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A Meta-Analytic Review of the Dark Triad-Intelligence Connection

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Abstract

We conducted a meta-analytic review of the relations between general mental ability (GMA) and the Dark Triad (DT) personality traits—Machiavellianism, narcissism, and psychopathy—to determine if individuals who display socially exploitative social qualities tend to be more intelligent or less intelligent. Across 48 independent samples, GMA showed no consistent relation with any DT trait. These effects were not sufficient to support either the "evil genius" hypothesis (highly intelligent individuals tend to display socially exploitative personality traits) or the "compensatory" hypothesis (less intelligent individuals compensate for their cognitive disadvantages by adopting manipulative behavioral tendencies). However, these relations were moderated, to some extent, by the sex and age of the participants, type of sample studied, and the measure of GMA.

Key words: Dark Triad, Machiavellianism, narcissism, psychopathy, general mental ability, intelligence

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Paulhus and Williams (2002) coined the term Dark Triad (DT) to refer to the three socially aversive traits of Machiavellianism, narcissism, and psychopathy. People who manifest these personality traits confess to a willingness to use their superior, if perversive, social skills and abilities to achieve personally advantageous outcomes, and their claims are partially supported by existing evidence. For example, Machiavellians, at least initially, are often considered to be charming and astute (Wilson, Near, & Miller, 1996). Many of the narcissists' prominent qualities, such as self-confidence and energy, are viewed favorably when they vie for positions of leadership (Paunonen, Lönnqvist, Verkasalo, Leikas, & Nissinen, 2006). Boldness, a trait of psychopathy, positively predicts presidential performance in the US (Lilienfeld et al., 2012). The DT traits are also associated with success in short-term sexual relationships, perhaps because individuals with these traits are more likely to use influence tactics to their interpersonal advantage (Jonason, Li, Webster, & Schmitt, 2009; Jonason, Slomski, & Partyka, 2011). These successes support the "evil genius" hypothesis: that those who are intellectually gifted are more likely to display socially exploitative personality traits relative to the general population. As Paulhus and Williams (2002) suggest in their initial discussion of the DT traits, superior intelligence may reduce the costs associated with acting in disagreeable, relationship-damaging ways.

Other studies, however, suggest that DT individuals exhibit intellectual deficits rather than cognitive advantages (e.g., Lykken, 1995). Individuals with a history of criminal or delinquent behavior, for example, tend to test lower in intelligence but higher on the DT traits (e.g., Chabrol, Leeuwen, Rodgers, & Séjourné, 2009; Lynam, Moffitt, & Stouthamer-Loeber, 1993). O'Boyle, Forsyth, Banks, and McDaniel (2012), in a meta-analytic study of

counterproductive workplace behavior, found that all three traits predicted increases in such aberrant organizational behaviors as theft, withdrawal, and abuse of coworkers. The DT trait of psychopathy, in particular, is linked to a number of qualities related to lower intelligence, including impulsivity (Jones & Paulhus, 2011), lower self-control (Jonason & Tost, 2010), and stunted moral development (Campbell et al., 2009). Psychopaths are thrill seeking and impulsive, indicating deficiencies in the abstract thinking necessary to understand the consequences of their behavior (Gillstrom, 1995). As an evolutionary approach to personality suggests (e.g., Wilson, Near, & Miller, 1996), Machiavellianism, narcissism, and psychopathy may be adaptations that emerge to compensate for intellectual shortcomings. The Machiavellian, narcissist, and psychopath engage in agentic, manipulative behavior because their limited intellectual skills prevents them from succeeding through more socially valued avenues. This "compensatory" hypothesis predicts the relations between the DT traits and GMA are negative.

Alternatively, DT traits may have no relation to general intelligence. For example, although Machiavellians consider themselves to be crafty, cunning, and calculating, Jones and Paulus' (2011) narrative review concluded that Machiavellianism is unrelated to general intelligence and to more specific types of intellectual ability, such as mind-reading and emotional intelligence. Similarly, other research finds either no link (e.g., Paal & Bereczkei, 2007) or a small negative link (e.g., Barlow, Qualter, & Stylianou, 2010) between Machiavellianism and similar measures like Theory of Mind. Likewise, narcissists perceive themselves to be exceptionally bright, but this perception is not tied to performance or shared by others (Gabriel, Critelli, & Ee, 1994).

Moderators of the Dark Triad–Intelligence Connection

The inconsistency in findings yielded by previous studies of the relations between the DT traits and intelligence may be due, in part, to the influence of situational and dispositional factors that moderate these relations. For example, a number of studies have reported sex differences in DT traits (e.g., Christie & Geis, 1970; Domelsmith & Dietch, 1978; Wilson et al.,1996). Age is also linked to the DT traits: younger individuals are particularly narcissistic (e.g., Foster, Campbell, & Twenge, 2003), but Machiavellianism and psychopathy follow a similar pattern (Harpur & Hare, 1994; Mudrack, 1989). Some investigators have studied the responses of college students, whereas others have examined the personalities of adults (e.g., Ward, 1993). Finally, researchers have used a variety of methods to measure intelligence, including both verbal and nonverbal indices. In order to determine if these differences in subject populations and measurement procedures are obscuring the DT-intelligence relations, we identified and tested the statistical influence of four moderators: (1) percentage of males within a sample, (2) age, (3) sample type (e.g., student vs. general population adults), (4) and GMA measure.

Hypotheses

We conducted a meta-analytic review (Hedges & Olkin, 1985) to determine if individuals who display socially exploitative qualities tend to be more intelligent (the "evil genius" hypothesis) or less intelligent (the "compensatory" hypothesis). Given the conflicting evidence regarding the relations between the DT traits and GMA, we make no explicit prediction for the relation between the three components of the DT and GMA. However, we hypothesize that the percentage of males, mean age of samples, student versus general population, and type of GMA measure will moderate the relations between the DT and GMA.

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 conducted this keyword search in German, French, and Spanish. To identify additional studies, we posted requests for unpublished studies and data to various email services (e.g., SPSP email messaging system, 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 Dark Triad traits (e.g., Decuyper et al. 2009; Fehr, Sampson, & Paulhus, 1992; Holtzman & Strube, 2009; Mudrack, 1990; Ruffo-Fiore, 1990; Ruiz, Pincus, & Schinka, 2008). The study search was finalized in October, 2012.

Inclusion Criteria

We included a study in the meta-analysis if it examined at least one component of the Dark Triad (i.e., Machiavellianism, narcissism, or psychopathy) and also included one or more measures of GMA. In cases where the authors reported insufficient information, we requested effect sizes before excluding the study from our sample. Paulhus and Williams (2002) conception of the DT was one that applied to non-clinical populations, therefore we eliminated

psychiatric samples, prisoners, and young children. There were no stipulations concerning the nationality of a sample or a study's language.

Coding Studies

We did not code proxies of the DT, nor did we include proxies of intelligence such as academic achievement, but given the high correlation between aptitude tests and intelligence tests (r = .82; Frey & Detterman, 2004), we did include six studies that used either the SAT or ACT. Analyses with and without these six studies revealed no differences in results. Our interest was confined to general mental ability, therefore we excluded "intelligence" constructs such as emotional intelligence and Machiavellian intelligence. The most frequently used intelligence measure was the Wonderlic, followed by the WAIS, Shipley Institute of Living Scale, and Otis Quick Scoring Mental Ability Test. All three Dark Triad traits have varying degrees of multidimensionality, but the number of studies that reported facet-level data for Machiavellianism, narcissism, and psychopathy was too small to provide stable point estimates for facet level relations. 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. For example, if a study only used or reported two of the four subscales of the NPI, we did not create a total narcissism score. For the moderators, we coded the average age, percentage of males, type of GMA measure, and nationality of each sample. When age or sex was not reported, we computed the mean from the same population. For example, the age of undergraduate samples was omitted in some cases; therefore we used the average age of the other undergraduate samples as the best estimate.

We used Wood (2008) detection heuristics to identify and eliminate duplicate samples reported in two or more publications, but when a study reported multiple, independent samples, we included effect sizes from each sample as long as it met the aforementioned inclusion criteria.

Meta-analytic Procedure

We used Hedges and Olkin (1985) and Lipsey and Wilson (2001) random effects, maximum likelihood equations for both the overall analyses and tests of moderation. To assess the likelihood that a relation is moderated, we used the *I*-square statistic (Higgins, Thompson, Deeks, & Altman, 2003). The *I*-squared statistic is the ratio of true heterogeneity to total variation in observed effect sizes. The use of *I*-squared rather than the *Q*-statistic or tau-squared is due to the fact that the *I*-squared is less affected by the scaling of the measures or the number of included studies (Borenstein et al, 2009). An *I*-squared value greater than 25 percent indicates that a search for moderation is justified (Higgins et al., 2003). Because our moderators were either binary (student versus general population; Wonderlic versus other GMA measures) or continuous (age, sex), we used unrestricted maximum likelihood meta-regression. For each DT construct, moderators were entered simultaneously.

Results

Table 1 provides a complete list of all studies that were included in the meta-analyses. Our final sample consisted of 39 articles, reporting 48 separate samples, with a total of 10,313 participants. Residents of 4 nations were represented (US, Canada, Germany, Malaysia), but nearly all studies were conducted in the United States or Canada. Unfortunately, this prevented us from testing for national or cultural differences. Empirical interest in the DT-GMA relation has varied over time, with 6 effect sizes from the 1960s, 14 from the 1970s, only 5 between 1980-1999, but 28 since 2000. The sex of participants in the samples (54% male) is nearly

representative of the population. The sample type and measures used are also reported in Table 1.

Table 2 reports the overall findings and tests of moderation. Across all three traits of the DT, we find no significant relations to GMA. Effects were very small, ranging from .03 to -.05, and never accounting for an appreciable percentage of the variance in GMA. This runs counter to both the compensatory hypothesis and the "evil genius" hypothesis. Further, this result indicates that the negative (e.g., Blunt, 1982; Brummel, 2008; Dahling, Whitaker, & Levy, 2009) and positive (e.g., Rounds, 1989; Singer, 1964; Vazire, 2006) relations found between DT traits and GMA reported in specific investigations may be the result of sampling error and do not reflect a true relation between any DT trait and GMA. Additionally, across all 48 effects sizes, 35 of the correlations had an absolute value of .10 or less. In sum, we find no evidence that the DT and GMA are significantly related.

Even though the overall DT-GMA relation was not statistically significant, the *I*-squared values in excess of .25 suggested contextual and disposition factors were likely moderating the strength of that relation. The absence of significant correlations does not necessarily indicate no relation between the DT and GMA, only that across the population of studies the average effect is close to zero. However, in certain situations or within certain populations, the DT and GMA may be related. When we examined this possibility through meta-regression, we found partial support for all four of our moderators with the moderators accounting for substantial amounts of the variance in effect sizes (R^2). Specifically, the Machiavellianism-GMA relation was significantly different between students and the general population (B = -.184) with students showing a positive relation of .079 and non-student showing a negative relation of -.043. In addition, age moderated both the relation between narcissism and GMA (B = -.016) and the

relation between Machiavellianism and GMA (B = -.010), such that the relations were stronger in studies of younger samples than older samples. Although a small effect, the greater the percentage of males in the samples, the weaker the GMA relations (as evidenced by the coefficients having the opposite sign as the main effect) for both Machiavellianism and psychopathy (B = -.001 and .002, respectively). Finally, studies that used the Wonderlic had weaker effects sizes for both Machiavellianism (B = -.090) and psychopathy (B = .202). Despite these effects being statistically significant, the number of included studies was small and more work, including replication studies, is needed to fully understand the various interactions at play in the DT-GMA relations.

Discussion

This meta-analytic review of empirical studies of the relation between Dark Triad traits (Machiavellianism, narcissism, and psychopathy) and general mental ability (GMA) supported neither the evil genius hypothesis nor the compensatory hypothesis. Individuals who are more intelligent than others on average are not more likely to exhibit personality traits that condone a manipulative, socially aversive style of interaction. However, although aspects of the DT traits are related to impulsivity, short-sightedness, and deficits in abstract reasoning, these aversive personality traits were not more prevalent or pronounced in those who were less cognitively advanced. Those individuals whose personalities include such dark traits as Machiavellianism, narcissism, and psychopathy are neither brute dullards nor evil geniuses on average. Meta-regression analyses suggested that the strength of these relations was moderated by the age and sex of the participants, type of sample studied, and GMA measure.

Limitations and Future Directions

The current meta-analytic review has advanced the study of individual differences in several ways. Nonetheless, several limitations to this work exist. First, each of the relations between GMA and the DT included *I*-squared statistics indicating that moderate to large amounts of heterogeneity were present. We tested four theoretical supported moderators (e.g., percentage of males, age, type of sample, GMA measure). However, due to the limitations of the primary samples, we were unable to test for all theoretically meaningful moderators (e.g., culture). Additional research targeted at potential contingency factors may serve to provide a more comprehensive understanding of the DT-GMA relations. For example, we suspect that within certain jobs, the relation between the DT and GMA might be quite strong, especially in professions where success depends more on interpersonal savvy. Further, the relations between DT traits and GMA may be a nonlinear one, such that very low and very high levels of the DT are associated with low intelligence, but a certain amount of manipulation, self-promotion, and callousness may relate to above average intelligence.

Another limitation of this meta-analytic review is that we were unable to explore facet-level information regarding the DT constructs. The vast majority of primary samples explored the DT constructs at the global level. It is possible that subfacets of the DT have stronger negative relations with GMA that we were unable to consider in this study.

One final avenue for future research is the improvement of the measurement of the DT (O'Boyle et al., 2012; Wu & LeBreton, 2011). The limitations of self-report measures of personality have been discussed in-depth across multiple areas of research (e.g., Morgeson et al., 2007; Paulhus & Vazire, 2007; Vazire, 2010; Vazire & Carlson, 2010; Vazire & Carlson, 2011). These limitations hold true for the measurement of the DT using self-report measures. For instance, Machiavellian and psychopathy items are vulnerable to response distortion, such as

socially desirable responding. The warped self-perceptions of narcissists are vulnerable to biases resulting in dishonest self-reports. One approach to mitigate the limitations of self-reports of the DT is to consider observer ratings of personality (e.g. Vazire, 2006). Subsequently, systematic measurement error due to self-perception inaccuracies (Vazire & Mehl, 2008), informational asymmetries (Vazire, 2010), and response distortion may be mitigated. Thus, future research should consider the measurement of the DT using observer ratings.

Conclusion

A meta-analytic review of the relation between GMA and the DT did not support either the evil genius or compensation hypothesis. There was no relation between GMA and Machiavellianism, narcissism, and psychopathy. There is evidence that characteristics of the sample and the measures used moderate the relations between GMA and DT. Future research should be directed at the improving the measurement of the DT through means such as observer ratings of personality and by considering subfacets of the different traits as well as other moderating influences.

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