative perceptions about the individual and tension within the workplace, but narcissists are not necessarily unproductive workers and may even excel when in positions of authority (W. K. Campbell, Hoffman, Campbell, & Marchisio, 2011). Narcissists may be dissatisfied in their place of employment if they feel they are not receiving all the credit they are due, but the high level of self-approbation of narcissists tends to leave them relatively pleased with their work and causes them to overestimate their acceptance by others. Chatterjee and Hambrick (2007) suggested that narcissism can, in some cases, benefit not only the narcissist but the organization as a whole.

The link between narcissism and CWB, in contrast, is less uncertain. Theory and research align in suggesting that narcissists' sense of entitlement and belief that the usual standards do not apply to them increase the likelihood of a variety of CWB, including embezzlement, workplace incivility, bullying, aggression, and white-collar crime (Bogart, Benotsch, & Pavlovic, 2004; Penney and Spector, 2002). Hence, we predict the following:

Hypothesis 2a: Narcissism will negatively relate to job performance.

Hypothesis 2b: Narcissism will positively relate to CWB.

Psychopathy and Work Behavior

Despite the fearsome label of the DT's third element—psychopathy—estimates suggest that as many as three million employees and employers could be classified as fully expressing psychopathy (Babiak & Hare, 2006; Babiak, Neumann, & Hare, 2010). As with Machiavellianism and narcissism, some individuals who are psychopathic in their personal orientation prosper in business and corporate settings, particularly if their work requires a rational, emotionless behavioral style; a consistent focus on achievement even if that achievement comes at the cost of harm to others; a willingness to take risks; and the social skills of the charismatic (DePaulo, 2010; Yang & Raine, 2008). In fact, in some cases, the qualities of the psychopathic individual may be consistent with the mission and vision of the overall organization. In an organized criminal enterprise, for example, the emotionless, power-oriented, aggressive psychopath may be viewed as a good corporate citizen, provided these qualities are displayed toward targets of the organization rather than the membership and leadership of the organization (Wilson, 2010). Babiak and Hare's (2006) extensive analysis of psychopathology in the workplace (provocatively titled *Snakes in Suits*) suggested that 3.5% of top executives earn very high scores on standard measures of psychopathy.

Such situations are the exception, however, rather than the rule, for the psychopath's actions would more often than not be inconsistent with basic principles of social exchange, including reciprocity, trust, cooperation, and resource exchange. Psychopaths do not respect the rights of other people—both those they work with closely and those they are expected to serve—so if their performance evaluations depend, at least in part, on their ability to work well with others, their overall performance will likely be negative. Psychopathy is also associated with a lack of diligence and distain for deadlines and responsibilities, and in most business settings, this orientation will spell failure. Yet, of the three components of the DT, psychopathy should be most closely associated with violent, dangerous, and aggressive CWB. Individuals who are classified as psychopathic are overrepresented in prisons, for they are more likely than others to engage in illegal, criminal activities (Hare & Neumann, 2009).

We predict that psychopathy relates negatively and consistently to job performance and CWB. Their erratic behavior and failure to empathize with others makes individuals high in psychopathy less than ideal employees. Psychopaths are more likely to find little value in indirect rewards such as social regard and acceptance by coworkers. They are unconcerned with meeting social obligations and compliance with the norm of reciprocity. Their low affectivity means that they are less likely to be concerned for other people or to feel a sense of loyalty to their employer. Hence, social exchange theory predicts that they are less likely to maintain production standards, meet job requirements, or be concerned when given negative feedback about their shortcomings. Higher psychopathy levels almost certainly increase the amount of CWB engaged in by a worker. Impulsive destructiveness and decreased inhibitions likely increase the incidence of theft and sabotage. Their callousness toward the rights of others may also make them more likely to engage in interpersonal CWB such as bullying. We predict the following:

Hypothesis 3a: Psychopathy will negatively relate to performance.

Hypothesis 3b: Psychopathy will positively relate to CWB.

Moderators

We assume that the DT effects on performance and CWB are generally negative, but because these traits manifest their negative effects by disrupting social exchange processes, situational factors likely moderate their impact on these work outcomes. Drawing on previous research and working within the limitations imposed by the available data, for each element of the DT we consider the moderating effects of two additional variables: authority and ingroup collectivism (IGC).

Authority. The negative effects of the DT on performance and CWB likely depend, in part, on the individual's position in the organization's hierarchy, for behavioral tendencies that are viewed as relationally deviant when displayed by a coworker or subordinate may be considered appropriate or even admirable when enacted by someone in a position of authority. Specifically, many of the qualities of Machiavellianism and psychopathy are consistent with the role demands of leadership or management: Skill in handling people, political and organizational savvy, detachment, and the capacity to make decisions on the basis of objective standards rather than loyalty, trust, or emotions are frequently mentioned in laypersons' and experts accounts of leadership effectiveness (e.g., Dorfman, Hanges, & Brodbeck, 2004; Offermann, Kennedy, & Wirtz, 1994). So long as authorities are sufficiently adept at masking their more socially aversive interpersonal qualities (such as the lack of integrity), then their behavioral tendencies may enhance their organizational effectiveness and obviate their need to engage in CWB (Ray & Ray, 1982). In consequence, as Jones and Paulhus (2009) suggested, it may not be that authority dampens the toxic effects of Machiavellianism and psychopathy but rather that the attainment of authority indicates one is capable of suppressing or hiding many of the relationally damaging behaviors associated with these syndromes. We therefore expect that the negative relations between Machiavellianism and psychopathy and work behavior (i.e., lower performance, higher CWB) will be weaker for those in positions of authority and stronger for those individuals who have not secured positions of influence.

Aspects of a narcissistic personality may also promote organizational success, but the performance-enhancing aspects of this trait tend to decline as individuals rise to positions of authority (Brunell et al., 2008). Studies of narcissism are relatively consistent in their suggestion that the narcissist's extraversion, need for control and domination, and high level of self-confidence are often viewed positively when displayed by those on their way up in an organization, but that narcissists tend to derail once they are in positions of authority (Judge, Piccolo, & Kosalka, 2009). In particular, their penchant for engaging in self-serving claims of responsibility, lack of interest in feedback from others, tendency toward self-promotion, arrogance, and displays of temper are detrimental in a leadership or authoritative role (Hogan & Hogan, 2002). When in a position of authority, narcissists regularly belittle their subordinates and exploit their insecurities in an attempt to minimize negative feedback and create dependencies (House & Howell, 1992). Thus, we expect the negative effects of narcissism to become even stronger in positions of authority. In sum, we hypothesize the following:

Hypothesis 4a: Authority will weaken the negative association between Machiavellianism and work behaviors.

Hypothesis 4b: Authority will strengthen the negative association between narcissism and work behaviors.

Hypothesis 4c: Authority will weaken the negative association between psychopathy and work behaviors.

Ingroup collectivism. We also expect that the culture where the worker is embedded will moderate the effects of the DT on work behavior. Taras, Kirkman, and Steel (2010) demonstrated the importance of culture to many work outcomes including organizational commitment and citizenship behavior and emphasized that culture exists at multiple levels of analysis. Our interest in culture is as a group-level moderator of the relation between individual DT traits and work behavior. Culture has been shown to moderate a variety of workplace relations such as leadership (Kim, Dansereau, Kim, & Kim, 2004), innovation (Hoffman & Hegarty, 1993), and expatriate adjustment (Waxin, 2004). One particular dimension of culture relevant to the DT and work behaviors is IGC. Cultures high in IGC emphasize duty and loyalty to the organization and its members, cohesiveness among coworkers, and relatedness among peers, (House, Hanges, Javidan, Dorfman, & Gupta, 2004). Collectivist cultures place great emphasis on norms of reciprocity (Van Dyne, Vandewalle, Kostova, Latham, & Cummings, 2000) and are less likely to tolerate the social exchange violations of the DT. Manipulation of coworkers, self-promotion, and antisocial behavior are interpreted as disloyalty to the ingroup and sanctioned accordingly. Because our interest is in the reaction to DT-inspired behavior rather than culture's influence in creating DT behavior, we operationalize IGC as the culture where the sample was drawn (i.e., where the participants work). Thus, the moderator tests the effect of the culture that the individual workers are currently embedded in and not their culture of origin. We expect that cultures high in IGC will show the strongest deleterious effects of the DT on work behaviors. Thus, we hypothesize the following:

Hypothesis 5a: As IGC increases, the association between Machiavellianism and work behaviors will strengthen.

Hypothesis 5b: As IGC increases, the association between narcissism and work behaviors will strengthen.

Hypothesis 5c: As IGC increases, the association between psychopathy and work behaviors will strengthen.

Interrelations Among the DT Elements

Machiavellianism, narcissism, and psychopathy are distinct constructs, but they share several common features. All three traits are typified by a high degree of selfishness and a willingness to put one's own needs ahead of others. All three are socially repugnant (hence their grouping), and as a result they are often deliberately hidden from others rather than openly expressed. Machiavellians

and psychopaths use social skill and superficial charm to hide true intentions, and even a narcissist will occasionally appear humble if only to elicit praise from others. As well as concealing their true selves from others, those high in any one of the DT traits likely share a certain degree of self-deception. For those high in narcissism, self-deception is ego defense. Machiavellians see themselves as realistic and rationalize behaviors such as backstabbing a colleague as preemptive or conforming to the norms of an aggressive workplace.

These commonalities have led some researchers to suggest that their overlap is so substantial that they are indicators of a single latent construct, rather than independent personality traits. Past researchers examined the relative fit of unitary and three-component models empirically, often using factor analysis and structural equation modeling (e.g., Jonason & Webster, 2010). The current study's contribution to this debate, in contrast, lies in its ability to identify empirically patterns of association that are unique to each element of the DT, as well as associations that are shared across them. In general, given previous research into these personality traits, we predict that the three will be intercorrelated, for we consider the DT to be a set of agentic interpersonal tactics designed to extract resources from conspecifics. Specifically, we predict the following:

Hypothesis 6a: Machiavellianism will positively relate to narcissism.

Hypothesis 6b: Machiavellianism will positively relate to psychopathy.

Hypothesis 6c: Narcissism will positively relate to psychopathy.

Collective Effects of the DT

In addition to the bivariate relations between each DT trait and the two work behaviors, we also sought to understand their collective effects. Unfortunately, despite their many commonalities, little research to date has examined the simultaneous effects of Machiavellianism, narcissism, and psychopathy, but there are ways to test the collective effects through meta-analysis. In judging whether the effects of the DT significantly explain variance in the two work behaviors, we use Cohen's (1988) nomenclature and speak of effects in threshold terms of small ($R^2 = .01$), medium/moderate ($R^2 = .09$), and large ($R^2 = .25$). Given that there are many existing personality measures that yield small effect sizes, we put forth that for the DT to be considered a valuable addition to the literature, it should collectively demonstrate at least a moderate effect.

Method

Literature Search

We searched six databases—ABI Inform, AllAcademic.com, Google Scholar, ProQuest Dissertations and Theses, PsycINFO, and Web of Science—for published and unpublished research using various combinations of the following keywords: *Machiavellian, Machiavellianism, MACH-IV, MACH-V, Kiddie-Mach, Nach-C, Nach-E, Supernumerary Personality Inventory, narcissism, overt narcissism, covert narcissism, Narcissistic Personality Inventory, State-Trait Grandiosity Scale, Psychological Entitlement Scale, Wink-Gough Narcissism scale, sub-clinical psychopathy, MMPI, CPI, Psychopathic Personality Inventory, Social Personality Inventory, Self Reported Psychopathy Questionnaire,* and *psychopathy checklist.* We also conducted this keyword search in German, French, and Spanish. To identify additional studies, we posted requests for unpublished studies and data to various e-mail Listservs (e.g., SPSP-Listserv, HR-DIV, OB-LIST). We also reviewed abstracts of recent Academy of Management and Society for Industrial and Organizational Psychology conferences (2006–2010) and examined the reference sections of meta-analyses, narrative reviews, and bibliographies on the dimensions of the DT (e.g., Decuyper, De Pauw, De Fruyt, De Bolle, & De Clercq, 2009; Fehr et al., 1992; Holtzman & Strube, 2009; Mudrack, 1990; Ruffo-Fiore, 1990; Ruiz, Pincus, & Schinka, 2008). The study search was finalized in April 2011.

Inclusion Criteria

To be included in the meta-analysis, a study needed to examine a DT trait dimension at the individual level of analysis. We found no instances where peer or supervisor ratings were used to measure DT traits, so in all cases the DT traits were self-reported. For job performance, we only included self-reports when the outcome was objective (e.g., "What were your sales for this quarter?"). When subjective, we required a supervisor, peer, or subordinate rating. For CWB, we coded for both CWB scales (e.g., Bennett & Robinson, 2000) and collections of CWB (e.g., number of complaints filed against employee, days of unexcused absences). If sufficient information was not available in a primary study, we requested effect sizes from authors before excluding the study from our sample. We eliminated clinical samples, prisoners, and children. References that were initially considered but eventually excluded from the meta-analysis are available online as supplemental materials.

Coding of Studies

We did not code proxies of the DT, nor did we include performance or counterproductivity outside of the workplace. As a result, we excluded academic dishonesty, "deviant" life behaviors, and results derived from laboratory experiments. All three DT traits have varying degrees of multidimensionality reported in the literature. Our interest was in the total score of the DT measure to each correlate, so when a study reported only dimension-level correlates, we averaged the dimensions to create a mean effect size and used equations outlined in Borenstein, Hedges, Higgins, and Rothstein (2009, p. 228) to calculate the variance of the composite correlation. Composite scores were only created when all dimensions of the measure were available.

In the cases where a single study used multiple, independent samples, we included effect sizes from each sample as long as it met the aforementioned inclusion criteria. Using detection heuristics put forth by Wood (2008), we identified and eliminated duplicate samples reported in two or more publications. When two or more articles were determined to use the same sample, we

recorded each article's unique effect sizes and then randomly selected one of the articles to retain the common effect sizes.

Outlier Detection

We used Huffcutt and Arthur's (1995) sample-adjusted meta-analytic deviancy (SAMD) statistic for identifying outliers in the meta-analyses, with corrections proposed in Beal, Corey, and Dunlap (2002). The original SAMD was slightly biased due to the nonnormality of correlations that result from being constrained to an absolute value of 1.0. Beal et al. recommended the Fisher *Z* as the effect size and greater caution when using the proposed cutoff values (i.e., the .05 level). We calculated SAMD statistics for each analysis with the Fisher *Z* as the effect size and used critical values at the .001 level. Considering that the SAMD was only slightly biased, this is a very conservative test, but if the hypothesized moderators are important, their influence could shift an effect size far enough away from the mean to be misclassified as an outlier when in fact it should be included in the analysis. Of the 1,044 effect sizes, 47 effects were determined to be outliers. We returned to these articles to attempt to see if there were errors in the coding. In all cases, we found no coding or transcription errors, and the effect sizes from these articles were eliminated from the data set.

Meta-Analytic Procedure

Techniques and corrections. We drew from both Hunter and Schmidt (2004) and Lipsey and Wilson (2001) for the meta-analyses. The combination of these techniques allows for psychometric corrections, continuous moderators, and multivariate meta-regressions. Hunter and Schmidt equations were used to individually correct correlations for unreliability and report the mean corrected effect sizes and accompanying statistics (e.g., credibility intervals). Lipsey and Wilson techniques were applied to the meta-regressions and subgroup analyses. When possible, corrections for unreliability were performed locally (i.e., at the level of the individual sample), but when that was not possible, the correction was accomplished using the mean reliability from the reliability distribution generated from the primary samples. The average reliabilities for Machiavellianism, narcissism, and psychopathy were adequate ($\alpha = .75$, $SD = .09$; $\alpha = .83$, $SD = .05$; and $\alpha = .82$, $SD = .06$, respectively).

Moderators. The determination of whether a relation is moderated is most often accomplished through some test statistic or rule of thumb. Because all tests of moderation in meta-analysis contain varying degrees of bias, the use of multiple tests is recommended (Geyskens, Krishnan, Steenkamp, & Cunha, 2009). We use three in this meta-analysis. The first is the amount of variance attributable to sampling error. This ratio provides an estimate of the degree of heterogeneity among the effect sizes that cannot be explained by sampling error alone. Our second test of moderation, the I^2 (Higgins, Thompson, Deeks, & Altman, 2003), is the ratio of true heterogeneity to total variation in observed effect sizes. The I^2 ranges from zero to one, with higher values indicating greater heterogeneity of effect sizes and increased likelihood of moderators. Cutoffs have been proposed for both statistics, and less than 75% of the variance being attributable to sampling error and I^2 values greater than .25 indicate likely moderation (Higgins et al., 2003; Hunter & Schmidt, 2004). Our final indicator is the width of the credibility intervals. Wider intervals indicate potential moderation (Whitener, 1990).

Tests of moderators. We used meta-analytic regression techniques for both the individual and simultaneous tests. This technique avoids many of the limitations related to assuming orthogonality among the moderators and artificial dichotomization of continuous variables (Steel & Kammeyer-Mueller, 2002). We used the random-effects, restricted maximum-likelihood approach as advocated in Thompson and Sharp (1999). Viechtbauer (2005) reported that "the restricted maximum likelihood estimator strikes a good balance between unbiasedness and efficiency and, therefore, could be generally recommended" (p. 291).[1]

Multivariate tests. Hypotheses 6a–6b dealt with the collective effects and relative contribution of the DT in explaining performance and CWB. We tested these hypotheses using both multivariate meta-regression techniques and dominance analysis (J. W. Johnson & LeBreton, 2004). The inclusion of dominance analysis allows for meaningful and interpretable estimates of variable importance even under high collinearity conditions (J. W. Johnson & LeBreton, 2004). In line with previous meta-analyses (e.g., Carr, Schmidt, Ford, & DeShon, 2003), we computed the standard errors associated with the regression weights by using the sample size of the smallest relation between effects.

Tests of publication bias. The *Publication Manual of the American Psychological Association* (American Psychological Association, 2010) encourages the examination of potential publication bias in meta-analyses. However, many of the more recently developed publication bias methods can themselves be biased when moderators are present (Peters, Sutton, Jones, Abrams, &

[1] We thank an anonymous reviewer for pointing out that meta-regression techniques contain three key assumptions worth noting. First, all relations are corrected for unreliability in both the DT and the work outcomes. Second, corrections for unreliability are consistent across type (e.g., internal consistency, interrater reliability). Finally, the relations are not range restricted. The indicator of range restriction is a standard deviation smaller than that found in the population (often operationalized as the standard deviation of the normative sample for the measure). For both the dominant measures of narcissism—NPI, ($\bar{u}$) = 6.60—and Machiavellianism—MACH-IV (Christie & Geis, 1970), ($\bar{u}$) = 13.03—the observed standard deviations in our data were generally similar to those reported for the normative samples in the development of these measures ($U = 6.66$; Raskin & Terry, 1988; and $U = 14.30$; Christie & Geis, 1970, respectively). Ratios of less than 1.0 between the observed standard deviation and population standard deviation indicate the degree of range restriction. The ratios for narcissism and Machiavellianism were .99 and .91, respectively. With a ratio of observed to population standard deviation of .77, only the primary measure of psychopathy, the Minnesota Multiphasic Personality Inventory psychopathic deviate scale (MMPI-pd; Hathaway & McKinley, 1989), showed a substantial difference between the mean sample standard deviation, ($\bar{u}$) = 7.68, and the population standard deviation reported in the technical manual ($U = 10.0$; Graham, 2006). Given that the norming of the MMPI-pd included a significant number of clinical participants, it is not surprising that the working population shows a more restricted distribution. We believe that correcting for range restriction on this variable would not be appropriate since our interest is in the working population of adults rather than the entire population that includes those located in mental health facilities. At this time, we do not believe we have enough evidence to correct for range restriction, but future research must address the possibility of both direct and indirect range restriction (F. L. Schmidt, Shaffer, & Oh, 2008).

Rushton, 2007; Terrin, Schmid, Lau, & Olkin, 2003). We tested for the possibility of publication bias and found little evidence of a systematic bias.[2]

Results

Table 1 provides a complete list of all studies that were included in the meta-analyses. Our final sample consisted of 186 articles, reporting 245 separate samples, with a total of 43,907 participants. Eleven nations were represented, but the preponderance of those studied (75%) resided in the United States. The study of DT variables has increased steadily, with three articles from the 1950s, three from the 1960s, 30 from the 1970s, 37 from the 1980s, 36 from the 1990s, 67 between 2000 and 2009, and 10 studies from 2010 through April 2011. Of the 146 samples involving performance or CWB, 60 samples were from law enforcement, 11 were from managerial settings, 17 were from education, 11 were from sales/marketing, nine were from the military, three were from medicine, four were from other industries, and 31 samples came from mixed populations of workers.

Hypotheses 1–3: The Dark Triad and Workplace Behavior

Table 2 reports the observed and corrected effect sizes for the association of Machiavellianism, narcissism, and psychopathy with performance and CWB, as well as confidence intervals, credibility intervals, percentage of variance attributable to sampling error, the I^2, and tests of moderation. The main effects (r and r_c) listed in the tables are overall effects, which our moderators (shown on the right side) are then tested against.

Machiavellianism. As Hypotheses 1a and 1b predicted, increases in Machiavellianism were associated with declines in performance and increases in CWB; the r_c values, as shown in Table 2, were −.07 and .25, respectively. However, it should be noted that despite being statistically significant, the Machiavellianism–job performance relation is a small effect, and the 80% credibility interval includes zero, suggesting that the negative relation is not particularly consistent across subpopulations. In contrast, although the effect size for CWB still indicates moderation, the direction is fairly robust, with credibility intervals that support that Machiavellianism is positively associated with CWB in more than 90% of the population effect sizes.

Narcissism. We did not find support for Hypothesis 2a's prediction regarding job performance, but Hypothesis 2b's prediction of a relation between narcissism and CWB was supported; the r_c values for performance and CWB, as shown in the Table 2, were −.03 and .43, respectively. Thus, narcissists' inflated evaluations of their work did not correspond to objective indicators of work quality. The positive association between narcissism and CWB was, however, unexpectedly large. The credibility intervals, indices of sampling error, and I^2 suggested the narcissism–CWB relation was likely moderated, but we found no evidence of moderation for the narcissism–job performance relation.

Psychopathy. Hypotheses 3a and 3b were supported by the meta-analytic results shown in Table 2: Psychopathy was significantly related to job performance ($r_c = -.10$) and CWB ($r_c = .07$). However, the relations obtained in support of Hypotheses 3a and 3b were relatively small. In all, the results for psychopathy were underwhelming, with the variance explained in performance and CWB by psychopathy totaling 1% and 0.5%, respectively. In sum, the extant literature suggests that psychopathy is not a particularly powerful predictor of the two work behaviors tested here. In terms of variability in effect sizes, with the exception of the I^2 value for the psychopathy–job performance relation, all other tests indicated moderation.

Tests of moderation. Hypotheses 4a–4c predicted that authority would moderate the relations between the DT and work behaviors in differing ways. Jobs that offered Machiavellians and psychopaths authority would weaken the relations to work behaviors, and jobs that offered authority would strengthen the narcissism relations. The results did not support authority as a moderator of Machiavellianism and work behaviors (Hypothesis 4a), but we did find partial support for both Hypotheses 4b and 4c. Psychopathy showed a significantly weaker relation for CWB ($\beta = -.71$, $p < .001$) among samples of workers in authority roles. That is, the relation between psychopathy and CWB was weaker when the job afforded workers a certain degree of authority. On the other hand, in authority roles, narcissism showed a significantly stronger relation to job performance. For individuals in positions of authority, such as managers, leaders, police, and correctional officers, the higher their level of narcissism, the lower the quality of their work product. A caveat worth noting is that although authority was a statistically significant moderator, the overall relations between the DT and job performance were quite small, and we caution against overgeneralizing (e.g., psychopaths in authority are productive workers).

We predicted that because cultures high in IGC are less tolerant of social exchange violations, the DT's toxic effects on work behavior would be amplified in these cultures with stronger negative relations to performance and stronger positive relations to CWB (Hypotheses 5a–5c). However, IGC did not moderate any of the Machiavellianism and psychopathy relations, and thus, we failed to support Hypotheses 5a and 5c. We did partially support Hypothesis 5b, albeit at the .10 level, as IGC moderated the relations between narcissism and both work outcomes. As predicted, narcissism was negatively associated (although weakly) with job performance in cultures that were higher in IGC ($\beta = -.38$, $p < .10$). Unexpectedly, this association reversed for CWB. As IGC increased, narcissists engaged in less CWB ($\beta = -.55$, $p < .10$).

In all, we found partial support for three of the six moderator hypotheses. The simultaneous analyses showed that the two moderators differed significantly in their collectively accounting for variance in effect sizes ranging from no effect ($R^2 = .00$) to a moderately large effect ($R^2 = .31$). The moderators accounted for the most variance in narcissism's relations to job performance and CWB. Despite finding some support for the moderators, it is important to recognize that these are tentative findings and that, unlike the overall relations, these moderator effects can be strongly influenced by the addition or deletion of a small number of studies. The significance or nonsignificance of a moderator test should not

[2] Due to space constraints, we do not include the 12 individual publication bias tests, but these results are available from Ernest H. O'Boyle, Jr., along with more detailed information of some of the more technical aspects of the analysis such as the reliability distributions.

Table 1
List of Included Articles

Study	*N*	Sample	Nationality	Dark Triad construct	Work outcome
Abramson (1973)	10	Graduate students	US	M	JP
Ackerman et al. (2011)	200, 353	Undergraduates	US	MNP	
Ali, Amorim, & Chamorro-Premuzic (2009)	84	Undergraduates	UK	MP	
Al-Jafary, Aziz, & Hollingsworth (1989)	70	Managers	Saudi Arabia	M	JP
Andrea & Conway (1982)	65	School principals	US	M	JP
Ashton, Lee, & Chongnak Son (2000)	610	Undergraduates	Korea	MP	
Aziz (2004a)	80	Car salespeople	US	M	JP
Aziz (2004b)	77, 72	Salespeople	US	M	CWB, JP
Balch (1977)	100	Police cadets	US	P	JP
Balestri (1999)	46, 103	Undergraduates	US	MN	
Bartol (1982)	102	Police officers	US	P	JP
Bartol (1991)	600	Police officers	US	P	JP
Bartol, Bergen, Volckens, & Knoras (1992)	60	Police officers	US	P	JP
Bennett & Robinson (2000)	133	Workers	US	M	CWB
Beutler, Storm, Kirkish, Scogin, & Gaines (1985)	65	Police officers	US	P	JP
Biberman (1985)	42	MBAs	US	M	JP
Biggers (1977)	183	Student teachers	US	M	JP
Biscardi & Schill (1985)	97	Undergraduates	US	MN	
Blachford (1985)	54	Directors in a care facility	US	M	JP
Black (1973)	40	Teachers	US	M	JP
Blair, Hoffman, & Helland (2008)	151	Supervisors	US	N	JP
Blunt (1982)	27	Police officers	US	P	JP
Boes, Chandler, & Timm (1997)	158, 322, 43, 136, 182, 224	Police officers	US	P	CWB
Braithwaite, Ahmed, & Braithwaite (2005)	824	Workers	Bangladesh	N	CWB
Brayfield & Marsh (1957)	50	Farmers	US	P	JP
Brewster & Stoloff (2003)	112	Police officers	US	P	JP
Brummel (2008)	58, 207, 288, 547	Workers, undergraduates	US	NP	CWB, JP
Budd (1994)	120	Graduate students	US	N	JP
Burton (2007)	134	Students	US	N	CWB
Caillouet, Boccaccini, Varela, Davis, & Rostow (2010)	901	Police officers	US	P	CWB, JP
Caldwell, Caldwell, Stephens, & Krueger (1993)	287	Helicopter pilots	US	P	JP
J. Campbell et al. (2009)	472	Twins	Canada	MNP	
Carnahan & McFarland (2007)	91	Undergraduates	US	MN	
Champion (2001)	292	Undergraduates	US	MN	
Charlier (1977)	54	School principals	US	M	JP
Chatterjee & Hambrick (2007)	111	CEOs	US	N	JP
Cockey (1984)	41	School principals	US	M	JP
Connors (2009)	360	Special forces candidates	US	P	JP
Cortina, Doherty, Schmitt, Kaufman, & Smith (1992)	314	Police cadets	US	P	JP
Corzine, Buntzman, & Busch (1988)	90	Managers	US	M	JP
Cox (2008)	429	Teachers	US	N	JP
Crotts, Aziz, & Upchurch (2005)	85	Salespeople	US	M	JP
Dahling,Whitaker, & Levy (2009)	323	Workers	US	MNP	CWB, JP
Daley (1978)	571	Police officers	US	P	CWB
Dattner (1999)	91	Executive MBAs	US	N	JP
Detrick & Chibnall (2002)	138	Police cadets	US	P	JP

(*table continues*)

Table 1 (*continued*)

Study	*N*	Sample	Nationality	Dark Triad construct	Work outcome
Dolan (1989)	55	Police officers	US	P	JP
Dorner (1991)	103	Police officers	US	P	JP
Duffy, Shiflett, & Downey (1977)	216	Special forces (army)	US	M	JP
Durand & Nord (1976)	34	Managers	US	M	JP
Elam (1983)	85, 99	Police officers	US	P	JP
Enright (2004)	218	Police officers	US	P	CWB, JP
Eppler (1996)	273	Real estate agents	US	M	JP
Ferris et al. (2005)	93, 148, 184, 184	Lawyers, managers, undergraduates, school administrators	US	M	JP
Flanagan (1961)	147	Student teachers	US	P	JP
Funk (1997)	133	Military special agents	US	P	CWB, JP
Gable & Dangello (1994)	48	Managers	US	M	JP
Gallagher (2009)	298	Workers	US	N	CWB
Gardner, Scogin, Vipperman, & Varela (1998)	23	Police officers	US	P	CWB, JP
Gelbart (1978)	44	Hostage negotiators	US	P	JP
Geraghty (1986)	140	Police officers	US	P	JP
Giacalone & Knouse (199)0	274	Undergraduates	US	M	CWB
Giebink & Stover (1969)	52	Child-care professionals	US	P	JP
Goffin & Anderson (2007)	198, 204	Financial managers	Canada	N	JP
Goh (2006)	147	Workers	US	M	CWB
Gordon & Platek (2009)	24	Undergraduates	UK	MNP	
Gottlieb & Baker (1974)	70	Police officers	US	P	JP
Griffith (1991)	374	Corrections officers	US	P	JP
Grimsley (1985)	30	School principals	US	M	JP
Hargis (2006)	480	Undergraduates	US	MNP	
Hargrave & Hiatt (1989)	579	Police cadets	US	P	CWB, JP
T. W. Harrell (1987)	164	MBAs	US	P	JP
W. A. Harrell & Hartnagel (1976)	84	College students	US	M	CWB
Heinze (2003)	66	MBAs	US	MP	
Heisler & Gemmill (1977)	34, 52	Managers	US	M	JP
Helland (2006)	111, 124, 125	Undergraduates, executives	US	MNP	
Hess (1972)	122	Police officers	US	P	CWB, JP
Hiatt & Hargrave (1988a)	55	Police officers	US	P	JP
Hiatt & Hargrave (1988b)	106	Police officers	US	P	CWB
Hill (1999)	58, 112, 170, 288	Undergraduates	International	MNP	
Hodson, Hogg, & MacInnis (2009)	192	Undergraduates	Canada	MNP	
Hogan (1971)	42, 141	Police officers	US	P	JP
Holden (2008)	156	Undergraduates	Canada	P	CWB
Hollon (1975)	211	Faculty	US	M	JP
Hollon (1983)	75	Managers	US	M	JP
Hollon (1996)	65	Managers	US	M	JP
Hunt & Chonko (1984)	1,076	Marketers	US	M	JP
Hwang (1988)	98	Police officers	US	P	CWB, JP
Inwald & Brockwell (1991)	307	Security personnel	US	P	JP
Inwald & Shusman (1984)	143, 596	Corrections officers	US	P	JP
Jackson (1973)	74	Salespeople	US	M	JP
Jaffe, Nebenzahl, & Gotesdyner (1989)	28	Managers	Israel	M	JP
Jakobwitz & Egan (2006)	82	General population	UK	MNP	
Jansen & Garvey (1973)	55	Clergymen	US	P	JP
R. E. Johnson et al. (2010)	32, 56, 335, 421	Workers	US	N	JP

Table 1 (*continued*)

Study	*N*	Sample	Nationality	Dark Triad construct	Work outcome
Jonason, Li, Webster, & Schmitt (2009)	224	Undergraduates	US	MNP	
Jonason & Webster (2010)	336	General population	International	MNP	
Judge, LePine, & Rich (2006)	131, 134	Beach patrol members, MBAs	US	N	JP
Kanner (1974)	40	School principals	US	M	JP
Kauder (1999)	30	Police officers	US	P	JP
Kessler et al. (2010)	465, 507	General population	US	M	CWB
Kiazad, Restubog, Zagencyzk, Kiewitz, & Tang (2010)	92, 200	Supervisors	International	M	CWB
Kleiman (1978)	218	Police officers	US	P	JP
Kleiman & Gordon (1986)	132	Police officers	US	P	JP
D. J. Knapp, Burnfield, Sager, Waugh, & Campbell (2002)	94, 96, 178, 186	Soldiers	US	M	JP
D. J. Knapp, McCloy, & Heffner (2004)	435, 499, 754	Soldiers	US	M	JP
T. S. Knapp, Heffner, & Campbell (2003)	370, 542	Soldiers	US	M	JP
Langsam (1990)	42	School principals	US	M	JP
Lee & Ashton (2005)	164	Undergraduates	Canada	MNP	
Lima (2004)	91	Mentors, protégés	US	M	JP
Lobene (2010)	342	Workers	US	N	CWB
MacNeil (2008)	159	Undergraduates	Canada	MNP	
Mandel (1970)	114	Police officers	US	P	CWB, JP
Mass (1980)	18	Police officers	US	P	JP
Matyas (1980)	160	Police officers	US	P	CWB, JP
Matyas (2004)	115	Police officers	US	P	CWB, JP
McDonald et al. (1994)	16, 79	Doctors	US	P	JP
McDonough & Monahan (1975)	91	Deputies	US	P	JP
McHoskey et al. (1999)	209, 214	Undergraduates	US	MN	
McHoskey, Worzel, & Szyarto (1998)	48, 107, 125	Undergraduates	US	MNP	
Michaelis & Tyler (1951)	56	Student teachers	US	P	JP
Mills & Bohannon (1980)	49	Police officers	US	P	JP
Mullins & Kopelman (1988)	272	General population	US	MN	
Murray (2009)	164	Undergraduates	US	MP	
Nathanson (2001)	79, 250	Undergraduates	Canada	MNP	
Nathanson (2008)	57, 142, 188	Undergraduates	Canada	MNP	
Nathanson, Paulhus, & Williams (2006a)	279	Undergraduates	Canada	MP	
Nathanson, Paulhus, & Williams (2006b)	291, 150	Undergraduates	Canada	MNP	
Neal (1986)	12	Police officers	US	P	JP
O'Connor & Morrison (2001)	130, 369	Mounted police	Canada	M	JP
Oh (2010)	42, 66	Workers	US	N	JP
O'Neill & Hastings (2011)	149	Workers	Canada	M	CWB
Palmatier (1996)	174	Police officers	US	P	JP
Paulhus (1998)	89, 124	Undergraduates	US	N	JP
Paulhus & Williams (2002)	245	Students	US	MNP	
Paulhus, Williams, & Harms (2001)	244	Undergraduates	Canada	MNP	
Paunonen, Lönnqvist, Verkasalo, Leikas, & Nissinen (2006)	199	Military cadets	Finland	MN	JP
Penney (2003)	299	Workers	US	N	JP
Penney & Spector (2002)	215	Workers	US	N	CWB
Plummer (1979)	131	Deputies	US	P	JP
PsyTech International (2000)	24, 30, 107, 231	Managers, sales staff, trainees, retail staff	UK	M	JP
Pugh (1985)	61	Police officers	Canada	P	JP
Ray & Ray (1982)	128	General population	Australia	MP	
Reyna (1982)	36	Academic staff	US	M	JP

(*table continues*)

Table 1 (*continued*)

Study	*N*	Sample	Nationality	Dark Triad construct	Work outcome
Ricks & Fraedrich (1999)	225	Salespeople	US	M	JP
Rostow, Davis, Pinkston, & Corwick (1999)	95	Police cadets	US	P	JP
Russell (1974)	66	Hockey players	Canada	M	JP
Sarchione, Cuttler, Muchinsky, & Nelson-Gray (1998)	218	Police officers	US	P	CWB
A. A. Schmidt (2008)	216	Students, workers	US	MN	CWB
Shaver (1980)	31	Police officers	US	P	CWB, JP
Shaw (1986)	132	Police officers	US	P	JP
Shephard (1973)	16	Nurses, psychiatrist	US	M	JP
Shultz (1993)	101	Stockbrokers	US	M	JP
Shusman, Inwald, & Landa (1984)	665	Corrections officers	US	P	CWB
Siegel (1973)	73	MBAs	Canada	M	JP
Simms (2007)	403, 446	Undergraduates	US	MN	
Smith & Griffith (1978)	66	Undergraduates	US	MP	
Soyer, Rovenpor, & Kopelman (1999)	199	Sales representatives	US	N	JP
Soyer, Rovenpor, Kopelman, Mullins, & Watson (2001)	190	General population and MBAs	US	MN	
Sparks (1994)	304, 719	Marketers	US	M	JP
Spielberger, Spaulding, Jolley, & Ward (1979)	49	Police officers	US	P	JP
Surrette, Aamodt, & Serafino (1990)	129	Police officers	US	P	JP
Sweda (1988)	190	Police officers	US	P	JP
Tesauro (1994)	46	Police cadets	US	P	JP
Tracy, Cheng, Robins, & Trzesniewski (2009)	137	Undergraduates	Canada	MN	
Turnbull (1976)	111	Salespeople	US	M	JP
Tziner, Meir, & Segal (2002)	314	Military officers	Israel	P	JP
Uno (1979)	230	Police officers	US	P	CWB
Uysal (2004)	71, 76, 79, 80	Undergraduates	International	MN	
Van Der Nest (2010)	134	Academic staff	South Africa	N	CWB
Vecchio (2005)	222	Supervisors	US	M	JP
Vernon, Villani, Vickers, & Harris (2008)	278	General population	US	MNP	
Volp & Willower (1977)	49	Superintendents	US	M	JP
Weisgerber (1951)	72	Nurses	US	P	JP
Weiss, Buehler, & Yates (1996)	77	Police officers	US	P	JP
Wells (1991)	102	Police officers	US	P	CWB
West (1988)	99, 101	Police officers	US	P	CWB, JP
Williams (2002)	114, 130, 356	Undergraduates	Canada	MNP	
Williams (2007)	107, 228	Undergraduates	Canada	MNP	
Williams, Nathanson, & Paulhus (2003)	274	Undergraduates	Canada	MNP	
Williams, Paulhus, & Hare (2007)	170	Undergraduates	Canada	MNP	
Wisniewski (2004)	91	Corrections officers	US	P	JP
Workowski & Pallone (1999)	27	Police officers	US	P	CWB, JP
Wright, Doerner, & Speir (1990)	135	Police officers	US	P	JP
Wrightsman & Cook (1965)	177	Undergraduates	US	M	CWB
Zagenczyk (2009)	156	Workers	Philippines	M	CWB

Note. *N* = sample size; M = Machiavellianism; N = narcissism; P = psychopathy; JP = job performance; CWB = counterproductive work behavior.

Table 2
Overall Analyses and Tests of Moderation Between the Dark Triad and Work Behavior

	Overall analyses								Tests of moderation			
Work behavior	*k*	*n*	*r*	95% CI	80% CV	r_c	% var *SE*	I^2	Auth.	IGC	Simult.	R^2
Job performance												
Machiavellianism	57	9,297	−.06**	[−.09, −.02]	[−.19, .08]	−.07	36.9	65.0	.00	.05	−.01/.05	.00
Narcissism	18	3,124	−.02	[−.06, .02]	[−.06, .02]	−.03	85.0	2.1	−.48*	−.38†	−.41/−.10	.23
Psychopathy	68	10,227	−.08***	[−.11, −.05]	[−.21, .04]	−.10	41.7	6.3	−.12	−.09	−.12/−.09	.02
Counterproductive work behavior												
Machiavellianism	13	2,546	.20***	[.12, .29]	[.02, .39]	.25	18.3	83.5	.08	.00	.18/−.14	.02
Narcissism	9	2,708	.35***	[.18, .51]	[.03, .66]	.43	4.0	97.7	−.17	−.55†	−.11/−.54	.31
Psychopathy	27	6,058	.06*	[.01, .11]	[−.10, .22]	.07	22.9	76.8	−.71***	—	—	—

Note. For IGC, there was no variance (all studies from the U.S.A.), and therefore, neither the IGC moderator test nor the simultaneous analysis was conducted (indicated by dashes in the table). *k* = number of studies; *n* = sample size; *r* = observed effect size; 95% CI = 95% confidence interval of *r*; 80% CV = 80% credibility interval of *r*; r_c = effect size corrected for unreliability; % var *SE* = percentage of variance attributable to sampling error; I^2 = heterogeneity statistic; Auth. = position of authority; IGC = ingroup collectivism; Simult. = simultaneous test of both moderators; R^2 = variance in effect sizes explained by moderators.
† $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

be taken as a certainty; rather, the moderator tests are only suggestive that culture and status play a potentially important role in the DT's relation to work outcomes.

Interrelations of the DT components. Hypotheses 6a, 6b, and 6c predicted that the traits that make up the DT would be positively interrelated, and r_c values shown in Table 3 support these predictions. Machiavellianism and narcissism tended to covary (r_c = .30), and the associations between psychopathy and Machiavellianism (r_c = .59) and narcissism (r_c = .51) were even more pronounced. The positive relation between Machiavellianism and narcissism suggests narcissists are more likely to use manipulative strategies to receive praise and maintain their inflated sense of self or that narcissistic tendencies are more prevalent among individuals who see themselves as skilled in their control of others through guile and cleverness. Psychopathy showed the strongest relations and, consistent with a social exchange model, suggesting that antisocial tendencies are an important part of viewing oneself as better than most and being willing to engage in deceitful tactics for one's own gain. Although clearly related, the results suggest that Machiavellianism, narcissism, and psychopathy are distinct constructs.

DT collective effects on work outcomes. In addition to the individual relations to job performance and CWB, we also wished to determine the extent to which the three DT traits collectively explain variance in performance and CWB. To test the collective effects of the DT on the work outcomes, we used meta-regression techniques that combine the effects found in Tables 2 and 3 to create a meta-analytically derived matrix for the regression and dominance analysis. Using these two techniques, we were able to calculate the collective effects of the DT on both job performance and CWB, the significance of the individual parameters, and the relative contribution of each DT trait.

Table 4 reports the results of the meta-regression and dominance analyses for both the observed and corrected correlations. The DT traits accounted for a statistically significant amount of the variance for job performance and CWB. However, the practical significance of the DT in relation to job performance is minimal, with only 1% of the variance in job performance explained ($R^2_{corrected}$ = .011) and only psychopathy being statistically significant ($\beta_{corrected}$ = −.105, $p < .001$). Given that there are many established predictors of job performance (e.g., general mental ability, structured interviews) that explain considerably more variance, we conclude that at present, the DT has limited value in the prediction of job performance.

The results for CWB were more substantial and support the importance of the DT's role in explaining negative work behavior. The DT explained a substantial amount of the variance ($R^2_{corrected}$ = .282), and all three traits were statistically significant. The model was dominated by narcissism ($\beta_{corrected}$ = .533, $p < .001$, relative weight = 67.2%), but Machiavellianism explained a substantial portion of the variance as well ($\beta_{corrected}$ = .321, $p < .001$, relative weight = 21.2%). Interestingly, psychopathy was significant, but in the opposite direction from the univariate results ($\beta_{corrected}$ = −.391, $p < .001$).

Table 3
Interrelations Between Dark Triad Constructs

Relation	*k*	*n*	*r*	95% CI	80% CV	r_c	% var *SE*	I^2
M–N	44	8,423	.23	[.21, .26]	[.16, .30]	.30	61.7	42.8
M–P	32	5,762	.46	[.42, .50]	[.33, .60]	.59	24.6	42.4
N–P	42	8,538	.42	[.39, .45]	[.32, .52]	.51	35.1	66.4

Note. M = Machiavellianism; N = narcissism; P = psychopathy; *k* = number of studies; *n* = sample size; *r* = observed effect size; 95% CI = 95% confidence interval of *r*; 80% CV = 80% credibility interval of *r*; r_c = effect size corrected for unreliability; % var *SE* = percentage of variance attributable to sampling error; I^2 = heterogeneity statistic.

Table 4
Results of Incremental Validity Tests

Work behavior	Dark Triad construct	Observed correlations				Corrected correlations			
		β	*SE*	Raw relative weights	Relative weights as a % of R^2	β	*SE*	Raw relative weights	Relative weights as a % of R^2
Job performance (n = 3,124)	Machiavellianism	−.030	.020	.002	29.2	−.017	.022	.003	23.5
	Narcissism	.018	.020	.000	3.4	.028	.021	.001	5.5
	Psychopathy	−.074**	.022	.005	67.5	−.105***	.024	.008	71.0
				R^2 = .007***				R^2 = .011***	
Counterproductive work behavior (n = 2,397)	Machiavellianism	.201***	.021	.034	20.7	.321***	.021	.060	21.2
	Narcissism	.385***	.021	.119	73.0	.533***	.020	.190	67.2
	Psychopathy	−.194***	.023	.010	6.3	−.391***	.024	.033	11.6
				R^2 = .163***				R^2 = .282***	

Note. n = smallest sample size of any correlation in analysis; β = standardized coefficient; *SE* = standard error of the estimate; R^2 = percentage of explained variance.
** $p < .01$. *** $p < .001$.

Psychopathy's relation to CWB is an unusual finding as it suggests that when included in a model with the other two DT traits, it is associated with reduced CWB. We see three potential explanations for this finding. Presented in the order of perceived likelihood, the first is statistical, the second, methodological, and the third, theoretical. The most likely explanation is a statistical one. Although uncommon in multiple regression and unlikely to replicate in primary studies (Bobko, 2001), the counterintuitive results of psychopathy may be due to a suppressor effect. Psychopathy showed moderate to strong relations to both narcissism and Machiavellianism (i.e., comorbidity) and a small relation to CWB. A weak predictor entered into a regression equation with other predictors with which it shares considerable variance can create a suppressor effect. Not only can the predictor become statistically significant, its direction may change as well.

The second explanation is methodological and has to do with the equivalence of the samples that make up each correlate in the meta-analytically derived matrix. The psychopathy samples contained a large number of authority positions (i.e., police officers, military, and prison guards) relative to Machiavellianism and narcissism. Authority moderated the psychopathy relation to CWB in ways that mitigated psychopathy's deleterious effects. That is, psychopaths in authority roles were engaged in less CWB than psychopaths in nonauthority roles. Therefore, it is possible that the counterintuitive effect is the result of nonequivalent samples in the psychopathy results.

The final explanation is theoretical and the least likely. Essentially, once the manipulativeness of Machiavellianism and egoism of narcissism are accounted for, psychopathy decreases CWB. What should be noted is that this positive effect only emerges after psychopathy has been residualized. Recommending the selection or retention of psychopaths in an organization is akin to recommending smoking as a weight loss strategy, for the beneficial effect of psychopathy would in most cases be outweighed by its costs. The meta-regression results only support the positive consequences of psychopathy after the toxic effects of the two other DT traits have been accounted for, and they are consistent with recent studies of what might be termed the *Dexter effect.* Dexter, a highly psychopathic (and actively delusional) serial killer in a popular television series, is nonetheless regarded as competent and responsible by his supervisors and friendly and supportive by his coworkers (see DePaulo, 2010; Wilson, 2010).

Discussion

This research evaluated the relevance of the three components of the DT—Machiavellianism, narcissism, and psychopathy—to two important work behaviors in applied psychology: job performance and CWB. Drawing from a social exchange perspective, we hypothesized that each of the DT traits would prompt individuals to act in ways that violate the basic social regulatory mechanisms of most work settings and, as a result, undermine job performance and increase CWB. Through a meta-analytic review, we confirmed five of our six hypotheses (Hypotheses H1a–H3b) concerning the deleterious influence of the DT: (a) Machiavellianism and psychopathy were associated with lower job performance, and (b) all three DT traits were significantly associated with increased CWB. However, the small effect sizes for job performance suggest that the DT as currently operationalized is better apt to explain dark

behavior, rather than positive behaviors such as task performance and citizenship behavior.

Our social exchange perspective also suggested that the strength of the DT relations would change in certain situations—for example, in positions of authority or when the organization was nested in a culture high in IGC. These expectations were supported by the meta-analytic results, but only in part. Machiavellianism's negative effects remained consistent across all situations: Machiavellians were less productive and more likely to engage in negative workplace behaviors no matter what their level of authority or the degree of collectivism in the organization where they worked.

The picture for narcissism was more complex. Focusing on performance, the findings are just as might be expected: The relatively small negative relation between narcissism and performance intensifies when narcissists occupy positions of authority and the organization stresses IGC. Despite some research suggesting that narcissists fare well when in positions of authority, their tendency to mistreat subordinates, ignore negative feedback, and promote their own interests undermines their overall effectiveness—and our findings support this conclusion. The negative relation between narcissism and performance was stronger for individuals in positions of authority. The adage "Power corrupts; absolute power corrupts absolutely" seems apt when discussing the handing of authority over to a narcissist. Narcissists also performed more poorly in organizations nested in cultures high in IGC, for the individualistic orientation of the narcissist is very much at odds with an emphasis on shared responsibility and collective strivings. We should note, however, that the overall effect between narcissism and job performance was small, and as evidenced by the indicators of moderation, there was little variability in effect sizes, suggesting that the magnitude of the authority effect may be slight and of little practical significance. More research is needed on the dynamics of the narcissistic authority figure and his or her subordinates.

These moderation effects held only on work performance. First, authority did not moderate the strength of the relation between narcissism and CWB. Second, the relation between narcissism and CWB actually became weaker as IGC increased. We tentatively offer an explanation that once an individual is accepted into the organization (i.e., ingroup), his or her selfish behaviors are better tolerated than they would be in cultures with low IGC.

IGC also failed to moderate the relations between psychopathy and the two work behaviors, but authority proved to be more important in understanding the relation between psychopathy and CWB. Authority weakened the relation between psychopathy and CWB, supporting that those with elevated psychopathy who still are able to rise within their organization are better able to control their impulsivity and antisocial tendencies. An alternative explanation is that psychopaths in authority roles report less CWB because they have found ways to express their dark behaviors that fall outside of the scope of many CWB measures. For example, a police officer with elevated psychopathy may not engage in typical CWB (e.g., theft, cyberloafing), but rather express antisocial tendencies in novel ways unique to the profession (e.g., provoke a suspect so as to use excessive force).

An additional contribution of the current work is that we supported the positive relations between the DT traits. Machiavellianism and narcissism were correlated moderately, and psychopathy showed strong relations to both Machiavellianism and narcissism. That all three traits are interrelated in a positive direction has been hypothesized before (e.g., Wu & LeBreton, in press), but of particular interest is that the strengths of the corrected correlations did not achieve a magnitude that would suggest that the DT traits are redundant. Despite DT traits relating to work outcomes in a consistent manner through reciprocity violations, the motivations and strategies of these violations are distinct.

The evidence of nonredundancy among the triad coupled with two DT traits related to job performance and all three traits related to CWB allowed us to move on to test the simultaneous effects of the DT. For job performance, the statistical significance of the model belies the very small amount of variance explained. At present, the DT explains little to no variance in job performance. However, the DT explained a significant portion of the variance in CWB. In the model, the strongest individual trait was narcissism as it accounted for 18.9% of the total 26.7% of variance explained, but Machiavellianism also explained a significant amount of variance (5.3%). Psychopathy was statistically significant, but in the opposite direction from what we hypothesized. Although we offer both methodological and theoretical explanations for why this was the case, the most likely explanation is a suppressor effect.

Limitations and Future Directions

Although we see our research as advancing the field in a number of ways, several limitations should be noted. First, most of the effect sizes reported indicated moderation. The particular set of moderators we chose performed moderately well, but a different set of moderators may better explain the variance in effect sizes. Future research should continue to seek out how the DT interacts with both individual traits and environmental features to influence behavior. For example, although we found a negative correlation between Machiavellianism and job performance, a likely moderator of this relation is general intelligence. Those who not only possess a desire to manipulate others but also possess the ability to reason and project the probabilities of their manipulation with complex relationships and consequences may in fact achieve very high levels of performance. In addition, this research supports the contention that all three components of the DT are distinct, and therefore these traits may interact with one another to explain a variety of workplace behaviors. Very few researchers measured, in the same study, two or more of the DT components, and so the unique qualities and impact of individuals with distinctive DT profiles—such as a person who is a Machiavellian, narcissistic psychopath—remain for future study.

An additional limitation and a future direction of this research are that very few studies reported dimension-level relations to the work behaviors. All three components of the DT have been shown to be multifaceted, but with nearly all articles aggregating the DT constructs, the facet-level information is lost. It is possible that by teasing out the various facets, researchers can better understand what specific aspects of each DT trait are most deleterious to performance and CWB and which facets may be beneficial. For example, the exploitativeness dimension of narcissism may strongly relate to exchange violations and lower performance, while the self-confidence dimension may positively relate to performance.

Our strongest recommendation for future research echoes the call of many (e.g., Wu & LeBreton, in press) for better measure-

ment of the DT. There are extreme limitations for standard self-report measures of all three components, especially if the DT moves into personnel selection. Our review found few instances where the DT was used as a screening tool, and these predictive validity studies relied almost entirely on clinical psychopathy scales such as the MMPI-pd. As the DT integrates further into applied psychology and organizational behavior, the application to selection becomes one of the most important criteria in judging worth and current measures of the DT appear inadequate. Many Machiavellianism and psychopathy items are prone to socially desirable responses. In addition, the inflated but fragile self-esteem of a narcissist creates problems when attempting to generate honest self-reports. One possible avenue to address this limitation is conditional reasoning tests (James, 1998) that are presented to participants as ability measures but do in fact identify the cognitive processes of how an individual perceives and reacts to workplace situations. Related to the issue of social desirability is common method variance (CMV), and we find that in the DT literature, the issue has been all but ignored. Its omission from the DT literature does not negate its likely influence on the DT relations to other constructs.

Another limitation of existing DT measures is that these measures require a great degree of self-awareness that many, especially those high in narcissism, do not possess. For Machiavellianism, current measures only assess the willingness to manipulate others, not actual ability. Further complicating matters, peer and supervisor reports have limited applications because as Machiavellians' ability increases, the likelihood that their beliefs and interpersonal manipulation is detectable to others decreases. For Machiavellian ability, third-party observation may be necessary. However, even with outside observation, differentiating interpersonal manipulation (Machiavellianism) from interpersonal management (e.g., social effectiveness) is difficult and may be as much a function of the values of the observer as of the actors.

Reliance on objective behaviors to measure the DT has its own pitfalls, especially when CWB is the outcome. There are certainly theoretical reasons why the DT should relate to CWB, but many DT measures contain objective behaviors (e.g., arrests, physical altercations) that might also appear on CWB scales. This is an often overlooked form of CMV. This is not unique to the DT, as many personality measures (e.g., integrity, conscientiousness) often use items that also appear on performance and CWB scales (O'Boyle, Forsyth, & O'Boyle, 2011). However, DT measures may show greater overlap than most individual difference measures, and for the DT to contribute to applied psychology, this issue must be addressed with better instrumentation, research design, and analysis.

An additional area for future research is how individuals high in any or all of the DT traits affect group dynamics and social networks. The current work found only a slight negative relation between the DT and job performance, but the effect of the individual's DT level on peers', supervisors', and subordinates' productivity is unclear. We propose that the DT has extended detrimental influence because individuals high in a DT trait rely on inequitable exchanges to achieve desired outcomes, thus their influence is by definition networked. The extant literature has thus far focused primarily on the individual's DT levels and performance, but network analysis and multilevel research may find that the DT casts a shadow that extends well beyond the individual worker.

A final limitation and a future direction are that the present research does not address the incremental validity of the DT beyond other individual-difference variables. We have demonstrated that the DT does explain a substantial portion of the variance in CWB, but if existing measures of personality such as the five-factor model explain the same variance, then the utility of the DT to applied psychology is compromised. Future research should examine how the DT operates within the larger network of existing predictors of work behaviors.

Conclusion

The present research has demonstrated that the DT holds an important and, to date, relatively unrecognized place in organizational research and applied psychology. From a social exchange perspective, we have established the dimensionality of the DT as three distinct constructs that relate to important work behaviors. We have also informed scholarship by examining the moderating roles of authority and culture. Finally, we have tested the collective effects of the DT and have found that it explains moderate amounts of variance in CWB, but not job performance.

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