METAPERCEPTION AND THE DARK TRIAD: TESTING SELF AND META-PERCEPTIONS IN RELATION TO PSYCHOPATHY, NARCISSISM, AND MACHIAVELLIANISM

by

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(Under the Direction of Joshua D. Miller)

ABSTRACT

The "Dark Triad" consists of three partially overlapping trait configurations that manifest in problematic interpersonal outcomes: narcissism, psychopathy, and Machiavellianism. A lack of insight is often noted in theoretical writing surrounding personality pathology, including those associated with the Dark Triad, but there is a relatively limited body of research empirically testing this notion. Comparing meta-perception based reports of personality, or how people believe others see them, to self-reports in relation to informant-reports allows for a direct test of the extent to which people are accurate in understanding how they are perceived by others. The present study (N=985) investigated how Dark Triad personality styles are viewed from multiple perspectives, including self-report, meta-perception, and informant-report (i.e., parent and peer-report), in an undergraduate sample. Absolute level differences were investigated and self-reports endorsed significantly more Machiavellianism and less narcissism than peer and parent-report. The relative convergence between meta-perception and informant-reports was moderate, and similar to the convergence between self-reports and informant-reports. Multiple regression analyses in which self-reports and meta-perceptions predicted informant-reports identified significance differences in the beta weights in 22 of the 46, or 48% of the

analyses, and in 16 of the 22 cases, meta-perceptions were the stronger predictor. These findings suggest that while self-reports and meta-perceptions are closely related, people are able to provide information above and beyond their own view in regards to the Dark Triad. As such, researchers and clinicians may want to consider using meta-perception style questionnaires in addition to traditional self-report measures when assessing for the Dark Triad.

INDEX WORDS: Personality, traits, interpersonal perception, personality disorders

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A Dissertation Submitted to the Graduate Faculty of The University of Georgia in Partial Fulfillment of the Requirements for the Degree

DOCTOR OF PHILOSOPHY

ATHENS, GEORGIA

2016

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August 2016

DEDICATION

I dedicate my dissertation to Judy and John Maples, Polly and Lagette Goodrum, and Betty and Adam Maples. I come from a long line of unconditional love and support, and I am so grateful for all of you.

ACKNOWLEDGEMENTS

I would like to express my deep gratitude to Dr. Josh Miller for his constant support, guidance, and mentorship. I have learned more from you over the course of graduate school than I would have thought possible- thank you for your generosity with your time and feedback, your support of my interests and beliefs, your honesty and humor, your deep investment in my personal and professional growth, and for always challenging and encouraging me.

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CHAPTER 1

INTRODUCTION

The Dark Triad

The "Dark Triad" consists of three partially overlapping trait configurations that tend to manifest in aversive or problematic interpersonal outcomes: narcissism, psychopathy, and Machiavellianism (Paulhus & Williams, 2002). Narcissism is a construct of longstanding interest in clinical psychology and is included as a DSM-5 personality disorder; it is characterized by grandiosity, lack of empathy, and a need for admiration (APA, 2013). Psychopathy is rooted in Cleckley's (1941/1988) description of traits such as egocentricity, callousness, shallow affect, lack of remorse, and a predisposition to antisocial behavior. The empirical study of Machiavellianism is based on the writing of Machiavelli, a 16th century Italian political strategist, and this trait involves a manipulative and instrumental personality style (Christie, 1970).

Despite differences in the development of these constructs, they are typically moderately inter-correlated (e.g., *r*s ranging from .35 to .50, Paulhus & Williams, 2002) due, in part, to significant genetic overlap (Vernon et al., 2008). The communalities among the Dark Triad are partially due to a shared negative relation with trait agreeableness (Paulhus & Williams, 2002). However, differences among the Dark Triad constructs have been noted in the empirical literature, for instance, they diverge with regard to their relations with Five Factor Model (FFM) domains of neuroticism, extraversion, and conscientiousness (e.g., Paulhus & Williams, 2002), lending some support for their distinctiveness (cf, O'Boyle, Forsyth, Banks, Story, & White, in press). A meta-analysis of 310 independent samples investigating the Dark Triad's relations with the FFM demonstrated that all three Dark Triad constructs are characterized by a significant

negative relation with agreeableness, with weighted mean correlations ranging from -.29 (narcissism) to -.42 (psychopathy; O'Boyle et al., in press). Differences were seen in their relations with other FFM domains. For instance, Machiavellianism and psychopathy both demonstrated a small but significant positive relation with neuroticism whereas narcissism demonstrated a significant negative relation with this domain. Interest in the simultaneous study of the Dark Triad constructs has increased dramatically over the last 10 years (Furnham, Richards, & Paulhus, 2013), likely due to accumulating evidence that they relate to a wide variety of pathological outcomes such as bullying (Baughman, Dearing, Giammarco, & Vernon, 2012), cheating behavior (Williams, Nathanson, & Paulhus, 2010), and diminished self-control (Jonason & Tost, 2010).

Personality Disorders and lack of insight

Problematic configurations of personality traits – be they officially recognized personality disorders (PDs) such as narcissistic personality disorder or not – have long been associated with a presumed lack of insight (Westen, 1997). This perceived lack of insight is thought to have important implications for the assessment and treatment of these PDs, as well as the functional impairment (e.g., social, occupational) often associated with these constructs. The presumed relation between personality pathology and a lack of insight is based on clinical and psychodynamic conceptualizations, the interpersonal impairment associated with PDs, and the relatively modest self-informant agreement often found for both general personality traits and PDs. Although a lack of insight is often noted in theoretical writing and clinical lore surrounding personality pathology including those associated with the Dark Triad (Cleckley, 1941/1988; Rosenfeld, 1964), there is a relatively limited body of research empirically testing this notion, particularly with regard to the constructs that comprise the Dark Triad.

Clinical and psychodynamic conceptualizations

PDs have long been viewed within clinical conceptualizations as being ego syntonic as well as being characterized by a lack of insight (Hirschfeld, 1993). This conceptualization suggests that individuals with PDs view their symptoms as an acceptable and an integral part of their personality, and are not able to accurately perceive pathological aspects of their personality and related dysfunction. While lack of insight has been posited to characterize all forms of personality pathology, it has been suggested to be a central feature of both psychopathy and narcissism. In his seminal writings describing psychopathy, Cleckley (1941/1988) stated that "In a special sense, the psychopath lacks insight to a degree seldom, if ever, found in any but the most severely disturbed psychotic patients" (p.341) and reported that psychopathic individuals have "absolutely no capacity to see himself as others see him" (p.341). He later noted that psychopathy is characterized by a "total absence of self-appraisal as a real and moving experience" (p. 343; Cleckley, 1941/1988).

Lack of insight has also been suggested to be a central feature of narcissism, particularly in psychodynamic clinical writings. For instance, Herbert Rosenfeld, a psychoanalyst, noted that "The rigid preservation of the ideal self-image blocks any progress in the analysis of narcissistic patients, because it is felt to be endangered by any insight and contact with psychic reality. The ideal self-image of a narcissistic patient may be thought of as a highly pathological structure based on the patient's omnipotence and denial of reality" (p.366, 1964). The presumed absence of insight has moved beyond clinical conceptualizations, however, and is embedded within contemporary classification guidelines. For instance, the PD diagnostic features section within the Diagnostic and Statistical Manual of Mental Disorders (DSM-5; American Psychiatric Association, 2013) states, "Assessment can be complicated by the fact that characteristics that

define a personality disorder may not be considered problematic by the individual (i.e., the traits are often ego-syntonic)" (p. 647), and as such encourages the use of informant-report in PD assessment.

The Dark Triad and interpersonal impairment

Another reason that insight is presumed to be impaired for personality disorders is the interpersonal impairment often associated with these disorders. PD traits have been associated with significantly impaired interpersonal functioning in clinical (e.g., Skodol et al., 2002) and nonclinical samples (e.g., Oltmanns, Melley, & Turkheimer, 2002). The continued engagement in problematic behaviors by individuals with elevated personality pathology, despite the significant interpersonal dysfunction that this causes, has been interpreted by some as evidence of a lack of insight. Empirical evidence suggests that Dark Triad personality styles are related to interpersonal impairment. For instance, interpersonal deficits such as lack of remorse and lack of empathy are considered central features of psychopathy (Hare, 2003) whereas narcissistic personality disorder (NPD) is characterized by entitled and exploitative interpersonal symptoms (APA, 2013; Miller, Campbell, & Pilkonis, 2007). Similarly, interpersonal manipulation and a generally cold, antagonistic interpersonal approach is a central theoretical (Christie, 1970) and empirical (O'Boyle et al., in press) feature of Machiavellianism. Investigations into the interpersonal processes and perceptions related to the Dark Triad may help to understand the wide array of negative outcomes associated with these personality styles.

Although there is ample evidence to suggest that the Dark Triad constructs are related to interpersonal dysfunction, substantial data also suggests positive interpersonal aspects associated Dark Triad constructs, at least in the short-term. After watching thin-slice videos, people viewed individuals who exhibited narcissistic traits as more likeable and attractive (Oltmanns, Friedman,

Fiedler, & Turkheimer, 2004). A group of psychology undergraduates judged each other based on a short self-introduction, and results suggested that narcissism was related to popularity at first sight (Back, Shmuckle, & Egloff, 2010). Notably, the most maladaptive narcissistic traits, including exploitativeness and entitlement, were deemed the most attractive. Psychopathy, narcissism, and Machiavellianism are also related to an increased number of lifetime sexual partners, suggesting that these personality styles may represent effective short-term mating strategies (Jonason, Li, Webster, & Schmitt, 2009). These findings suggest that Dark Triad personality styles may be viewed by others as desirable in the short term, even when others are aware of the presence of these traits.

However, evidence suggests that the perceived likeability of Dark Triad constructs may not be enduring, as this likeability may decrease over time. In a longitudinal study in which groups met on seven separate occasions, individuals high on narcissistic traits were rated positively at the first meeting (i.e., more agreeable, well-adjusted, and competent) but were rated negatively at the final meeting seven weeks later (Paulhus, 1998). The likeability of Dark Triad traits at initial acquaintance and subsequent interpersonal dysfunction suggests a complex relation between the Dark Triad and interpersonal functioning, thus research investigating interpersonal processes and perceptions related to these disorders could be highly informative. Additionally, the problematic behaviors repeatedly engaged in by individuals with elevated personality pathology despite the interpersonal consequences that this causes has been interpreted by some as evidence of a lack of insight, yet there is a paucity of studies directly investigating the accuracy of this interpretation.

Extant empirical evidence on the Dark Triad and insight

A few studies have empirically investigated the assumption that personality pathology is characterized by a lack of insight. One way to test this assumption is to investigate absolute convergence, or mean level differences across self and informant-reports. The conceptualization that personality pathology is characterized by a lack of insight would suggest that self-reports would relate to an under-reporting of symptoms, thus lower mean levels, compared to informant-report. Extant evidence regarding who endorses higher average levels of personality pathology is mixed. In a review of 12 studies that examined the 10 DSM-IV PDs, six reported higher levels for informant-reports, four reported higher levels for self-reports, and self and informant-reports were comparable in two (Klonsky, Turkheimer, & Oltmanns, 2002). There is a paucity of literature investigating absolute convergence in relation to the Dark Triad. In a previous study investigating mean level self-informant convergence in regard to psychopathic traits, across scores on 14 psychopathy scales, informant-reports were significantly higher for four scales (*d*s ranged from -.35 to -.58; Miller, Jones, & Lynam, 2011). Across all 14 psychopathy scales, the effect sizes ranged from -.58 to .18 with a median of -.08, providing modest, at best, evidence that individuals may endorse less psychopathic traits compared to informants. In another study investigating interpersonal perception and narcissism, individuals rated themselves significantly higher on grandiose and vulnerable narcissism compared to peer-reports (Lukowitsky & Pincus, 2013).

In addition to absolute convergence, correlations between self and informant-reports of the Dark Triad are another way to test the conceptualization that these personality styles are characterized by a lack of insight. Results from studies investigating convergence between self and informant-reports are inconsistent with this conceptualization for both psychopathy and narcissism. In a study investigating psychopathic traits in a community sample over-sampled to

include more psychopathic participants, self and informant-reports demonstrated strong convergence across three measures of psychopathy (mean *r* = .64; Miller, Jones, & Lynam, 2011). The authors interpreted these data to suggest that a lack of concern regarding consequences related to these pathological traits may have been misinterpreted as a lack of insight into them. This finding was replicated in another community sample in which self and informant-reports of psychopathic traits correlated substantially, and both were substantially associated with violence and non-violent anti-social behavior (Miller, Rausher, Hyatt, Maples, & Zeichner, 2014). Available evidence suggests that this finding is not specific to psychopathic traits. For instance, another study found that individuals high on narcissistic traits not only endorsed these traits on self-report measures, but also endorsed engaging in narcissistic behaviors in their daily life (e.g., criticizing others, bragging, acting condescending; Carlson, 2013). In sum, while a longstanding conceptualization held in theoretical and clinical writings suggests that personality pathology is related to a lack of insight, current empirical evidence is not entirely consistent with this characterization. Nonetheless, the degree of convergence between self and informant-reports for general traits (Connelly & Ones, 2010) and pathological traits/PDs (Klonsky, Oltmanns, & Turkheimer, 2002) is typically far from perfect.

Convergence of self and informant-reports of personality

There is growing interest and empirical support for conceptualizing and understanding personality pathology from a general trait perspective (e.g., Clark, 2007). As such, self and informant-reports of Big Five personality traits , which can be conceptualized as the building blocks of personality disorders (e.g., APA, 2013; Widiger & Costa, 2013), are also relevant to understanding insight in regard to the Dark Triad. Convergence in self-other agreement refers to the extent to which informants view the individual as he or she views him or herself (e.g.,

Kenny, 1991). Findings regarding absolute self and informant-report convergence, or mean level differences, of personality traits demonstrate mixed results. A recent study investigated absolute convergence of self and peer-reports of personality traits, including the FFM and the Evaluative Person Descriptors Questionnaire (EPDQ; Simms et al., 2008), which measures evaluative traits including positive valence (i.e., distinction, intellect, attractiveness, and self-worth), depravity, and oddity (Simms, Zelazny, How Yam, & Gros, 2010). Results revealed small but significant differences for six of the seven traits from the EPDQ and three of the FFM domains, such that that self-reports were less positive and more negative than peer-ratings (Simms, Zelazny, How Yam, & Gros, 2010). For instance, mean self-reports were higher for neuroticism and depravity, and lower for extraversion and intellect and self-worth.

In another study investigating views of target personality across self, supervisor, and coworker-reports in a sample of sales representatives, self-reports were significantly different than supervisor ratings for four of the five FFM domains, endorsing higher mean levels of conscientiousness, extraversion, and agreeableness, and lower mean levels of neuroticism (Mount, Barrick, & Strauss, 1994). However, self-reports were not significantly different than coworker-reports for any of the domains, suggesting that absolute convergence of FFM traits may depend on the type of the relationship between the target and the informant. Other studies have found few to no significant mean level differences in self and informant-reported personality traits. In a nonpsychotic psychiatric sample comparing self and acquaintance reports, no significant differences in mean levels of FFM traits was found (Ready & Clark, 2002). In a sample of depressed outpatients, the only significant difference between self and informant-reports of the FFM was for extraversion, such that the targets viewed themselves as more introverted than the informants (Bagby et al., 1998).

Relative convergence of self and informant-reports of personality traits has garnered significant empirical attention, and evidence suggests that self and informant-reports of general personality traits typically demonstrate moderate convergence. In a meta-analysis of 44,178 target individuals from 263 samples, mean self and informant-correlation for the FFM domains ranged from .29 (agreeableness) to .41(extraversion; Connelly & Ones, 2010). Self and informant-reports of pathological personality traits show similar convergence. In a review of 17 studies reporting self and informant convergence of pathological personality, the median correlation was .36 for continuous measures (Klonsky, Oltmanns, & Turkheimer, 2002).

The discrepancy between self and informant-reports of personality leads to questions as to why these viewpoints differ, and which demonstrates stronger relations with meaningful outcomes. Different theories have been presented regarding why self and informant perceptions of personality may differ. It has been argued that informant-reports is more objective and valid (e.g., Kenny, 1994) as it is less biased by motivations to represent oneself in a positive or desirable manner. Conversely, the self-other knowledge asymmetry model (SOKA; Vazire, 2010) posits that specific aspects of personality are known uniquely to the self or informant, due to differences in the information available to self and informant and the impact of motivational biases. Specifically, the SOKA model proposes that self has better information regarding internal traits (e.g., neuroticism) whereas informant has better information regarding external traits (e.g., extraversion) and evaluative traits (e.g., agreeableness).

Moderators of self and informant-report convergence

In addition to the application of theoretical models towards understanding discrepancies between self and informant-reports of personality, empirical investigations have sought to identify specific conditions that may affect levels of convergence between self and informant-reports of personality. Understanding what factors may moderate self and informant convergence may elucidate the cause of discrepancies between various reports and clarify processes of interpersonal perception.

Observability

Observability refers to the extent to which the behaviors or emotions that correspond to specific personality traits are visible, public, or external. A trait that is highly observable would be comprised of external behavioral manifestations, whereas a trait that is less observable would relate to more internal tendencies that may be less accessible to informants. In regard to FFM domains, extraversion is considered a highly observable domain as it is linked to external social behaviors, whereas neuroticism is less observable as it is linked to internal thoughts and feelings. Self-other agreement is stronger for more observable traits (Funder & Dobroth, 1987; John & Robins, 1993; Paunonen, 1989). Results from the meta-analysis of self and informant-reports of FFM domains for 44,178 targets across 263 independent samples found that self and informant convergence was highest for extraversion, the most observable FFM domain, whereas the less observable domains of neuroticism and openness demonstrates decreased levels of convergence (Connelly & Ones, 2010).

Evaluativeness

Evaluativeness refers to whether or not a trait being judged has some positive or negative connotation related to social evaluations. Evaluativeness could impact self and informant

convergence as individuals may conceal negatively evaluated aspects of their personality, providing informants with less information relating to those traits. Conversely, self-reports may be more biased for evaluative traits, as individuals may distort their responses due to motivations to maintain and enhance self-esteem, or may be unwilling to admit to undesirable features (John & Robins, 1993). In regard to FFM domains, extraversion has been shown to be the least evaluative domain, whereas agreeableness has been shown to be the most evaluative (John & Robin, 1993). Consistent with this notion, meta-analytic results demonstrated that agreeableness demonstrated the lowest level of self and informant convergence across the FFM domains (Connelly & Ones, 2010). This is particularly notable as the Dark Triad constructs share a sizable negative relation with agreeableness, as such they are highly evaluative trait configurations and this may relate to the assumption that they are characterized by a lack of insight.

Interpersonal intimacy

Aspects of the informant relationship with the target, including level of interpersonal intimacy, have also been shown to influence levels of self and informant convergence. Meta-analytic results suggest self-informant convergence is strongest when the informant is a spouse or dating partner, with family members and friends demonstrating slightly lower convergence followed by coworkers and incidental acquaintances (Connelly & Ones, 2010). This suggests that the level of self and informant convergence regarding personality is higher if the self and informant relationship consists of higher levels of interpersonal intimacy. While frequency of interaction, another aspect of the informant relationship with the target, has also been presumed to affect self and informant convergence, this meta-analysis also suggested that self and informant convergence for coworkers was only slightly higher than convergence with strangers

(Connelly & Ones, 2010). This suggests that frequency of interaction alone may not be enough to increase convergence, as the quality of the interactions and related feelings of emotional intimacy may be more impactful.

In sum, high observability, low evaluativeness, and high interpersonal intimacy have all been shown to increase the level of convergence found between self and informant-reports of personality. It is notable that Dark Triad pathological personality styles are clearly evaluative traits, which is echoed in their shared negative relation with agreeableness (Paulhus & Williams, 2002). The Dark Triad constructs vary in relation to the other FFM domains, as narcissism is also related to extraversion and psychopathy and Machiavellianism are also negatively related to conscientiousness (Paulhus & Williams, 2002; O'Boyle et al., in press). Convergence between self and informant-reports regarding the Dark Triad constructs may vary based on the observability and evaluativeness of the FFM domains with which they are associated.

Findings regarding self and informant-reports of the Dark Triad may also depend on the informants used. For instance, in the previously reviewed study in which self and informant-reports of psychopathy demonstrated strong convergence (mean r = .64), the informant knew the target participant for an average of 12.5 years (SD = 11.9; Miller, Jones, & Lynam, 2011). This suggests that convergence of self and informant-reports of psychopathic traits in this study may have been particularly strong because the informants knew the target participants for a long time. Evidence also suggests that length of acquaintanceship moderates the prediction of psychopathic traits from informant-reports of normal personality traits. In a study investigating informant-reports of the HEXACO model (Lee & Ashton, 2004), informants were categorized into five acquaintanceship levels (i.e., casual acquaintances, work relationships, friends, family members, and spouses/romantic partners), and self and informant convergence correlations were stronger

for more intimate relationships (i.e., family members or partners; deVries, Lee, & Ashton, 2006). Notably, the personality factor of Honesty-Humility, which is strongly negatively related to psychopathy, demonstrated a particularly pronounced increase in self and informant convergence across the different levels of acquaintanceship. In regression analyses in which informant-reports of the HEXACO traits predicted self-reports of psychopathy, level of acquaintance was a significant moderator, providing further support that the convergence between informants views of a target's personality and self-reports of psychopathic traits is stronger in close relationships. This suggests that considerable levels of self and informant-report agreement on traits related to the Dark Triad is possible, particularly with informants who are well acquainted with the target and have known them for a substantial amount of time.

Predictive utility of self and informant-reports

In addition to studying why self and informant-reports of personality may differ, another important question regarding interpersonal perception is which respondent's report is more useful. One way to compare their validity is through a comparison of their relations to meaningful outcomes. This is also relevant to investigating insight, as a lack of insight regarding normal or pathological personality traits would likely compromise the relations between reports of the traits. Research regarding self and informant-reports of pathological traits suggests that both reports provide unique information regarding relevant outcomes. In an adult psychiatric sample, informant-reports of pathological personality was shown to predict current and future levels of social functioning even while controlling for self-reports of these traits (Ready, Watson, & Clark, 2002). This finding was replicated in another psychiatric sample, in which informant-rated personality scores accounted for an additional eight to 20% of the variance in PD features above and beyond-self reports (Miller, Pilkonis, & Clifton, 2005). In a study investigating self

and informant-reports of PD in a follow-up study with a depressed sample, both self and informant-reports of PD were associated with worse outcomes, but informant-reports were the most useful predictor of social impairment (Klein, 2003).

Studies investigating the predictive validity of self and informant-reports regarding the Dark Triad have provided mixed findings. In one study investigating psychopathy, peer-reports provided limited incremental validity over self-reports of psychopathic traits in predicting a total score of self-reported antisocial behavior (Fowler & Lilienfeld, 2007). In another study investigating the incremental validity of self and informant-reports of psychopathy, self-reports provided more unique information compared to informant-reports in predicting certain externalizing behaviors, particularly substance abuse and gambling (Jones & Miller, 2012), whereas informant reports provided incremental validity in predicting intimate partner violence. When self and informant-reports of FFM traits were used to predict personality pathology, informant-reports of FFM traits demonstrated superior ability to predict antisocial and narcissistic PD compared to self-reports, particularly informant-reports of agreeableness and conscientiousness (Carlson, Vazire, & Oltmanns, 2013). Notably, self and informant-reports provided approximately the same amount of unique information and were equally valid predictors of overall personality pathology, consisting of an average score across all 10 DSM-IV PDs. In sum, the available evidence suggests moderate levels of agreement for self and informant-perceptions of personality traits and pathology, and suggests that each may provide unique information regarding relevant outcomes. Preliminary evidence also suggests that the relative predictive validity of self and informant-reports of pathological personality may depend on the outcome.

Lack of insight or lack of agreement?

Another issue regarding the modest convergence typically found between self and informant-reports of personality may be that self-reports ask individuals to report how they see themselves, not how they believe others see them. The more modest convergence typically found for personality pathology has been interpreted as evidence that supports clinical conceptualizations that suggest that PDs are characterized by a lack of insight. However, comparing self and informant-reports of traits may not be a direct test of insight, as self-reports measures are only querying for the individuals' view of themselves. Lack of convergence, in turn, could be due to issues with lack of insight (on the self or informant part) *as well as* disagreement about trait profiles. That is, it is possible people have insight into how others perceive them but simply disagree with that characterization. For instance, an individual could know that others perceive him or her as narcissistic but believe that this is an inaccurate description.

A typical self-report personality questionnaire item involves a statement about personality, often in the first-person, and the respondents are asked the degree to which they agree that statement describes themselves. For instance, in the Self-Report Psychopathy Scale (SRP-III; Paulhus, Neumann, & Hare, in press), instructions state to "Please rate the degree to which you agree with the following statements about you" and Item 1 reads, "I am a rebellious person." Most respondents (correctly) assume that the researcher is interested in their own perceptions regarding their traits and the degree to which they perceive themselves as being rebellious. Respondents' perceptions of themselves, while likely related, may differ in important ways from their perceptions of how others see them on a given trait. These perceptions have been termed "meta-perceptions" (Laing, Philipson, & Lee, 1966). For instance, an individual

may perceive himself as being a relatively risk averse, non-rebellious individual while simultaneously understanding that others perceive him as being rebellious. Ultimately, respondents likely have some insight into how they are viewed by others in regard to both general and pathological personality (i.e., meta-perceptions), but do not perceive typical self-report questionnaire items to be requesting that they incorporate information relating to how they believe others view them into their response.

Studies that directly assess target's meta-perceptions may help address issues related the level of insight individuals have into both general and pathological personality traits, including the Dark Triad. Comparing meta-perception based reports of personality, or how people believe others see them, to "classic" self-reports in relation to informant-reports, allows for a direct test of the extent to which people are accurate in understanding how they are perceived by others. Investigating meta-perceptions of pathological personality traits, particularly the Dark Triad, is important in order to directly test the long-held notion that PDs are characterized by a lack of insight. Individuals with elevated pathological personality traits may have insight into how others view them, but simply disagree and have a discrepant self-view, and this self-perception is the sole information garnered by typically worded self-report questionnaires that are used in personality and PD research.

Meta-perceptions of personality

A growing empirical literature has begun to investigate meta-perceptions in regard to normal personality traits, and the evidence suggests that people do have some insight into how others generally view them (Kenny & DePaulo, 1993). People demonstrate meta-accuracy, or insight into how they are perceived by others, in regard to general personality traits, as mean meta-accuracy estimates across the FFM domains were .51 for family, .44 for friends, and .39 for

coworker in a previous study (Malloy, Albright, Kenny, Agatstein, & Winquist, 1997). Mean convergence of self and informant-reports across the FFM domains was .43, .34, and .35, respectively. A study using a sample of 15 roommate groups replicated the finding that people are quite accurate at discerning how they are generally perceived by others, as demonstrated by a mean meta-accuracy of .63 across FFM domains (Levesque, 1997). Perceiver effects, or differences among perceivers' general view of all targets, were strongly related to self-reports, suggesting that individuals may assume that others view them similarly to how they view themselves.

Previous research suggests that people overestimate the level of consistency in how different informants view them (Kenny & DePaulo, 1993). This finding led the authors to suggest that people do not have true insight into how they are generally viewed, but only guess based on how they view themselves However, recent investigations are inconsistent with this view. For instance, people are able to correctly predict that individuals who know them through different social contexts have different perceptions of them (Carlson & Furr, 2009), suggesting some ability to use information aside from global self-perceptions. In an investigation of FFM traits across a series of different social contexts, multiple regression analyses indicated that meta-perceptions of traits explained more unique variance in informant-perceptions than self-reports explained, providing further evidence that people have some insight into the differences between how they view themselves and how others view them (Carlson, Vazire, & Furr, 2011). This suggests that individuals can hold multiple understandings of their own personality, including how they view themselves as well as how others perceive them.

Informant-perceived meta-perceptions

Similar to how individuals may hold multiple forms of knowledge regarding how they view themselves and how others view them (e.g., Carlson, Vazire, & Furr, 2011), informants may hold multiple forms of knowledge regarding the target's personality. Traditional informant-report assessments request the informant's view of the target individual and previous research provides support that informants may hold information about the targets personality above and beyond the traditional informant-report view. Specifically, in a study which compared traditional informant-reports with an assessment strategy in which informants were asked to rate their perception of the target's self-view, results suggested that that these informant-perceived self-perceptions provided incremental validity above and beyond traditional informant-reports in predicting self-reports of personality traits (Simms, Zelazny, Yam, & Gros, 2010). Notably, the strongest incremental validity was found for traits with more evaluative components, suggesting that informant-reports of such traits can be improved by asking the informant to consider the target's self-perception. The present study will extend this finding to investigate informant-perceived meta-perceptions, or how informants think that the individual believes that he or she is perceived. Informant-perceived meta-perception has not been investigated in extant research. Comparing this facet of interpersonal perception with meta-perception would allow for the investigation of the level of accuracy that informants demonstrate in understanding how individuals believe that they are viewed in regard to Dark Triad personality styles and Big Five traits.

Given the previous findings suggesting meaningful differences between different types of informant-reports (Simms et al., 2010), it is plausible that informant-perceived meta-perceptions could be discrepant in some way from traditional informant-reports. For instance, Johnny may

view his friend Derek as being low in negative affectivity and high in agreeableness, but thinks that Derek believes that others generally view him as high in negative affectivity and low in agreeableness. Asking Johnny for his perspective on Derek (i.e., agreeable and emotionally stable), may limit convergence between meta-perceptions and informant-reports, whereas informant-perceived meta-perceptions (i.e., Johnny knows Derek believes that others view him as disagreeable and neurotic) may allow for greater convergence.

Meta-perceptions of pathological personality

Only a few extant studies have investigated meta-perceptions in regard to pathological personality traits, styles, or official disorders. The first involved a sample of Air Force recruits who lived and trained together for six weeks for basic training (Oltmanns et al., 2005). Participants provided self-report, peer-report, and meta-perceptions of pathological personality as assessed via the Multi-Source Assessment of Personality Pathology (MAPP; Oltmanns, Turkheimer, & Strauss, 1998). Meta-perceptions of the MAPP traits predicted variability in peer-reports above and beyond self-reports for all 10 PD diagnostic traits, suggesting that people do have insight into how they are viewed by others in regard to personality pathology that provides incremental utility above and beyond general self-reports. In a series of studies investigating meta-perceptions of narcissistic traits, the relation between narcissism and self-reports of positive traits (i.e., intelligence, attractiveness, humor) was stronger than the relation between narcissism and meta-perceptions of positive traits, suggesting that individuals high on narcissistic traits have insight that others may not view them as positively as they see themselves (Carlson, Vazire, & Oltmanns, 2011). These studies also provided evidence that individuals high on narcissistic traits have some level of insight into the more complex relations between these traits and interpersonal processes. In one of the aforementioned studies, unacquainted students in groups that

participated in group discussions each week provided self, peer, and meta-perception reports of narcissism and other personality traits, and individuals high on narcissistic traits demonstrated insight that their peers viewed them in increasingly negative ways over time.

Consistent with these findings, another study found that meta-perceptions of narcissism demonstrated stronger relations with peer-reports than self-reports in a round robin design, suggesting that individuals high on narcissistic traits have some awareness that others view them in a manner that differs from their own self-perceptions (Lukowitzky & Pincus, 2013). The extant empirical literature surrounding meta-perceptions and pathological traits provides preliminary evidence that individuals do demonstrate insight into how their personality pathology is viewed by others above and beyond their own view of themselves, both for DSM diagnostic classes (Oltmanns et al., 2005) and trait narcissism (Carlson, Vazire, & Oltmanns, 2011; Lukowitzky & Pincus, 2013).

The present study

The present study investigates how Dark Triad personality styles, as well as the general trait building blocks of these styles/disorders, are viewed from multiple perspectives, including self-report, informant-report, meta-perception, and informant perceived meta-perception. Three studies have been previously conducted on meta-perceptions and pathological personality (Oltmanns et al., 2005; Carlson, Vazire, & Oltmanns, 2011; Lukowitzky & Pincus, 2013), and the results suggest that individuals do hold some knowledge of how their traits are viewed above and beyond their own perceptions.

Mean level differences

An investigation of who reports higher levels of the Dark Triad personality styles, and the Big Five traits that may underlie the Dark Triad, provides an important test of theories regarding

interpersonal perception. If Dark Triad personality styles are associated with deficits in insight, scores from self-reports of these constructs should be lower than scores from informant-reports. Given previous findings that individuals endorse higher levels of narcissistic traits compared to peer-reports (Oltmanns, Gleason, Klonsky, & Turkheimer, 2005; Lukowitzy & Pincus, 2013), it is hypothesized that self-reports will demonstrate the highest mean level of symptoms across the Dark Triad measures. Based on the SOKA Model (Vazire, 2010), it is hypothesized that self-reports will demonstrate lower mean levels of trait agreeableness and higher mean levels of neuroticism. Given evidence that individuals understand how they are viewed above and beyond how they view themselves (e.g., Carlson, Vazire, & Oltmanns, 2011), it is hypothesized that informants understand how others believe that they are viewed, above and beyond how the informants personally view them. As such, it is hypothesized that informant-perceived meta-perceptions and meta-perceptions will demonstrated comparable mean levels of Dark Triad personality styles and Big Five traits.

Convergence among reports

The convergence among self, informant-reports, meta-perceptions, and informant perceived meta-perceptions for Dark Triad personality styles and Big Five domains will be investigated. Based on previous findings, it is hypothesized that self-reports and meta-perceptions will be closely related (Malloy et al., 1997). While it is hypothesized that the differences between these two reports will not be large, it is also hypothesized that the differences present will be substantial enough to provide incremental validity regarding informant-report of the Dark Triad and Big Five, consistent with previous meta-perception research (e.g., Carlson, Vazire, & Furr, 2011). Based on previous research on self and informant-report convergence for personality pathology (e.g., Oltmanns, Gleason, Klonsky, &

Turkheimer, 2005; Connelly & Ones, 2010), it is hypothesized that levels of self and informant convergence will vary across Dark Triad and Big Five traits from approximately .35 to .45.

Previous literature has demonstrated that meta-accuracy can differ if the informant-report is a family member, friend, or coworker (Malloy, Albright, Kenny, Agatstein, & Winquist, 1997). As such, the present study will investigate two different types of informant-reports, peer and parent, in order to see if there are notable differences across meta-perceptions and meta-accuracy of Dark Triad personality styles and Big Five traits within the contexts of these relationships. In a previous study comparing consensus across social groups on FFM traits, family demonstrated stronger self and informant convergence than a peer group (Malloy, Albright, Kenny, Agatstein, & Winquist, 1997). As such, it is hypothesized that self and parent-reports will demonstrate higher levels of convergence for Dark Triad personality styles and Big Five traits.

Given that meta-accuracy represents the extent to which people know how others see them, convergence between meta-perceptions and informant-reports of Dark Triad personality styles and Big Five traits will be investigated in order to identify levels of meta-accuracy. A meta-analytic review of studies investigating meta-accuracy found that meta-accuracy was stronger than self-informant agreement for 15 of the 21 studies conducted on this area (Carlson, Vazire, & Furr, 2011). Preliminary evidence also suggests that meta-accuracy is higher than self-informant agreement for personality pathology (Oltmanns, Gleason, Klonsky, & Turkheimer, 2005; Lukowitzy & Pincus, 2013). It is hypothesized that for all Dark Triad personality styles and Big Five traits meta-perceptions and informant-reports will demonstrate a higher level of convergence compared to self and informant-reports.

Informant-perceived meta-accuracy, or the extent to which informants know how the participants believe that others view them, will also be investigated for the Dark Triad personality styles and Big Five traits. While there is no extant empirical investigations on informant perceived meta-perceptions, it is hypothesized that, consistent with previous findings regarding meta-accuracy (Carlson, Vazire, & Furr, 2011), informant-perceived meta-accuracy will demonstrate higher agreement than the agreement between self-reports and informant-perceived meta-perceptions.

Predictive validity

Due to substantial convergence typically found between self-reports and meta-perceptions of normal traits (e.g., Malloy et al., 1997), some have argued that people can only guess how others view them because they assume it is how they see themselves (Kenny & DePaulo, 1993). As such, the present study will also investigate how much information meta-perceptions and self-reports explain regarding the prediction of informant-reports. Given compelling evidence that meta-perceptions of normal personality traits provides unique information in regard to informant-reports over and beyond self-reports (e.g., Carlson, Vazire, & Furr, 2011), it is hypothesized that self-reports and meta-perceptions will both be significant predictors of informant-reports for all Dark Triad personality styles and Big Five traits.

CHAPTER 2

METHODS

Participants and procedures:

Participants included 993 undergraduate students (40% male) between the ages of 18 and 29 (M = 19.33, SD = 1.57) at the University of Georgia, recruited from SONA Systems, a web-based experiment scheduling and tracking system. The majority of participants were Caucasian (80.8%); of the remaining participants, 9.7% were African American, 7.9% were Asian, and .9% were Bi-racial. Participants received class credit for participation. The University of Georgia institutional review board approved the protocol. Each of the relevant Dark Triad measures was adapted for each different aspect of interpersonal perception, including self-report, informant-report, meta-perception, and informant-perceived meta-perception. For example, item 1 from the Self-Report Psychopathy Scale item (SRP-III; Paulhus, Neumann, & Hare, in press) reads, "I am a rebellious person." This item for informant-report reads, "My friend is a rebellious person." This item for the meta-perception report reads, "Others view me as a rebellious person." This item for parent perceived meta-perception report reads, "My child would say that others view him/her as a rebellious person."

After providing informed consent, participants completed an online questionnaire assessing demographic information, self-report and meta-perception of the Dark Triad, and self-report and meta-perception of the Big Five. Specifically, they completed both self-report and meta-perception report for the Self-Report Psychopathy Scale: Version III (SRP-III; Paulhus, Neumann, & Hare, in press), Narcissistic Personality Inventory (NPI; Raskin & Terry, 1998), the MACH-IV (Christie & Geis, 1970), and the Ten Item Personality Measure (TIPI; Gosling,

Rentfrow, & Swan, 2003). The participants were also asked to provide two peer and two parent email addresses.

The email addresses provided were then used to send an email to both the peers and parents that contained a link connecting to the questionnaires, including the SRP-III, NPI, MACH, and TIPI questionnaires. A random number generator was used to randomly assign informants to either traditional informant report or informant-perceived meta-perception. The peers and parents were informed that their participation was entirely voluntary and that their responses would be kept confidential. Fifty five percent of participants had either type of parent-report, and 41% of participants had either type of peer-report. Given that informants were randomly assigned to complete either traditional informant report or informant-perceived meta-perception in order to reduce bias, 27% of participants had a parent-report, 28% of participants had a parent-perceived meta-perception report, 22% of participants had a peer-report, and 19% of participants had a peer-perceived meta-perception report.

Measures

Demographic Form

A brief demographic questionnaire was administered to all participants assessing race, education level, and age.

MACH-IV

The MACH-IV (Christie & Geis, 1970) is a 20-item measure of the personality trait of Machiavellianism in which participants rate how strongly they agree with items from 1 (strongly disagree) to 5 (strongly agree). Example items include “It is hard to get ahead without cutting corners here and there” and “Anyone who completely trusts anyone else is asking for trouble.” The MACH-IV is the most frequently used measure of this personality style in the literature on

the Dark Triad (e.g., Paulhus & Williams, 2002), and has been used in over 500 studies. The MACH-IV has been shown to predict behaviors such as cheating, stealing, lying, and other forms of manipulation (Fehr, Samsom, & Paulhus, 1992). Coefficient alpha for the MACH and all other measures for all raters, including self-reports, informant-reports, meta-perceptions, and informant-perceived meta-perceptions, are provided in Table 1.

Narcissistic Personality Inventory (NPI)

The NPI (Raskin & Terry, 1988) is a 16-item, forced-choice, self-report measure of trait narcissism that generates a global narcissism score. A sample item includes the forced choice between the following two options: "I am no better or no worse than most people," or "I think I am a special person." The NPI demonstrates substantial convergence with interview-based ratings of Narcissistic Personality Disorder symptoms (e.g., Miller, Gaughan, Pryor, Kamen, & Campbell, 2009).

Self-Report Psychopathy Scale: Version III

The SRP-III (SRP-III; Paulhus, Neumann, & Hare, in press) is a 64-item measure of psychopathy in which participants rate the degree to which a statement describes them from 1 (disagree strongly) to 5 (agree strongly). Sample items include, "I've often done something dangerous just for the thrill of it," and "I'm a soft-hearted person" (reverse-scored). This widely-used measure of psychopathy demonstrated strong convergence with other psychopathy measures (e.g., Gaughan, Miller, Pryor, & Lynam, 2009).

Ten Item Personality Measure (TIPI)

The TIPI (Gosling, Rentfrow, & Swan, 2003) is a 10-item measure of the Five Factor dimensions of personality, with two items per each of the factors. Items are rated on a scale of 1

(disagree strongly) to 7 (agree strongly). This brief measure has demonstrated test-retest reliability and convergence between self and observer ratings (Gosling et al., 2003).

CHAPTER 3

RESULTS

Reliability of the DT and Big Five scales across raters

Coefficient alphas were calculated for the DT and Big Five scales across the different raters, including self-reports, meta-perceptions, peer-reports, peer perceived meta-perceptions, parent-reports, and parent perceived meta-perceptions (Table 1). The average alpha across the DT scales for the different raters was .79, .82, .82, .78, and .81, respectively. For the SRP, alphas across the different raters ranged from .91 to .95 with a median of .94. Alphas across the different raters for the MACH ranged from .72 to .82 with a median of .77. For the NPI, alphas across the different raters ranged from .68 to .74 with a median of .71.

The average alpha across the five Big Five domains for self-reports, meta-perceptions, peer-reports, peer perceived meta-perceptions, parent-reports, and parent perceived meta-perceptions was .49, .51, .58, .52, .54, and .57, respectively. For Neuroticism, alphas across the raters ranged from .54 to .61 with a median of .56. For Extraversion, alphas across the raters ranged from .65 to .75 with a median of .68. For Openness, alphas across the raters ranged from .36 to .42 with a median of .41. For Agreeableness, alphas across the raters ranged from .40 to .50 with a median of .46. For Conscientiousness, alphas across the raters ranged from .50 to .64 with a median of .57.

Relations among DT measures across raters

To control for type I error, the significance level was set to $p \leq .01$. For all average correlation calculations, individual correlations were first transformed using the Fisher's-*Z* transformation before being averaged and transformed back into Pearson correlations. The

correlations between the DT scales were calculated for each rater (Table 2). The correlation between SRP-III and MACH ranged from .53 to .70 across the raters, with an average correlation of .63. The correlation between SRP-III and NPI ranged from .22 to .47 across the raters, with an average correlation of .33. The correlation between the MACH and NPI ranged from .08 to .29 across the raters, with an average correlation of .20.

Absolute convergence for the DT and Big Five

Paired sample t-tests were conducted in order to compare the means of the different versions of the SRP-III, MACH, NPI, and TIPI, including self-reports, meta-perceptions, peer reports, peer perceived meta-perceptions, parent-reports, and parent perceived meta-perceptions. Given that these are paired comparisons, the t-tests used a more limited number of participants who were in the cell in which both reports were completed (i.e., self-report and parent-report); as such the means and standard deviations differ to some degree and are provided along with the t-scores and effect sizes (Table 3). Across the 24 comparisons for the DT scales, with eight comparisons of raters for each of the three DT scales, there were 14 significant differences. Self-reports were significantly different than meta-perceptions, peer-reports, and parent-reports for the MACH and NPI, such that self-reports endorsed more Machiavellianism (*d*s = .12, .29, and .88, respectively) and less narcissism (*d*s = -.14, -.46, and -.40, respectively). Self-reports were also significantly different than parent-reports on the SRP-III, such that self-reports endorsed higher levels of psychopathy (*d* = .63). Peer-reports were significantly different than parent-reports for the MACH (*d* = .60).

Meta-perceptions were significantly different from peer-reports and parent-reports for the NPI (*d*s = -.24, -.26, respectively), such that meta-perceptions endorsed less narcissism than either peer or parent-reports. Conversely, meta-perceptions were also significantly different from

parent-reports on the SRP (*d* = .60) and the MACH (*d* = .68), such that meta-perceptions endorsed a higher level of these traits. There were no significant differences between meta-perceptions and peer-perceived meta-perceptions for any of the DT scales. Meta-perceptions were significantly different than parent-perceived meta-perceptions for both the SRP-III (*d* = .52) and the MACH (*d* = .55), such that meta-perceptions endorsed higher levels of psychopathic and Machiavellian traits that parent perceived meta-perceptions.

Across the 40 comparisons for the Big Five domains, there were 20 significant differences (Table 4). Self-reports were significantly different than meta-perceptions and peer-reports for neuroticism such that self-reports endorsed higher levels of this trait (*d*s = .07, .22, respectively). Self-reports were also significantly different than peer-reports for extraversion (*d* = -.25). Self-reports were significantly different than parent-reports for all five Big Five domains, such that self-reports endorsed more neuroticism (*d* = .42), less extraversion (*d* = -.16), less openness (*d* = -.41), less agreeableness (*d* = -.26), and less conscientiousness (*d* = -.31). There were no significant differences between peer and parent-reports.

Meta-perceptions were significantly different from peer-reports only for extraversion (*d* = -.19). Meta-perceptions were also significantly different from parent-reports for all five Big Five domains, such that meta-perceptions endorsed more neuroticism (*d* = .36), less extraversion (*d* = -.11), less openness (*d* = -.50), less agreeableness (*d* = -.25), and less conscientiousness (*d* = -.38). Meta-perceptions were significantly different from peer-perceived meta-perceptions only for neuroticism (*d* = .27). Meta-perceptions were significantly different from parent-perceived meta-perceptions for all five Big Five domains, such that meta-perceptions endorsed more neuroticism (*d* = .44), less extraversion (*d* = -.22), less openness (*d* = -.40), less agreeableness (*d* = -.40), and less conscientiousness (*d* = -.49).

Relative convergence for the DT and Big Five

Correlations between the different raters for the DT and Big Five scales were calculated (Table 5). Self-reports and meta-perceptions demonstrated a high degree of convergence across the DT scales, with an average correlation of .75 for the DT scales and .74 for the Big Five domains. Peer and parent-reports demonstrated moderate convergence, with an average correlation of .34 for the DT scales and .28 for the Big Five domains.

Meta-accuracy for each scale was computed via the correlation between meta-perceptions and informant (either parent or peer) perceptions of the same trait. Average meta-accuracy for DT scales was .38 for peer-reports and .29 for parent-reports. Self-reports demonstrated similar average levels of convergence with informant-reports. Specifically, self-reports and peer-reports demonstrated an average correlation of .37 and self-reports and parent-reports demonstrated an average correlation of .32. Dependent sample t-tests were calculated in order to test if the individual correlations between meta-perceptions and informant-reports were significantly different from the correlations between self-reports and informant-reports, and there were no significant differences between these correlations on any of the DT scales for either peer or parent-reports.

Self-reports and meta-perceptions also demonstrated a high degree of convergence across the Big Five scales, with an average correlation of .74. Average meta-accuracy was .39 for peer-reports and .37 for parent-reports across the Big Five domains. Self-reports demonstrated similar average levels of convergence with peer and parent-reports (*r*s = .35 and .34, respectively). Dependent sample t-tests comparing the correlations between meta-perceptions and informant-reports and self-reports and informant-reports found one significant difference, such that meta-

perceptions demonstrated a stronger level of convergence with peer-reports of agreeableness than self-reports (*r*s = .45 and .36, respectively).

Next, the convergence found between informant-perceived meta-perceptions and meta-perceptions and the convergence between informant-reports and meta-perceptions were investigated via their correlations across DT and Big Five scales. Informant-perceived meta-accuracy for each scale was computed via the correlation between meta-perceptions and informant-perceived meta-perceptions (either peer or parent) of the same trait. Average informant-perceived meta-accuracy for DT scales with .41 for peer-reports and .33 for parent-reports.

Given that the informants were randomly assigned to either informant report or informant-perceived meta-perception, comparing these reports was not a matched pair design; as such Fisher's Z-test was used to test if the correlations were significantly different. Specifically, correlations between meta-perceptions and informant-reports were compared to the correlations between meta-perceptions and informant-perceived meta-perceptions to see if there were significantly different, and there were no significant differences between these correlations on any of the DT scales for either peer or parent-reports. For the Big Five scales, average informant-perceived meta-accuracy was .28 for peer-reports and .37 for parent-reports. There was one significant difference between the correlations between meta-perceptions and peer-reports with the correlations between meta-perceptions and peer-perceived meta-perceptions, such that meta-perceptions and peer-reports of agreeableness demonstrated stronger convergence than meta-perceptions and peer-perceived meta-perceptions (*r*s = .45 and .17, respectively).

The average correlation between self-reports and informant perceived meta-perceptions across the DT scales was .40 for peer-reports and .31 for parent-reports. Fischer's Z test was

used to compare these correlations with those found for self-reports and informant-reports. There were no significant differences between the correlations between self-reports and peer-reports with the correlations between self-reports and peer-perceived meta-perceptions. Comparison of the correlations between self-reports and parent-reports with self-reports and parent-perceived meta-perceptions identified two significant differences, such that self-reports and parent-reports demonstrated stronger convergence for the NPI compared to self-reports and parent-perceived meta-perceptions (*r*s = .40 and .22, respectively), whereas the converse was true for MACH (*r*s = .20 and .33, respectively).

The average correlation between self-reports and informant-perceived meta-perceptions across the Big Five scales was .33 for peer-reports and .37 for parent-reports. There were no significant differences between the correlations between self-reports and peer-reports with the correlations between self-reports and peer-perceived meta-perceptions. For parent-reports, self-reports and parent-perceived meta-perceptions of Big Five Openness demonstrated stronger convergence than self-reports and parent-reports (*r*s = .37 and .23, respectively).

Predictive validity of meta-perceptions in predicting informant-reports of the DT and Big Five

A series of simultaneous multiple regression analyses were conducted in which self and meta-perceptions of the SRP-III, NPI, MACH, and TIPI predicted peer or parent-reports of the same scale. For the DT scales, self-reports and meta-perceptions accounted for between 4 and 21% of the variance in peer or parent-reports of the same scale (Table 6). T-tests were used to test the difference between the betas for self-reports and meta-perceptions in predicting informant reports, and results indicated that the betas were significantly different in three of the six, or 50%, of the cases. The beta weights for self-reports and meta-perceptions were not

significantly different from one another when predicting both peer and parent-reports of the SRP-III. The beta weights for self-reports and meta-perceptions were significantly different from one another when predicting peer-reports of MACH, such that meta-perceptions made a more significant contribution (βs = .13 and .29, respectively). Conversely, self-reports of the NPI emerged as a significantly stronger predictor than meta-perceptions for both peer-reports (βs = .28 and .12, respectively) and parent-reports (βs = .33 and .09, respectively).

For the Big Five scales, self-reports and meta-perceptions accounted for between six and 40% of the variance in peer or parent-reports (Table 7). Comparison of the betas for self-reports and meta-perceptions demonstrated that they were significantly different from one another in 4 of the 10, or 40%, of the regression analyses, and in each case meta-perceptions were a stronger predictor. Specifically, meta-perceptions were a significantly stronger predictor of parent-reported extraversion (βs = .15 and .49, respectively), peer-reported openness (βs = .04 and .23, respectively), peer-reported agreeableness (βs = .06 and .40, respectively), and parent-reported agreeableness (βs = .07 and .26, respectively).

Finally, simultaneous multiple regression analyses were conducted in which self and meta-perceptions of the Big Five domains predicted peer and parent-reports of the SRP-III, MACH, and NPI. Self-reports and meta-perceptions of the Big Five accounted for zero and 13% of the variance in peer or parent-reports of the DT scales (Table 8). Comparison of the betas for self-reports and meta-perceptions demonstrated that they were significantly different from one another in 15 of the 30, or 50%, of the regression analyses. For 11 of the 15 differences, meta-perceptions were a stronger predictor than self-reports. When predicting peer-reports of SRP-III, the betas for self-reports and meta-perceptions were significantly different in three of the five Big Five regression analyses, including extraversion (βs = -.06 and .27, respectively), openness

(βs = -.07 and .17, respectively), and agreeableness (βs = -.08 and -.30, respectively); in each case meta-perceptions made a larger contribution. When predicting parent-reports of the SRP-III, the betas for self-reports and meta-perceptions were significantly different in 4 of the 5 Big Five regression analyses. Self-reports were a stronger predictor compared to meta-perceptions for neuroticism (βs = -.11 and .04, respectively) and openness (βs = .13 and -.07, respectively) whereas the converse was true for extraversion (βs = -.03 and .11, respectively) and conscientiousness (βs = .03 and -.14, respectively).

When predicting the MACH, comparison of the betas for self-reports and meta-perceptions indicated that meta-perceptions of conscientiousness were a more substantial predictor for both peer-reports (βs = .01 and -.24, respectively) and parent-reports (βs = .14 and -.21, respectively). Additionally, self-reports of extraversion were significantly different than meta-perceptions when predicting peer-report of the MACH (βs = .18 and -.09, respectively). When predicting the NPI, the betas for self-reports and meta-perceptions of extraversion were significantly different in predicting both peer (βs = .09 and -.27, respectively) and parent-reports (βs = .30 and -.11, respectively). The analyses predicting peer-reports of the NPI, self-reports and meta-perceptions also demonstrated three significant differences, for neuroticism (βs = -.19 and .22, respectively), openness (βs = -.05 and .10, respectively), and agreeableness (βs = .03 and -.25, respectively). Across all of the regression equations, self-reports and meta-perceptions were significantly different in 22 of the 46, or 48%, of the comparisons. In 16 of the 22, or 73%, of the significant differences, meta-perceptions were a stronger predictor than self-reports in predicting informant-reports.

CHAPTER 4

DISCUSSION

Personality pathology has long been associated with a presumed lack of insight (Westen, 1997), particularly the types of constructs that comprise the Dark Triad. However, this assumption requires further empirical investigation. Research on this issue has important implications for how we understand the dysfunction related to these constructs as well as how we can most optimally assess them. The purpose of the present study was to investigate how Dark Triad personality styles, as well as the general personality traits that may comprise these constructs, are viewed from multiple perspectives, including self-report, informant-report, meta-perception, and informant perceived meta-perception. Specifically, absolute and relative convergence was compared across the different perspectives, and the ability of self-reports and meta-perceptions to predict informant-reports were investigated.

Absolute convergence across perspectives

One way to investigate the assumption that Dark Triad personality styles are characterized by a lack of insight is to investigate absolute convergence, in which one examines whether mean level differences exist across self-reports and informant-reports. Extant evidence regarding absolute level convergence of personality pathology is mixed; in a review of 12 studies that examined the 10 DSM-IV PDs, six reported higher levels for informant-reports, four reported higher levels for self-reports, and self and informant-reports were comparable in two (Klonsky, Turkheimer, & Oltmanns, 2002). A lack of insight would lead to an under-reporting of Dark Triad symptoms, thus lower mean levels of self-reports compared to informant reports. Results from the present study are inconsistent with this conceptualization, as self-report

assessments were associated with significantly higher mean level of Machiavellian symptoms than meta-perceptions, peer-reports, and parent-reports, and significantly higher mean levels of psychopathy compared to parent-reports, suggesting that people on average perceive themselves as having higher levels of Dark Triad traits than others perceive. These findings are consistent with previous work in which there were very small and inconsistent mean differences on self and informant-reports of psychopathy (Miller, Jones, & Lynam, 2011). The present results are also inconsistent with the view that psychopathy is characterized by a lack of insight, as self-report means were not significantly different from peer-report means, and were significantly lower than parent-report means (d = .88).

Notably, significantly lower levels of narcissism were found for self-reports than meta-perceptions, peer-reports, and parent-reports. However, narcissism, particularly when operationalized via the NPI, can be conceptualized as a mix of adaptive and maladaptive qualities. In addition to its relations with an array of pathological constructs and outcomes (e.g., interpersonal dysfunction, aggression, substance abuse, crime; Miller, Campbell, Pilkonis, 2007; Lakey, Rose, Campbell, & Goodie, 2008), narcissism is characterized by some adaptive qualities, such as a positive association with self-esteem and a negative association with distress (e.g., Miller, Maples, & Campbell, 2010). Another adaptive outcome that narcissism is related to is leadership emergence, or the process through which an individual becomes a leader within a group (Brunell et al., 2008). However, even in the context of leadership, narcissism is related to both positive and negative outcomes. For instance, a study of American presidents found that grandiose narcissism was associated with positive outcomes, such as public persuasiveness, crisis management, and allied behaviors, as well as negative outcomes, such as congressional impeachment resolutions and unethical behaviors (Watts et al., 2013). In previous research, NPI

narcissism was shown to represent a more emotionally resilient and extraverted form of narcissism compared to a measure of Narcissistic Personality Disorder, which captured a more introverted and emotionally unstable form (Miller & Campbell, 2008). As such, the significantly lower mean levels of narcissism found for self-reports may relate more to endorsing significantly less of the extraversion-related, or more adaptive, traits as opposed to the more antagonistic, or maladaptive traits. This could be particularly true for this measure of narcissism, as the NPI contains fewer items related to the dimensions that demonstrate the strongest relations with maladaptive outcomes, such as exploitativeness (e.g., Ackerman et al., 2010).

Consistent with this interpretation, individuals self-reported significantly lower levels of Big Five extraversion than peer or parent-reports (*d*s = -.25, -.16, respectively), suggesting that the higher mean levels of psychopathy and Machiavellianism and lower levels of narcissism found when using self-report assessments may be indicative of individuals' willingness to self-report a broadly less adaptive or flattering personality profile. Two previous studies found that self-reports of narcissism were significantly higher at the mean level compared to peer-reports (Oltmanns, Gleason, Klonsky, & Turkheimer, 2005; Lukowitzy & Pincus, 2013). However, these studies used a DSM NPD based measure of narcissism and the Pathological Narcissism Inventory (Pincus et al., 2009), respectively, suggesting that self-report assessments may endorse yield higher levels of narcissism when it is assessed via a more pathological variant, and lower when it is assessed via the NPI.

Previous research on the mean level differences for self-reports and informant-reports of general personality traits has been inconsistent, with some studies finding no significant mean differences (e.g., Ready & Clark, 2002) and some finding significant differences (Simms, Zelazny, How Yam, & Gros, 2010; Mount, Barrick, & Strauss, 1994). In the present study,

significantly higher levels of neuroticism were found for self-reports compared to meta-perceptions, peer-reports, and parent-reports (*d*s = .07, .22, and .42, respectively), significantly lower mean levels of extraversion than peer and parent-reports (*d*s = -.25 and -.16), and significantly lower mean levels of agreeableness than parent-reports (*d* = -.26). These findings are consistent with the mean level differences of the DT scales, as self-report assessments were associated with a generally less adaptive personality profile. While not all extant research has identified significant mean level differences for self and informant-reports of the FFM (e.g., Ready & Clark, 2002), Simms and colleagues (2010) findings suggested small but significant differences for most traits measured, such that self-report assessments were broadly less positive and more negative than peer-ratings. The findings from the present study are consistent with this finding, suggesting that, on average, self-report based assessments are associated with a broadly less adaptive personality profile than informant-report.

The SOKA model (Vazire, 2010) posits that people are motivated by desires to protect their self-view. Specifically, this model notes that both self and informant-reports are affected by this positivity bias, but that this bias distorts self-reports more significantly than informant-reports. As such, evaluativeness is proposed to be more problematic for self-reports than for informant-reports. The present results are inconsistent with this notion, as well as with the hypothesis that people may know how others view them and simply disagree, potentially in a self-serving manner. In the current study, self-report assessments yielded a significantly less adaptive personality profile than informant-report assessments at the mean level, including significantly higher levels of several negative evaluative traits as compared to informant-reports. Additionally, self-reports and meta-perceptions demonstrated substantial convergence at the mean level. Across eight comparisons, there were significant differences for three, including

MACH, NPI, and Big Five neuroticism. For these three differences, the effect sizes were small (*d*s = .12, -.14, and .07, respectively) and self-report assessments were associated with the less adaptive reports (e.g., more neurotic) except in the case of narcissism, which is complicated by the positive and negative aspects of this construct. This is inconsistent with previous research in which self-report assessments were associated with a self-enhancement effect compared to informant reports. For instance, a previous study had participants rank their own performance and five other group members in a managerial group-discussion task and found that participants evaluated their performance more positively than their performance was rated by peers or assessment staff members (John & Robins, 1994). It is possible that the positivity or self-enhancement bias may distort self-reports on evaluative constructs in contexts or in tasks in which ego needs are activated, such as participating in a group-based task, but may not distort self-reports on evaluative constructs if ego needs are not activated, such as completing self-report questionnaires.

The SOKA model also proposes that "not all others are created equal," such that informant-report accuracy will be impacted by level of acquaintance (Vazire, 2010, p. 285). The results from the present study provide support that not all informant-reports are equivalent, as parent-reports demonstrated less absolute convergence with self-reports than peer-reports. Parent-report means were significantly different from self-report means for all 8 comparisons, whereas peer-report means were significantly different on 3, and the absolute average effect size for parent reports were larger than peer-reports (*d*s = .18 and .43, respectively). The greater absolute convergence with peer-reports suggests that level of acquaintance may not be the only factor that impacts informant-reports, and suggests that positivity bias may impact parent-reports more substantially than peer-reports.

Relative convergence across perspectives

In previous studies, self-reports and meta-perceptions of personality traits have been found to be closely, but not perfectly, related (Malloy et al., 1997). In a previous study, the convergence for self-reports and meta-perceptions of the 10 DSM PDs ranged from .77 to .87 (Oltmanns , Gleason, Klonsky, & Turkheimer, 2005). The findings from the present study are consistent with this finding, such that the average correlation between self-reports and meta-perceptions was .74 for the Dark Triad scales, and .75 for the Big Five domains. This suggests that individuals generally believe that others view them in a manner that is quite similar, but not identical, to how they view themselves with regard to both Dark Triad personality styles and general personality traits.

Consistent with previous research, self and informant-reports of the Dark Triad and Big Five traits demonstrated moderate levels of convergence. In a meta-analysis of 44,178 individuals across 263 samples, the mean convergent correlation for self and informant-reports for the FFM domains ranged from .29 (agreeableness) to .41(extraversion; Connelly & Ones, 2010). Results from the present study demonstrate a similar level of convergence, with the average self-informant correlation across the Big Five scales of .35 for peer-reports and .34 for parent-reports. The current effect sizes are also likely attenuated due to use of a very brief and thus less reliable measure of the Big Five domains (i.e., only two items were used to assess each domain). A previous meta-analysis of 17 studies investigating self and informant convergence of pathological personality traits founds median correlation of .36 for continuous measures (Klonsky, Oltmanns, & Turkheimer, 2002), in the present study the average correlation for self and informant-reports across the Dark Triad scales was .37 for peer-reports and .32 for parent-reports. The present findings are also consistent with previous studies that found substantial

convergence between self and informant-reports of psychopathy (Miller et al., 2011; Miller et al., 2014), providing further evidence inconsistent with the notion that the Dark Triad is characterized by a nearly complete lack of insight.

A previous meta-analytic review of studies found that meta-accuracy, or the convergence between meta-perceptions and informant-reports, was stronger than self-informant agreement for 15 of the 21 studies conducted on this area (Carlson, Vazire, & Furr, 2011). This suggests that individuals have insight into how they are viewed by others above and beyond how they view themselves at the aggregate level. Additionally, there is preliminary that meta-accuracy is higher than self-informant agreement for personality pathology (Oltmanns, Gleason, Klonsky, & Turkheimer, 2005; Lukowitzy & Pincus, 2013). The present study did not find support for meta-accuracy of Dark Triad or FFM traits being stronger than the convergence between self and informant-reports of these traits. For peer-reports, the average convergence with self-reports for the Dark Triad and Big Five domains (*r*s =.37, .35, respectively) was similar to the average convergence with meta-perceptions (*r*s =.38 and .39, respectively). The average convergence of parent-reports with self-reports for the Dark Triad and Big Five domains (*r*s = .32, .34, respectively) was also similar to the average convergence with meta-perceptions (*r*s =.29, .37 respectively), suggesting that overall, meta-accuracy for either informant was not superior to self and informant-reports.

However, comparison of the individual correlations did identify one significant difference, such that the convergence between meta-perceptions and peer-reports of agreeableness was significantly stronger than between self-reports and peer-reports of this trait (*r*s = .45 and .17, respectively). Previous research has identified agreeableness as the most evaluative of the Big Five domains (John & Robin, 1993), and meta-analytic results

demonstrated that agreeableness demonstrated the lowest level of self and informant convergence across the Big Five domains (Connelly & Ones, 2010). The SOKA model (Vazire, 2010) proposes that informant-reports are more accurate than self-reports for evaluative traits, such as agreeableness, as self-reports will be more distorted by self-enhancing bias. This significant difference suggests that people may be more accurate or less distorted at understanding how others view their agreeableness/antagonism compared to how they perceive their agreeableness/antagonism, despite a lack of significant mean level differences between self and meta-perceptions for this trait.

Predictive validity of self-reports and meta-perceptions

In addition to their convergence, another important test of the accuracy of self-reports and meta-perceptions involve their ability to predict informant-reports. In a previous investigation of self-reports and meta-perceptions, meta-perceptions demonstrated an advantage in predicting informant-reports of DSM PDs (Oltmanns, Gleason, Klonsky, & Turkheimer, 2005). In the present study, meta-perceptions were a significantly stronger predictor of peer-reports of Machiavellianism, whereas self-report assessments were a significantly stronger predictor of both peer and parent-reports of narcissism. This suggests that self and meta-perceptions may have different relative merits in predicting informant-reports of the Dark Triad.

A previous investigation found that meta-perceptions explained more variance in informant-reports of the Big Five compared to self-reports (Carlson, Vazire, & Furr, 2011). In the present study, when meta-perceptions and self-report assessments of the Big Five domains were entered simultaneously as predictors of informant-reports of the same domain, significant differences emerged in 4 of the 10 analyses, and in each case meta-perceptions were a significantly stronger predictor. Consistent with previous findings (Carlson, Vazire, & Furr,

2011), this suggests that meta-perceptions provide a consistent advantage in predicting informant-reports of broad level personality domains. Notably, meta-perceptions of agreeableness were a significantly stronger predictor than self-reports of this trait for both peer and parent-reported agreeableness. The SOKA model (Vazire, 2010) posits that self-reports will be distorted by positivity bias and a motivational desire to protect their self-view; as such will be less valid for evaluative traits such as agreeableness. In a previous study, informant-reports of agreeableness demonstrated superior predictive validity for predicting externalizing and antagonistic forms of personality pathology compared to self-reports (Carlson, Vazire, & Oltmanns, 2013), providing support for the notion that self-reports may be less valid in regard to trait agreeableness. The present results provide support that self-report assessments may be impacted by bias for trait agreeableness, but also suggest that individuals may have information about how others perceive them in regard to this evaluative trait that is not garnered through traditional self-reports.

Empirical support exists for the use of dimensional models of personality disorder, and there is significant evidence and support for using the Big Five as a guiding framework for these kinds of models (e.g., Clark, 2007). As such, the ability of self-reports and meta-perceptions to predict informant-reported personality pathology was also investigated, and results were consistent with the previous findings in that meta-perceptions demonstrated an advantage in predicting informant-reports of the Dark Triad. Of the 15 significant differences found in the 30 analyses, 11 (73%) identified meta-perceptions as a significantly stronger predictor. The communalities among the Dark Triad are partially due to a shared negative relation with trait agreeableness. For instance, a meta-analysis demonstrated that all three Dark Triad constructs are characterized by a significant negative relation with agreeableness, with weighted mean

correlations ranging from -.29 (narcissism) to -.42 (psychopathy; O'Boyle et al., in press). Meta-perceptions of agreeableness were a significantly stronger predictor of both peer-reported psychopathy and narcissism, further suggesting that meta-perceptions may provide valuable information regarding the Dark Triad constructs that may not be included in traditional self-report assessments.

Informant-perceived meta-perceptions

The present study included an exploratory investigation of a novel concept that has not been previously investigated: informant perceived meta-perceptions. Similar to how individuals may hold multiple forms of knowledge regarding how they view themselves and how others view them, informants may hold multiple forms of knowledge, including informant-report, or how they view the individual, and informant-perceived meta-perception, or how they believe that the individual believes that he or she is perceived. Comparing meta-perceptions and informant-perceived meta-perceptions allowed for the investigation of the level of accuracy informants demonstrate in understanding how individuals believe they are viewed in regard to dark triad personality styles. The average Cronbach's alpha across the Dark Triad scales for informant perceived meta-perceptions was .82 for peers and .81 for parents, compared to .82 and .78, respectively, for traditional informant-reports. As such, reliability analyses suggested the informants were able to coherently rate their perception of the target's meta-perception at levels similar to traditional informant-reports, providing preliminary evidence for the viability of collecting this type of interpersonal perception.

When investigating mean level differences with informant-perceived meta-perceptions and meta-perceptions, only one significant difference emerged for peer-reports, such that meta-perceptions of neuroticism were significantly higher than peer perceived meta-perceptions (*d*

= .27). Parent perceived meta-perceptions were significantly different than meta-perceptions in seven of the eight comparisons, such that meta-perceptions endorsed more psychopathy, Machiavellianism, and neuroticism, and less extraversion, openness, agreeableness, and conscientiousness. This suggests that parents not only view their children as less broadly pathological, but also believe that their children believe that others view them as less pathologically than children actually believe that others do. Conversely, peer perceived meta-perceptions only demonstrated one significant difference, suggesting that peers have more a more accurate understanding of how targets believe that they are viewed by others. This suggests that positivity bias may impact multiple types of perception that could be provided by parent-reports.

Comparison of the convergence between informant-perceived meta-perceptions and meta-perceptions with the convergence between meta-perceptions and traditional informant-reports identified only one significant difference across 16 comparisons. This suggests that informant perceived meta-perceptions don't confer an advantage overall in understanding how individuals believe that others view them. Notably, the only significant difference was for the convergence between meta-perceptions and peer-reports and meta-perceptions and peer perceived meta-perceptions for agreeableness, such that the former demonstrated a stronger convergence (*r*s = .45, .17).

Limitations and Future Directions

One limitation of the current results is the use of an undergraduate sample, which may have impacted the generalizability of the findings or led to a restriction of range for certain variables. Future research should investigate these questions in different samples, including clinical or forensic samples. Another limitation is that the Five Factor Model was measured by the TIPI, a brief scale that utilizes very few items per domain and thus typically demonstrates lower less reliability. Given that the present results suggest an advantage to meta-perceptions of the Big Five over self-reports in predicting informant-reports, these results could be an underestimation of this advantage. However, future research should replicate these findings using a more reliable measure of these traits.

As noted by John & Robins (1994), any investigation of the accuracy of self-reports is limited by the "criterion problem," in which there is not a clear objective criterion against which self-reports can be compared. While predicting informant-reports can provide some meaningful information regarding the relative accuracy of self-reports and meta-perceptions, informant-reports also consist of potential biases and limitations. As such, future research should investigate self-reports and meta-perceptions in predicting a wide array of potential outcomes, including behavioral criteria or behavior assessed within a laboratory based paradigm. Although results from the present suggest that meta-perceptions do demonstrate some advantage compared to self-reports, it was not consistently superior to self-reports, as such future research investigating their ability to predict a wide array of outcomes could also clarify the relative advantages of self-report assessments versus meta-perceptions.

Conclusions

Understanding different aspects of interpersonal perception regarding the Dark Triad has significant implications for assessing and understanding these pathological personality styles. Additionally, a direct test of how individuals perceive themselves versus how they believe that others view them allows for empirical investigation of insight, and has important theoretical implications for understanding the process through which individuals understand and perceive their own personality. Results from the present study suggest that overall, self-reports and meta-perceptions are quite similar to one another, as demonstrated by few mean level differences and substantial convergence with one another. Additionally, the relative convergence between meta-perceptions and informant –reports was very similar to the convergence between self and informant-reports across the Dark Triad and Big Five scales. The present findings are also inconsistent with the notion that individuals may be unwilling or unable to endorse evaluative traits in self-reports, as self-reports and at times meta-perceptions endorsed a broadly less adaptive personality profile compared to informant-reports.

Despite this similarity between self-reports and meta-perceptions, when used to predict informant-reported personality, they did demonstrate significant differences. Across all of the regression equations, self-reports and meta-perceptions were significantly different in 22 of the 46, or 48%, of the comparisons. In 16 of the 22, or 73%, of the significant differences, meta-perceptions were a stronger predictor than self-report assessments in predicting informant-reports. Meta-perceptions were consistently a more significant predictor of informant-reports of the same Big Five domain, with meta-perceptions of agreeableness emerging as significantly stronger predictors of peer and parent-reports of agreeableness, as well as peer-reports of psychopathy and narcissism. This suggests that individuals do hold multiple understandings of

their own personality, and can provide information regarding how others view their general and pathological personality traits above and beyond their own view if asked. These findings add to a growing body of research suggesting that the long held assumption that personality disorders are characterized by a lack of insight may not be accurate (e.g., Carlson, Vazire, Oltmanns, 2011). The present results are also notable given the centrality of traits agreeableness/antagonism to understanding the Dark Triad constructs (O'Boyle et al., in press), and suggests that researchers and clinicians may benefit from assessing these traits in a meta-perception format as opposed to traditional self-reports.

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TABLES

Table 1

Reliability of the DT and Big Five scales across raters

	Self	Meta	Peer	PeM	Parent	PaM
DT						
SRP	.94	.95	.95	.94	.91	.93
MACH	.72	.78	.82	.77	.75	.80
NPI	.71	.73	.68	.74	.69	.70
Average	.79	.82	.82	.82	.78	.81
Big Five Domains						
N	.56	.54	.61	.55	.59	.54
E	.65	.67	.68	.65	.69	.75
O	.36	.41	.42	.34	.42	.40
A	.40	.41	.59	.43	.46	.50
C	.50	.50	.62	.64	.52	.64
Average	.49	.51	.58	.52	.54	.57

Note. DT = Dark Triad; SRP = Self-Report Psychopathy Scale; MACH = MACH-IV; NPI = Narcissistic Personality Inventory; FFM = Five Factor Model; N = Neuroticism; E = Extraversion, O = Openness; A = Agreeableness, C = Conscientiousness; PeM=Peer perceived meta-perception; PaM= Parent perceived meta-perception

Table 2

Correlations among DT

	SRP/MACH	SRP/NPI	MACH/NPI
Self	.53	.47	.24
Meta	.64	.41	.29
Peer	.70	.32	.21
PeM	.61	.28	.25
Parent	.64	.28	.14
PaM	.63	.22	.08
Average	.63	.33	.20

Note. DT = Dark Triad; SRP = Self-Report Psychopathy Scale; MACH = MACH-IV; NPI = Narcissistic Personality Inventory; PeM=Peer perceived meta-perception; PaM= Parent perceived meta-perception

Table 3

Paired sample t-test DT

SRP						MACH				NPI			
	N	M	SD	T	d	M	SD	t	d	M	SD	t	d
Self		145.63	30.61			53.92	7.64			5.19	3.11		
Meta	974	144.51	32.50	1.95	.04	52.92	8.69	4.83**	.12	5.63	3.27	-5.92**	-.14
Self		136.79	28.19			53.31	7.97			4.89	3.17		
Peer	213	134.19	31.27	1.20	.09	50.83	9.28	3.57**	.29	6.32	3.02	-5.96**	-.46
Self		139.83	28.00			53.09	7.73			5.01	3.24		
Parent	267	123.44	23.89	9.10**	.63	46.16	7.90	11.38**	.88	6.27	3.10	-5.93**	-.40
Peer		134.14	31.10			51.12	8.39			6.38	3.05		
Parent	76	126.23	25.54	2.20	.28	46.15	7.98	4.78**	.60	6.54	3.08	-.39	-.06
Meta		135.91	31.66			51.69	8.57			5.55	3.41		
Peer	213	134.08	31.36	.80	.06	50.86	9.29	1.20	.09	6.32	3.03	-2.98**	-.24
Meta		140.13	30.45			51.97	9.08			5.43	3.32		
Parent	270	123.61	23.89	8.60**	.60	46.16	7.90	8.75**	.68	6.27	3.10	-3.72**	-.26
Meta		137.26	27.66			51.67	8.28			5.10	3.06		
PeM	178	139.42	31.63	-.93	-.07	51.94	8.59	-.37	-.03	5.61	3.36	-2.05	-.16
Meta		140.45	31.17			52.32	8.18			5.27	3.16		
PaM	271	125.39	26.14	7.69**	.52	47.72	8.69	7.60**	.55	5.50	3.08	-1.02	-.07

Note. *$p \leq .01$; **$p \leq .001$. DT = Dark Triad; SRP = Self-Report Psychopathy Scale; MACH = MACH-IV; NPI = Narcissistic Personality Inventory; PeM=Peer perceived meta-perception; PaM= Parent perceived meta-perception; M = Mean; SD = Standard deviation

Table 4

Paired sample t-test FFM domains

		N				E				O				A				C			
	N	M	SD	t	d	M	SD	t	d	M	SD	t	d	M	SD	t	d	M	SD	t	d
Self		3.38	1.26			4.41	1.44			5.07	1.14			5.00	1.12			5.22	1.17		
Meta	974	3.29	1.22	2.78*	.07	4.43	1.56	-.74	-.01	5.01	1.13	1.85	.05	4.97	1.12	1.02	.03	5.17	1.21	1.80	.04
Self		3.35	1.28			4.38	1.50			5.21	1.03			5.17	1.11			5.40	1.16		
Peer	213	3.07	1.32	2.81*	.22	4.77	1.56	-3.87**	-.25	5.17	1.19	.41	.04	5.11	1.28	.65	.05	5.46	1.29	-.62	-.05
Self		3.32	1.27			4.51	1.54			5.16	1.09			5.14	1.20			5.35	1.11		
Parent	267	2.77	1.35	5.72**	.42	4.76	1.55	-2.91**	-.16	5.60	1.06	-5.43**	-.41	5.45	1.26	-3.45**	-.26	5.72	1.23	-4.50**	-.31
Peer		3.18	1.35			4.68	1.47			5.03	1.17			5.05	1.28			5.55	1.20		
Parent	76	2.86	1.21	1.85	.25	4.71	1.59	-.17	-.02	5.39	1.20	-2.37	-.32	5.46	1.28	-2.34	-.32	5.74	1.23	-1.18	-.15
Meta		3.17	1.14			4.35	1.68			5.11	1.06			5.16	1.20			5.39	1.17		
Peer	213	3.06	1.31	1.06	.08	4.77	1.56	-2.96**	-.19	5.15	1.20	-.40	-.03	5.10	1.29	.66	.05	5.44	1.30	-.57	-.04
Meta		3.25	1.23			4.47	1.62			5.04	1.17			5.14	1.13			5.27	1.15		
Parent	270	2.78	1.35	5.09**	.36	4.74	1.55	-2.17**	-.11	5.60	1.06	-6.67**	-.50	5.44	1.26	-3.47**	-.25	5.73	1.23	-5.57**	-.38
Meta		3.39	1.34			4.34	1.69			4.95	1.22			5.03	1.15			5.37	1.17		
PeM	178	3.05	1.22	2.92**	.27	4.60	1.57	-2.32	-.16	5.12	1.10	-1.66	-.15	5.07	1.21	-.36	-.04	5.42	1.25	-.41	-.04
Meta		3.29	1.21			4.21	1.62			5.08	1.07			5.05	1.09			5.18	1.20		
PaM	271	2.75	1.23	5.91**	.44	5.47	1.66	-4.42**	-.22	5.51	1.08	-5.61**	-.40	5.52	1.23	-5.21**	-.40	5.77	1.22	-7.50**	-.49

Note. *$p \leq .01$; **$p \leq .001$. FFM = Five Factor Model; N = Neuroticism; E = Extraversion, O = Openness; A = Agreeableness, C = Conscientiousness; PeM=Peer perceived meta-perception; PaM= Parent perceived meta-perception; M = Mean; SD = Standard deviation

Table 5

Correlations between various reports

DT	Self/PeM	Self/Peer	Meta/Peer	Meta/PeM	Self/PaM	Self/Parent	Meta/Par	Meta/PaM
SRP	.47	.44	.44	.46	.39	.37	.35	.38
MACH	.32	.32	.37	.34	.33[a]	.20[b]	.19	.29
NPI	.40	.36	.32	.43	.22[a]	.40[b]	.34	.32
Avg *r*	.40	.37	.38	.41	.31	.32	.29	.33
Big Five								
N	.27	.35	.36	.23	.29	.28	.31	.24
E	.58	.54	.55	.57	.60	.59	.63	.67
O	.29	.20	.26	.23	.37[a]	.23[b]	.24	.31
A	.24	.36[a]	.45[b]	.17[c]	.21	.25	.31	.19
C	.28	.31	.31	.20	.38	.36	.37	.43
Avg *r*	.33	.35	.39	.28	.37	.34	.37	.37

Note. DT = Dark Triad; SRP = Self-Report Psychopathy Scale; MACH = MACH-IV; NPI = Narcissistic Personality Inventory; FFM = Five Factor Model; N = Neuroticism; E = Extraversion, O = Openness; A = Agreeableness, C = Conscientiousness; M = Mean; SD = Standard deviation; PeM=Peer perceived meta-perception; PaM= Parent perceived meta-perception; Avg = Average; Meta/peer compared to self/peer; meta/parent compared to self/parent; self/peer compared to self/PeM; Meta/peer compared to meta/PeM; self/parent compared to self/PaM; meta/parent compared to meta/PaM; correlations in the same row with different superscripts are statistically significantly different ($p \leq .01$).

Table 6

Meta-perception and self-report of DT entered simultaneously as predictors of informant reports of the DT

		Peer			Parent		
		r	B	R^2	r	β	R^2
SRP	Self	.44	.26		.37	.25*	
	Meta	.34	.21	.21**	.35	.14	.14**
MACH	Self	.32	.13[a]		.20	.13	
	Meta	.37	.29[b]**	.15**	.19	.10	.04*
NPI	Self	.36	.28[a]*		.40	.33[a]**	
	Meta	.32	.12[b]	.14**	.34	.09[b]	.16**

Note: Data presented are beta coefficients from regression analyses; *$p \leq .01$; **$p \leq .001$. Note. DT = Dark Triad; SRP = Self-Report Psychopathy Scale; MACH = MACH-IV; NPI = Narcissistic Personality Inventory; Betas with different superscripts are statistically significantly different ($p \leq .05$).

Table 7

Meta-perception and self-report of Big Five domains entered simultaneously as predictors of informant reports of the same domain

		Peer			Parent		
		r	β	R^2	r	β	R^2
Neuroticism	Self	.35	.22		.28	.13	
	Meta	.36	.19	.15**	.31	.22*	.10**
Extraversion	Self	.54	.29		.59	.15[a]	
	Meta	.55	.30*	.32**	.63	.49[b]**	.40**
Openness	Self	.20	.04[a]		.23	.12	
	Meta	.26	.23[b]	.06**	.24	.16	.07**
Agreeableness	Self	.36	.06[a]		.25	.07[a]	
	Meta	.45	.40[b]**	.20**	.31	.26[b]**	.10**
Conscientiousness	Self	.31	.17		.36	.17*	
	Meta	.31	.18	.11**	.37	.25**	.15**

Note: Data presented are beta coefficients from regression analyses; *$p \leq .01$; **$p \leq .001$. Betas with different superscripts are statistically significantly different ($p \leq .05$).

Table 8

Meta-perception and self-report of Big Five domains entered simultaneously as predictors of informant reports of DT

		SRP						MA						NPI					
		PE			PA			PE			PA			PE			PA		
		r	β	R^2	r	B	R^2	r	β	R^2	r	β	R^2	r	β	R^2	r	β	R^2
N	S	-.05	-.09		-.08	-.11[a]		.06	.03		.03	.03		-.03	-.19[a]		-.09	-.01	
	M	-.02	.05	.00	-.04	.04[b]	.01	.06	.04	.00	.02	.00	.00	.10	.22[b]	.02	-.12	-.12	.02
E	S	.17	-.06[a]		.07	-.03[a]		.11	.18[a]		-.05	-.05		.33**	.09[a]		.22**	.30[a]	
	M	.22**	.27[b]	.05*	.08	.11[b]	.01	.07	-.09[b]	.01	-.05	-.01	.00	.36**	.27[b]	.13**	.16*	-.11[b]	.05*
O	S	.05	-.07[a]		.09	.13[a]		.01	-.05		-.01	.02		.02	-.05[a]		.12	.08	
	M	.11	.17[b]	.02	.03	-.07[b]	.01	.04	.08	.00	-.04	-.05	.00	.05	.10[b]	.01	.10	.04	.01
A	S	-.29**	-.08[a]		-.14	-.03		-.34**	-.20		-.07	-.04		-.15	.03[a]		-.08	-.06	
	M	-.35**	-.30[b]*	.13**	-.18*	-.15	.03	-.33**	-.18	.13**	-.08	-.06	.01	-.23**	-.25[b]	.05*	-.08	-.03	.01
C	S	-.24**	-.12		-.08	.03[a]		-.17	.01[a]		-.03	.14[a]		-.11	-.10		-.02	.01	
	M	-.25**	-.15	.07**	-.12	-.14[b]	.02	-.23**	-.24[b]	.05*	-.10	-.21[b]	.02	-.09	-.01	.01	-.03	-.04	.00

Note: S=Self-report, M=Meta-perception report, N=Neuroticism, E=Extraversion, O=Openness, A=Agreeableness, C=Conscientiousness; SRP = Self-Report Psychopathy Scale; MACH = MACH-IV; NPI = Narcissistic Personality Inventory; Data presented are beta coefficients from regression analyses; *$p \leq .01$; **$p \leq .001$. Betas with different superscripts are statistically significantly different ($p \leq .05$).