

Dispositional malevolence and impression formation: Dark Tetrad associations with accuracy and positivity in first impressions

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Abstract

Introduction: The Dark Tetrad traits (subclinical psychopathy, narcissism, Machiavellianism, and everyday sadism) have interpersonal consequences. At present, however, how these traits are associated with the accuracy and positivity of first impressions is not well understood.

Objectives: The present manuscript addresses three primary questions. First, to what extent are perceiver levels of Dark Tetrad traits associated with differing levels of perceptive accuracy? Second, to what extent are target levels of Dark Tetrad traits associated with differing levels of expressive accuracy? Finally, to what extent can Dark Tetrad traits be differentiated when examining perceptions of and by others?

Methods: In a round-robin design, participants ($N = 412$) in small groups engaged in brief, naturalistic, unstructured dyadic interactions before providing impressions of their partner.

Results: Dark Tetrad traits were associated with being viewed and viewing others less distinctly accurately and more negatively.

Conclusion: Interpersonal perceptions that included an individual scoring highly on one of the Dark Tetrad traits differed in important ways from interactions among individuals with more benevolent personalities. Notably, despite the similarities between the Dark Tetrad, traits had unique associations with interpersonal perceptions.

Keywords: Personality, first-impressions, accuracy, Dark Tetrad, sadism.

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We make countless social acquaintances in life: Many of whom are friendly, comprehensible, and pleasant to be around; others may be noxious and of dubious moral character. In social encounters of the latter sort—involving a person with malevolent tendencies—first impressions carry particularly high stakes. Dispositional malevolence increases the likelihood that an individual will assume a hostile and competitive stance against others (Dowgwillo & Pincus, 2016; Jonason, Li, & Teicher, 2010; D. N. Jones & Paulhus, 2010a) and in a competitive social exchange, the upper hand is gained by quickly “sizing up” one’s opponent. Given the potentially high stakes on both sides of these interactions, a crucial but unanswered question remains: How do malevolent traits factor into interpersonal impression formation?

The Dark Triad

Three overlapping but distinct traits dominate the empirical literature on malevolent dispositions (Furnham, Richards, & Paulhus, 2013). Together, they comprise the so-called *Dark Triad* of personality (Paulhus & Williams, 2002)¹: Subclinical psychopathy, narcissism, and Machiavellianism. Psychopathy is characterized by callous and blunted affect, impulsive antisocial tendencies, and a reckless endangerment of oneself and others (Cleckley, 1941). Narcissism reflects the degree to which a person holds a grandiose self-view and a sense of entitlement in relation to others (Raskin & Hall, 1979; Raskin & Terry, 1988). The central characteristics of Machiavellianism include the presence of a cynical and hostile worldview, a tendency to strategically manipulate others for personal gain, and dishonest behavior accompanied by clever tactics to cover one’s tracks (Christie & Geis, 1970). The Dark Triad traits are disparate in their conceptual origins and central characteristics, but research reveals substantial empirical overlap when assessed in subclinical populations. Specifically,

¹In line with previous research (Paulhus & Williams, 2002), we refer to the narcissism, psychopathy, and Machiavellianism as the Dark Triad for the sake of convention and clarity. However, we recognize that some researchers dislike this “dark” label (Thomaes, Brummelman, Miller, & Lilienfeld, 2017) for various reasons, such as finding the label to be reductive and overly negative.

the Dark Triad traits share a callous lack of regard for others (e.g., Dowlagillo & Pincus, 2016; D. N. Jones & Figueredo, 2013; Lee & Ashton, 2005) and low honesty-humility (Book, Visser, & Volk, 2015; Book et al., 2016). Despite overlap, behavioral differences emerge between the traits in experiments testing the discriminant validity and predictive utilities of the individual traits that comprise the Dark Triad (e.g., D. N. Jones, 2016; D. N. Jones & Paulhus, 2017).

The Dark Tetrad: Sadism as another key trait. Beyond the Dark Triad, everyday sadism is an additional contender for inclusion in the taxonomy of malevolent dispositions. Psychological considerations of sadism emphasize both (a) pleasure derived from the suffering of others and (b) avoidance of guilt (e.g., Baumeister & Campbell, 1999). Broadly defined, individual differences in everyday sadism (Buckels, Jones, & Paulhus, 2013; Paulhus & Dutton, 2016) reflect tendencies to experience pleasure from the suffering of others that can be perpetrated directly (direct sadism) or observed from an outsider’s perspective (vicarious sadism; Paulhus & Jones, 2015) and may involve physical, psychological, emotional, or even fantasized forms of harm. There are moderately-sized positive associations between self-report measures of sadism and the Dark Triad (Book et al., 2016; Buckels et al., 2013; Buckels, Trapnell, & Paulhus, 2014; Chabrol, Leeuwen, Rodgers, & Séjourné, 2009; March, Grieve, Marrington, & Jonason, 2017) that are similar in magnitude to the intercorrelations among those three traits (Paulhus & Williams, 2002). Importantly, everyday sadism predicts antisocial behavior independently of its overlap with the Dark Triad (Buckels et al., 2013; Buckels et al., 2014; Greitemeyer & Sagioglou, 2017; March et al., 2017). In this paper, we include and examine a measure of everyday sadism as well as examining its incremental validity — the extent to which it predicts unique variance in interpersonal perception, above and beyond the established Dark Triad. Such a pattern would support the establishment of a new *Dark Tetrad* of personality (Chabrol et al., 2009)² that incorporates everyday sadism into the mix.

Interpersonal perception. Much research has focused on the prediction of dishonest and immoral behaviors by Dark Tetrad traits, yet less is known about the association between Dark Tetrad traits

²For clarity, we will refer to the group of four traits (narcissism, psychopathy, Machiavellianism, and sadism) as the Dark Tetrad (Chabrol et al., 2009) and use Dark Triad when not specifically referencing sadism. While we recognize the problems with these labels, referring to each trait individually throughout the paper would detract from the central ideas.

and interpersonal perception—particularly the accuracy and positivity of first impressions. First impressions are integral in everyday interpersonal interactions and are an important step in the formation of long-term relationships (Human, Sandstrom, Biesanz, & Dunn, 2013). A comprehensive understanding of the Dark Tetrad necessitates a consideration of how these traits are associated with impression formation.

Accuracy and Positivity in Interpersonal Perception

The present research employs the *Social Accuracy Model* of interpersonal perception (SAM; Biesanz, 2010) which is a person-centered approach that examines agreement across a number of traits to assess accuracy and bias in impressions. Specifically, SAM estimates two components of impressions—normative and distinctive accuracy—for perceivers, targets, and dyads. Normative accuracy refers to understanding what people generally are like; it is assessed by the degree to which one’s impressions of others, on average, map onto the average person’s standing on a given trait (Biesanz, 2010). Being perceived normatively implies being seen more positively, as the average person possesses a socially desirable personality profile (Borkenau & Zaltauskas, 2009; Edwards, 1957; Rogers & Biesanz, 2015; Wood & Furr, 2016). Distinctive accuracy assesses the perceiver’s ability to discern how a specific target individual differs from the average person across personality traits. Distinctive accuracy is indexed by examining the relationship between perceiver impressions and a target validity measure. Distinctive accuracy, following Funder’s (1995) *Realistic Accuracy Model*, can only be achieved when targets make *relevant* cues to their personality *available* to the perceiver who, in turn, *detects* and *utilizes* these cues appropriately when forming their impression.

Interpersonal Perception and the Dark Tetrad

Expression-based distinctive accuracy. Are Dark Tetrad traits related to how accurately a target is perceived? There are several arguments why the Dark Tetrad traits may be associated with being perceived inaccurately by others. First, scores on the Dark Triad are associated with greater self-reported arrogance and cunning and lower Honesty-Humility (Lee & Ashton, 2005; Rauthmann, 2011b), which suggests that high scorers may intentionally convey dishonest information to others. Second, given that narcissism is characterized by grandiose self-views and self-deceptive tendencies (Raskin & Hall, 1979; Raskin & Terry, 1988), individuals scoring highly on narcissism

may exaggerate their positive qualities to receive praise and compliments (Liu, Ang, & Lwin, 2013); in turn, these tendencies may interfere with accurate trait judgments. Third, empirical research links the Dark Triad to self-monitoring tendencies (Rauthmann, 2011a), suggesting that high scorers may adjust their public persona to meet situational demands, and inhibit their internal thoughts, feelings, and behaviors (Snyder, 1974). Finally, the Dark Tetrad are associated with decreased communion (Mededović & Petrović, 2015), as such, targets scoring highly on the Dark Tetrad may lack sufficient motivation to engage in intimate self-disclosure with others. Instead, self-disclosure may serve a more strategic and instrumental purpose (W. H. Jones, Nickel, & Schmidt, 1979). All things considered, the disingenuous and uncooperative tendencies associated with the Dark Tetrad may reduce the availability of relevant cues, leading to decreased interpersonal accuracy.

Alternatively, the Dark Tetrad may promote the communication of relevant cues to others. High scorers on the Dark Tetrad are often interpersonally dominant (e.g., D. N. Jones & Paulhus, 2010b; Rauthmann & Kolar, 2013) and dominant individuals are more likely to express their opinions and values (Anderson & Berdahl, 2002) and less likely to conform to others' expectations (Smith, Neuberg, Judice, & Biesanz, 1997) and other situational pressures. Thus, as a consequence of the overlap between trait dominance and domineeringness, individuals scoring higher on the Dark Tetrad may be perceived more accurately than others by providing more relevant cues. Additionally, high scorers on psychopathy and sadism are known to be uninhibited and confrontational (Buckels et al., 2014; Craker & March, 2016; March et al., 2017) and high scorers on sadism approach social interactions as an opportunity to provoke, dominate, and harm others (Buckels et al., 2014). Taken together, high scorers on psychopathy and sadism may be prone to revealing their “true selves”, as they either do not care or cannot hide their antisocial tendencies. In sum, there are competing hypotheses: high scorers on the Dark Tetrad may be viewed more in line with their own unique traits, but may also be viewed less in line with their own unique traits.

Perception-based distinctive accuracy. Are Dark Tetrad traits related to how accurately one perceives others? Despite a historic lack of success in the search for the “good judge” of personality (e.g., Kenny, 1994)—likely due to unreliable variability among judges (Biesanz, 2010)—recent empirical work suggests that there are strong individual differences in perceptive accuracy when assessed appropriately (Rogers & Biesanz, 2017). Distinctive accuracy can, theoretically, be

influenced by any characteristic that impacts a judge's ability to detect and utilize the available cues.

Previous research links the Dark Triad to a decreased motivation for social connection (Jonason & Ferrell, 2016), a low need for affiliation (Harms, Spain, & Wood, 2014), and an individualistic and competitive orientation (Jonason et al., 2010). Thus, high scorers may be too interested in themselves, and too uninterested in others, to detect relevant cues from their interaction partners. Furthermore, as emotions and facial expressions are a window into a person's internal state and provide clues regarding one's personality (Andersen, 1984), the ability to decode this nonverbal information may assist in impression formation. For example, emotional intelligence and perspective-taking are known to promote perceptive accuracy (Colman, Letzring, & Biesanz, 2017), and these individual differences are negatively related to Machiavellianism (Pilch, 2008). Similarly, Machiavellianism negatively correlates with the ability to decode facial expressions from pictures (Simon, Francis, & Lombardo, 1990) and subclinical psychopathy has been linked with less efficiency in processing words with a negative valence (Long & Titone, 2007), suggesting those high on psychopathy have a more difficult time processing negative emotions. Emotions are high-quality information for accurate impression formation (Andersen, 1984), thus the Dark Tetrad traits may be associated with lower perceptive accuracy. In sum, perceivers scoring highly on the Dark Tetrad may be relatively poor judges of personality and form impressions less in line with the target's own unique traits.

Expression-based normative accuracy. Are high scorers on the Dark Tetrad traits seen in a positive or negative light? The average self-reported personality is generally positive and socially desirable (Borkenau & Zaltauskas, 2009); as a result, being perceived normatively and similar to the average person implies being seen more positively and socially desirable. Dark Tetrad traits, by definition, are not socially desirable and positive; therefore, the question is whether other people can detect those non-normative (and negative) tendencies?

The Dark Triad are frequently associated with attractiveness ratings (Fowler, Lilienfeld, & Patrick, 2009). Specifically, high scorers on the Dark Triad are "sharp dressers" (Holtzman & Strube, 2012) who adorn themselves effectively (Holtzman & Strube, 2010) to promote perceptions of attractiveness. Increased ratings of attractiveness are, in turn, strongly related to the positivity of initial impressions (Lorenzo, Biesanz, & Human, 2010). Indeed, psychopathy and narcissism, but

not Machiavellianism, have been associated with being chosen for short-term mate selection in a speed dating study (Jauk et al., 2016). To the extent that targets scoring high on the Dark Tetrad are viewed as attractive, or make positive first impressions, we should expect them to be viewed normatively.

Furthermore, since people have a greater desire to bond and affiliate with more likeable, charismatic people (Lemay, Clark, & Greenberg, 2010), targets who behave in a likeable and engaging manner are viewed more positively than those who do not (Human, Biesanz, Parisotto, & Dunn, 2012). Individuals high on narcissism can be popular, charming and liked at first (e.g., Back, Schmukle, & Egloff, 2010; Foster, Shrira, & Campbell, 2006). Additionally, lay people have judged behaviors and motivations associated with narcissism to be more favorable and desirable compared to the psychopathy and Machiavellianism, which were judged as similarly undesirable (Rauthmann & Kolar, 2012). The research on Machiavellianism is mixed in regards to first impressions (Fehr, Sampson, & Paulhus, 1992; D. N. Jones & Paulhus, 2009); while adults scoring high on Machiavellianism are liked under certain circumstances (e.g., Coie, Dodge, & Kupersmidt, 1990; Deluga, 2001; Simonton, 1986), they often have colder and more distant social relationships (Lyons & Aitken, 2010). Given that individuals higher on Machiavellianism tend to be calculating when engaging in specific behaviors, especially when there is sufficient self-benefit (D. N. Jones & Paulhus, 2009), they may only behave in a likeable manner when they believe they have something to gain. Finally, individuals high on sadism are more likely to engage in online trolling (Buckels et al., 2014; March et al., 2017). Although there is a possibility that individuals high in sadism will be viewed positively in first impressions due to their humor, it is likely that they will be viewed less normatively, as mocking behavior can be perceived as off-putting.

Perception-based normative accuracy. How positively do high scorers on the Dark Tetrad view others? That is, do perceivers scoring high on the Dark Tetrad view others, on average, as more or less similar to the average person? The Dark Tetrad traits are associated with several characteristics that would influence the positivity of interpersonal perceptions. For example, high scorers on the Dark Triad may hold a negative other-bias, a general tendency to evaluate other people negatively (Back et al., 2010). Indeed, the Dark Triad are associated with a tendency to perceive strangers as weak and vulnerable to victimization (Black, Woodworth, & Porter, 2014) and

rate others in first impressions as less competent (Rauthmann, 2011b). Given sadism’s overlap with the Dark Triad on traits such as low agreeableness, individuals high on sadism may also harbor overarching negative perceptions of others.

Overview of the Current Research

Overall, there are strong reasons to believe the Dark Tetrad traits are associated with differences in distinctive and normative accuracy of initial impressions, both for targets and perceivers. Scoring high on the Dark Tetrad may be associated with differences in a person’s ability to make *relevant* cues *available*, as well as their capability to *detect* and *utilize* those cues appropriately when forming impressions of others. Therefore, the current study hypothesized that Dark Tetrad traits will be associated with differences in (a) the accuracy and positivity of first impressions of others and (b) how accurately and positively an individual is viewed by others. Additionally, to understand the association between the Dark Tetrad and social interactions more broadly, we explored the relations with other aspects of dyadic interpersonal perceptions and evaluations, such as liking and social status.

Method

Participants and Procedure

A total of 412 undergraduates (311 female and 5 unknown, $M_{age} = 21.18$ years, $SD = 4.63$) at the University of British Columbia participated in a round robin “getting-acquainted” design, in 57 groups, ranging in size from 4 to 12 participants ($Mdn = 7$) in exchange for \$20 or course credits. In these brief, three minute, unstructured dyadic interactions, participants were instructed to “introduce yourself, and try to get to know one another”. The present sample combines 3 separate data collection waves from 2013 to 2015 that shared the same core study design and represents all available data where all the complete set of Dark Tetrad measures were administered to participants.³

Participants were also asked to provide contact information for two peers and a parent or guardian in

³Data are available on a previous study where only sadism was assessed for 161 participants through a pre-screening measure and results are fully equivalent with those presented here for the univariate sadism analyses. This study is omitted from the present manuscript in interest of brevity although the results are available upon request.

order to obtain personality assessments of the participants by close informants. All informants were mailed or e-mailed the same personality questionnaire as completed by participants with modified instructions for informant-reports. A total of 204 (50%) participants received parental-reports and 251 (61%) participants received at least one peer-report. Combined, 301 (73%) participants had at least one informant-report (one peer or parent) that was used to form a composite score of self- and informant-reports. After each dyadic interaction, participants indicated whether or not they previously knew their interaction partner (see osf.io/chgwe/ for materials, data, and R Markdown code to reproduce the present manuscript). Approximately 3% of interactions involved previously acquainted individuals and these interactions were removed from the dataset prior to analyses.

Measures

Basic Personality. Participants provided self- and other- personality ratings using a 24-item abbreviated version of the Big Five Inventory (BFI; John & Srivastava, 1999) that included three additional items to assess intelligence using a rating scale ranging from 1 (*Disagree Strongly*) to 7 (*Agree Strongly*); the full set of 24 items is available in Appendix A of Human, Biesanz, Finseth, Pierce, and Le (2014). A composite created from the average of self- and informant-report BFI scores was used as the benchmark for accuracy for initial impressions.

Dark Tetrad. A total of 406 participants completed the 27-item Short Dark Triad scale (SD3; D. N. Jones & Paulhus, 2013) to assess narcissism (e.g., “I have been compared to famous people”; $\alpha = .70$), Machiavellianism (e.g., “It’s not wise to tell your secrets”; $\alpha = .78$), and subclinical psychopathy (e.g., “People often say I’m out of control”; $\alpha = .71$). Participants also completed a preliminary 13-item version of the Comprehensive Assessment of Sadistic Tendencies measure (CAST; Buckels & Paulhus, 2014) containing only physical and verbal sadism items (e.g., “*I have dominated others using fear*”; $\alpha = .85$). All items were rated on a scale from 1 (*Disagree Strongly*) to 7 (*Agree Strongly*). Intercorrelations among Dark Tetrad scores and descriptive statistics are displayed in Table 1 and demonstrate, as expected, positive relationships among these four traits.

Dyadic Evaluations. After each interaction and the assessment of the personality impression ratings, perceivers provided their impressions of the target on a range of different dimensions related to likeability, nefarious intentions, trust, and other relevant characteristics. The specific items

examined and their characteristics are listed in Table 2. Four items were created to specifically assess characteristics that were judged by the authors to be prototypical descriptors of high scorers on each Dark Tetrad Trait. The remaining items were included to capture basic elements of social perception, such as physical attraction and status (e.g., Fiske, Cuddy, Glick, & Xu, 2002).

Data Analytic Strategy

We used the *Social Accuracy Model* (SAM; Biesanz, 2010) to assess the accuracy of impressions and estimate individual differences in perceptive and expressive accuracy (for another example of SAM and more details on the model see Rogers & Biesanz, 2015). In brief, perceivers' ratings of each target on each personality item were predicted simultaneously from (a) the target personality validation measure (composite of self- and informant-reports) on that item after subtracting the normative mean for that item and (b) the normative mean on that item. This analysis provides estimates of distinctive and normative accuracy, respectively. Items were not reverse coded prior to analysis to preserve the evaluative range across the items. The specific analytical model is represented by Equation (1).

$$Y_{ijk} = \gamma_{0ij} + \gamma_{1ij}V_{jk} + \gamma_{2ij}\bar{V}_k + e_{ijk} \quad (1)$$

Here Y_{ijk} is perceiver i 's rating (impression) of target j on item k , V_{jk} is target j 's validity measure on item k , and \bar{V}_k is the average validity measure on item k . V_{jk} is centered within item (i.e., $E(V_{jk}) = 0$ across targets for a given trait). The validity measure is an average of all available personality assessments (self, peer, and parent) for that item. The two regression slope coefficients in this model are of primary interest and represent distinctive and normative accuracy, respectively. Specifically, for each dyad,

γ_{1ij} is the level of distinctive accuracy for perceiver i with target j . This estimates the relationship between how target j is different from the average person on the validity measures across a series of traits and perceiver i 's impressions of the target on those same traits. Distinctive accuracy assesses the perceiver's ability to discern the unique characteristics of the other individual.

$\gamma_{2_{ij}}$ is the level of normative accuracy for perceiver i with target j . This estimates the relationship between the average target on the validity measures across a series of traits and the perceiver's impressions of the target on those same traits. Normative accuracy is highly related to the positivity of impressions as the average level of each trait (\bar{V}_k) correlates .80 – .90 with the social desirability of that trait (Rogers & Biesanz, 2015).

Normative accuracy provides a reliable estimate of evaluative tendencies.

As SAM represents a crossed-random effects model, each of the dyadic coefficients in Equation (1) is decomposed into main effects for perceiver, target, and the latent residual dyadic component as illustrated by the unconditional SAM model in Equation (2).

$$\begin{aligned}
 \gamma_{0_{ij}} &= \gamma_{00} + u_{0_i} + u_{0_j} + u_{0_{ij}} \\
 \gamma_{1_{ij}} &= \gamma_{10} + u_{1_i} + u_{1_j} + u_{1_{ij}} \\
 \gamma_{2_{ij}} &= \gamma_{20} + u_{2_i} + u_{2_j} + u_{2_{ij}}.
 \end{aligned}
 \tag{2}$$

The random effects in Equation (2) are estimated for perceiver (u_i), target (u_j), and residual dyadic components (u_{ij}). These random effect estimates are presented as summary statistics in the model with ($\hat{\tau}$) as the estimated standard deviation of u . The random effects have mean 0 and the intercepts ($\hat{\gamma}$) represent the average estimated effect across perceivers and targets. Of primary interest here are the estimates of how scores on measures of sadism, psychopathy, narcissism, and Machiavellianism are related to distinctive and normative accuracy. For instance, to examine the relationship between perceiver sadism and the accuracy of interpersonal perceptions, this measure is introduced in Equation (2) as a moderator as illustrated in Equation (3)

$$\begin{aligned}
 \gamma_{0_{ij}} &= \gamma_{00} + \gamma_{01}Sadism_i + u_{0_i} + u_{0_j} + u_{0_{ij}} \\
 \gamma_{1_{ij}} &= \gamma_{10} + \gamma_{11}Sadism_i + u_{1_i} + u_{1_j} + u_{1_{ij}} \\
 \gamma_{2_{ij}} &= \gamma_{20} + \gamma_{21}Sadism_i + u_{2_i} + u_{2_j} + u_{2_{ij}}.
 \end{aligned}
 \tag{3}$$

Here γ_{11} represents the relationship between sadism for perceiver i and distinctive accuracy (e.g., do perceivers scoring higher on sadism generally form more or less distinctively accurate impressions of others?). Similarly γ_{21} represents the relationship between perceiver sadism and normative accuracy (e.g., do perceivers scoring higher on sadism generally form more or less positive impressions of others?). Equation (3) is examined for each of the Dark Tetrad traits, separately, for both targets and perceivers, to provide estimates of the univariate relationships for each of the traits. Effect size estimates, following Gelman (2008), were estimated in the standardized mean difference metric (d) and were computed as the predicted change in the respective random effect slope (e.g., perceiver distinctive accuracy) for a 2 SD change in the continuous predictor (e.g., perceiver sadism).

To examine the relationship between scores on the Dark Tetrad traits and perceiver dyadic evaluations, we estimated the following multilevel model separately for each evaluation.

$$DE_{ij} = \gamma_0 + u_i + u_j + e_{ij} \quad (4)$$

Here DE_{ij} represents perceiver i 's dyadic evaluation of target j , and u_i and u_j the perceiver and target random effects, respectively. Perceiver and target scores on the Dark Tetrad traits were then entered into Equation (4) individually to estimate the univariate relationships for both perceiver and target Dark Tetrad traits.⁴ Approximate standardized effect size estimates (β) were provided by standardizing the Dark Tetrad trait across participants and the evaluations across dyadic impressions.

Results

After just three minutes of interaction, significant levels of normative and distinctive accuracy

⁴All four Dark Tetrad traits, for both targets and perceivers, were also entered simultaneously in Equation (3) to estimate the partial relationships for each of these dark traits. Perceiver and target scores, respectively, on the Dark Tetrad traits were also entered simultaneously into Equation (4) to estimate the partial relationships for both perceiver and target Dark Tetrad traits. The full results of these analysis can be found in the supplemental materials in Tables S1–3. In brief, these results largely mirror the univariate relationships and also demonstrate that despite the overlap between the Dark Tetrad traits, unique associations emerge, providing further support for the discriminate validity of these measures.

emerged across both perceivers and targets (Table 3). On average, participants perceived others—and were perceived themselves—to be both in line with the average person, as well as in line with their own unique traits. Additionally, there were individual differences in the tendency to view others normatively and distinctly, as well as the tendency to be viewed by others normatively and distinctly (see random effects in Table 3). Thus, while on average impressions were normative and distinct, some individuals viewed others—and were viewed by others—as more similar to the average person, and some individuals viewed others—and were viewed by others—more in line with targets’ own unique traits.

First Impressions: Target Effects

We first explored associations between targets’ Dark Tetrad scores and normative accuracy—testing whether target traits moderated the tendency to be viewed in line with the average person and positively. As seen in Table 4, sadism and Machiavellianism scores were associated with significantly lower levels of normative accuracy. While the Dark Tetrad traits were generally associated with being viewed less normatively and positively, this was especially true for sadism.

Turning to distinctive accuracy, we examined how targets’ scores on Dark Tetrad traits moderated the extent to which the targets were perceived in line with their own unique traits. As seen in Table 4, sadism and Machiavellianism scores were also associated with lower levels of distinctive accuracy. That is, individuals scoring higher on sadism and Machiavellianism were seen less in line with their own unique traits. In sum, during first impressions target sadism and Machiavellianism were associated with being perceived less positively and less in line with their own unique personality traits.

Moving beyond the accuracy of personality impressions, univariate analyses revealed a general tendency for high scorers on the Dark Tetrad traits to be viewed negatively by others (Table 5). Target scores on each of the Dark Tetrad traits were associated with negative evaluations across a variety of social perceptions (e.g., status, liking, engaging, trustworthy). Moreover, aside from Machiavellianism, each trait was associated with being viewed as domineering and socially aversive (e.g., aggressive, sarcastic). In sum, the Dark Tetrad traits were generally associated with negative perceptions, especially sadism, but this was somewhat less true for Machiavellianism.

First Impressions: Perceiver Effects

Turning to perceiver effects, we explored associations between perceivers' Dark Tetrad scores and normative accuracy—testing whether perceiver traits moderated the tendency to view others in line with the average person and in a positive manner. As seen in Table 4, sadism, psychopathy, and Machiavellianism scores were associated with significantly lower levels of normative accuracy. In sum, while the Dark Tetrad traits were generally associated with viewing others as less similar to the average and less positively, this was not true for narcissism.

Next, we explored associations with distinctive accuracy—testing the extent to which perceivers' scores on Dark Tetrad traits moderated perceptions of targets as being in line with the targets' own, unique traits. As seen in Table 4, sadism and psychopathy scores were associated with lower levels of distinctive accuracy. Thus, individuals scoring higher on measures of sadism and psychopathy tended to view others less in line with the target's own, unique traits, compared to low-scorers. Thus, sadism and psychopathy were associated with less accurate impressions of others.

Moving beyond the accuracy of personality impressions, we also examined the relationship between the Dark Tetrad traits and other aspects of interpersonal perceptions (e.g., liking, trust). Univariate analyses revealed a general tendency for Dark Tetrad scores to be associated with negative evaluations of the interactions and interaction partners (see Table 6): Dark Tetrad scores were associated with interpersonal negativity across a variety of social perceptions (e.g., evaluation, status, liking). However, the associations for narcissism were not as robust as the other traits. Taken together, our results reveal that impressions formed by individuals scoring higher on the Dark Tetrad differ from impressions formed by others. Additionally, while the pattern of results was often similar across the Dark Tetrad traits, differences did emerge between traits.

Discussion

This study employed naturalistic interpersonal interactions to systematically explore the associations between the Dark Tetrad of personality—subclinical narcissism, Machiavellianism, psychopathy, and sadism—and the accuracy and positivity of first impressions. We expanded on previous research (e.g., Rauthmann, 2011b) by examining the associations with distinctive and normative accuracy of first impressions. Additionally, using a multilevel modeling technique (Biesanz, 2010), we isolated

the unique relationships of each Dark Tetrad trait with the manner in which participants, (a) viewed others and (b) were viewed by others, in brief interpersonal interactions. With the exception of narcissism, the Dark Tetrad were associated with a consistent pattern of inaccurate interpersonal perception. Significant effects emerged for both target and perceiver personality: Individuals who scored highly on the Dark Tetrad traits viewed others, and were viewed in turn, less accurately and less positively relative to individuals scoring lower on those traits. Notably, sadism and psychopathy had the most robust and negative associations with interpersonal accuracy.

First Impressions

Previous research has generally found greater variability in the tendency to be viewed accurately by others (target effects; Human & Biesanz, 2013), as compared to the variability in the tendency to view others accurately (perceiver effects; Biesanz, 2010). Despite greater target individual differences, our results indicated that Dark Tetrad traits were associated with a decreased ability to understand others. Given the difficulties in identifying the “good judge”—individuals who tend to form more accurate impressions (e.g., Davis & Kraus, 1997)—these results highlight the need to explore personality traits beyond the typical Big Five when searching for characteristics that may be helpful in understanding others. Specifically, the HEXACO honesty-humility dimension represents the inverse core of the dark personality domain (Book et al., 2015; Book et al., 2016), thus future research might explicitly explore this trait dimension as a characteristic of the “good judge.”

Expression-based accuracy and positivity. We found little evidence of increased distinctive accuracy for perceptions of targets scoring highly on Dark Tetrad traits. Instead, we found that sadism and Machiavellianism were negatively associated with accuracy. Given that individuals who behave more in line with their personalities are viewed more accurately in first impressions (Human et al., 2014), it may be that targets scoring highly on everyday sadism and (especially) Machiavellianism were behaving somewhat out of character. Or perhaps they were disclosing a lower quality or quantity of information, which would also result in less accurate impressions (Human & Biesanz, 2013). In comparison, targets scoring lower on these malevolent traits may provide more honest information about themselves (cf. Book et al., 2016), which would facilitate the formation of accurate first impressions.

We expected targets scoring highly on Dark Tetrad traits to be viewed more normatively and positively in first encounters due, at least in part, to perceptions of physical attractiveness (Carter, Campbell, & Muncer, 2014; Holtzman & Strube, 2010; Holtzman & Strube, 2012; Fowler et al., 2009). Unlike previous research, however, individuals scoring highly on the Dark Tetrad were not judged as physically attractive in our brief, naturalistic, in-person interactions—if anything they were rated as less attractive. This difference is likely due to the methodology, as previous research has used static images (Holtzman & Strube, 2010; Holtzman & Strube, 2012), written descriptions (Carter et al., 2014), or very brief videos (Fowler et al., 2009), thus in these face-to-face interactions, ratings of physical attraction are likely influenced by other aspects, such as behaviors or conversation topics during the interaction. Consistent with their lower attractiveness ratings, we found that target levels of sadism and Machiavellianism were associated with less normative impressions. Thus, it seems that individuals scoring highly on sadism and Machiavellianism stand out from the pack in a particularly bad way. These results highlight a differential association between Dark Tetrad traits and the normativity of impressions beyond the shared core (e.g., Book et al., 2016; D. N. Jones & Figueredo, 2013), particularly for sadism.

Perception based accuracy and positivity. We primarily expected to find that perceivers who score highly on the Dark Tetrad traits would form less accurate impressions of others due to a lack of motivation to connect with others (Jonason & Ferrell, 2016) and difficulties processing personality relevant information (e.g., Ali & Chamorro-Premuzic, 2010). This hypothesis was partially supported: Sadism and psychopathy were associated with viewing others with less distinctive accuracy. We further predicted that individuals scoring highly on the Dark Tetrad traits would view others less normatively and positively. This hypothesis was somewhat supported by our results: Sadism, psychopathy, and Machiavellianism were all associated with viewing others less normatively. Although high levels of psychopathy, and especially sadism and Machiavellianism were detrimental for normative accuracy, this was not true for narcissism.

While the Dark Tetrad traits were largely related to negative evaluations—viewing qualities of the interaction and interaction partner negatively—these associations were not as robust or consistent for narcissism. These findings are largely in line with research on subclinical narcissism and perceptions of others (Rauthmann, 2011b), but in contrast with previous research linking narcissistic personality

disorder to the formation of particularly negative impressions of others (Tandler, Mosch, Wolf, & Borkebau, 2016). Thus, there is something unique about subclinical narcissism that is not quite as negative as the other Dark Tetrad traits, and that differs from the perceptual patterns linked to clinical levels of narcissism.

Dark Tetrad Traits and Interpersonal Interactions

Taken together, the results paint a fairly negative picture of interpersonal interactions that include an individual scoring highly on any of the Dark Tetrad traits. It is particularly notable that, in the dyadic evaluations, perceivers scoring higher in sadism placed others in the disliked and low-competence (dehumanized) quadrant of Fiske’s stereotype content model (Fiske et al., 2002). At the same time, individuals scoring higher in sadism were viewed in a similarly negative and dehumanizing manner (i.e., perceived as having slightly different traits from that exact same quadrant) by their interaction partners. In other words, when at least one interaction partner was high in sadism, especially negative evaluations—that could potentially facilitate aggressive behavior—ensued on both sides.

Socialization is a universal source of social exchange, but for individuals scoring highly on the Dark Tetrad—with their cold-hearted and aloof-introverted interpersonal style (Southard, Noser, Pollock, Mercer, & Zeigler-Hill, 2015)—small talk with “small folk” may be rather distasteful. The absence of rewards from civilized social exchange may exacerbate the antisocial tendencies associated with these particular traits. As this cycle continues, individuals scoring highly on Dark Tetrad may attribute the negative experiences of social interactions onto their interaction partners and blame them as the source of negativity. Such a pattern would explain why the Dark Tetrad were associated with describing others as aggressive and unrestrained, and sarcastic and demanding. Given the speculative nature of this hypothesis, future research might investigate the relationship between friendship development and first impressions longitudinally. While accurate first impressions typically promote relationship development (Human et al., 2013), scores on the Dark Tetrad may moderate those associations.

Detecting Dark Tetrad Traits in Others

In line with previous research that the Dark Tetrad traits can often be detected with very limited

information, such as photographs (Holtzman, 2011) and brief snippets of interviews (Fowler et al., 2009), and largely replicating Rauthmann (Rauthmann, 2011b), we found that people can detect a certain degree of social averseness in others, even in brief initial social interactions. While perceivers may not be able to clearly differentiate between a high scorer on psychopathy and a high scorer on Machiavellianism, those who scored high on any of the Dark Tetrad were generally viewed as untrustworthy, which is in line with prior research demonstrating differential brain activation when viewing faces of individuals high on psychopathy and Machiavellianism (Gordon & Platek, 2009). From an evolutionary perspective, being able to quickly discern who you should and should not trust is incredibly valuable. Indeed, it has been suggested that humans evolved a unique capability for social cognition, such as making rapid decisions about whom to trust (Singer, Kiebel, Winston, Dolan, & Frith, 2004). Further research, however, is needed to identify the underlying mechanisms associated with the perceptions of untrustworthiness revealed in our study. Behavioral and linguistic coding may be particularly useful methodologies for understanding the specific behaviors linked to Dark Tetrad effects in first impressions. For example, past research indicates that narcissism is associated with greater use of sexual language (Holtzman, Vazire, & Mehl, 2010). Using these techniques, researchers might explore the behavioral sequence of events, topics discussed, and more nuanced and synergistic aspects of interpersonal interactions to provide greater insight into how people are able to detect cues of trustworthiness (or lack thereof).

Implications for the Dark Tetrad Model

Our findings provide additional support for the idea that there are meaningful distinctions among the traits included in the Dark Tetrad model of personality. Although there were many similarities in how individuals scoring highly on these four traits were viewed and viewed others, unique patterns also consistently emerged. Our findings also support the incremental validity of the everyday sadism construct (Buckels et al., 2013; Paulhus & Dutton, 2016), as sadism was frequently associated with aspects of interpersonal perception even when controlling for overlap with scores on the Dark Triad (see Supplemental Tables). Notably, sadism was uniquely associated with being viewed less normatively and positively, as well as less attractive, less likeable, and lower status. It is possible that, for everyday sadists, the enjoyment of cruelty is strong enough that combative and derogatory behaviors emerge, even in brief social interactions—perhaps in the form of sarcasm or mocking of

their interaction partner. In sum, our results support the predictive utility of assessing sadistic tendencies in personality research, and highlight the importance of differentiating among the Dark Tetrad traits.

Limitations & Future Directions

This study was the first to explore how Dark Tetrad traits are associated with individual differences in first impressions formed via naturalistic, in-person encounters; however, there are limitations that should be addressed by future research. First, it is important to consider the length of time and supplied context for the interpersonal interactions. In our study, participants engaged in three minute interactions that lacked any specific instructions or consequences for particular behaviors. Different results might emerge with longer and/or structured interactions. Past research indicates, for example, that narcissists are perceived positively at first, but the effects diminish over time (Paulhus, 1998). Thus, initial perceptions (such as those formed in our study) may differ from those formed after greater acquaintance, and the magnitude of the difference may be moderated by the strength of the Dark Tetrad traits. Furthermore, in our study, the interactions were low-stakes situations without a reward/goal framework. It would be useful to examine the effects of the Dark Tetrad traits in higher stakes and/or goal-oriented situations—such as a first date or job interview. Raising the stakes by introducing explicit rewards (and punishments) could provide insight into the ability to create a particular impression when motivated properly. Offering incentives may be especially important for capturing negative effects of Machiavellianism on interpersonal behavior, as the more socially aversive aspects of the trait are unlikely to occur without sufficient benefit to the self (D. N. Jones & Paulhus, 2010a). Additionally, given the findings linking narcissism to mate appeal (e.g., Holtzman & Strube, 2012; Jauk et al., 2016), examining narcissism in the context of potential romantic partners may be particularly fruitful.

Second, our interactions were dyadic in nature, meaning that participants met one-on-one, in sequence, and formed their impressions without outside influence. Group interactions may reveal different personality effects than those reported in the present research. It is possible, for example, a psychopath may influence another individual's perception of a third person when meeting in a group. To the extent that high scorers on the Dark Tetrad exert a strong influence on group dynamics, and manipulate the opinions of others, there may be more far-reaching consequences

beyond the accuracy of first impressions. Indeed, personality effects on interpersonal evaluations may be especially important in a work context, where employees routinely break into groups and teams, and performance evaluations can influence an individual's occupational success.

Finally, our findings are silent on the issue of gender effects. We cannot say, for instance, that a female sadist is viewed with greater (or less) accuracy than is a male sadist. It is also unclear how the gender composition of the dyad might influence first impressions, and personality effects associated with individual differences in the formation of accurate impressions. It is possible that the Dark Tetrad traits are more (or less) influential in interactions involving a male-female dyad, as compared to a gender-matched dyad. Future research might explore gender effects (and those of other categorical variables, such as relationship status). It is important to note that gender differences are unlikely to confound the results reported in the present research. Although women display greater normative accuracy than do men (Chan, Rogers, Parisotto, & Biesanz, 2011; Rogers & Biesanz, 2015), there are no such gender differences in distinctive accuracy and no empirical evidence that a target's gender influences interpersonal accuracy. Thus, gender differences are unlikely to explain the robust negative effects of the Dark Tetrad on interpersonal accuracy, across both perceivers and targets, and both normative and distinctive accuracy.

Summary & Future Directions

Overall, as expected, social interactions that include individuals who score highly on the Dark Tetrad traits are different from interactions without individuals with those traits. Indeed, Dark Tetrad traits were associated with both being viewed differently and viewing others differently—primarily in a negative manner. In sum, in first impressions, the Dark Tetrad traits are associated with different interpersonal perceptions compared to those with less socially aversive personalities and more research is necessary to fully understand the causes and consequences of these impressions.

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Dark Personality	Narcissism	Machiavellianism	Psychopathy	Sadism
Narcissism	(.70)			
Machiavellianism	0.30	(.78)		
Psychopathy	0.54	0.51	(.71)	
Sadism	0.31	0.50	0.70	(.85)
Mean	3.87	3.86	2.56	1.89
SD	0.86	1.04	0.82	0.80

Note. $N = 406$. Cronbach's α is provided on the main diagonal. Items for each trait were rated on a scale from 1 (*Disagree Strongly*) to 7 (*Agree Strongly*).

Table 1: Correlations among the Dark Tetrad personality scales and descriptive statistics.

Dyadic Evaluation	Mean $\hat{\mu}$ (SE)	Random Effects (<i>SD</i>)		
		Perceiver $\hat{\tau}_i$	Target $\hat{\tau}_j$	Residual $\hat{\sigma}_\epsilon$
<i>I see this person as someone who...</i>				
Is aggressive and unrestrained	2.29(0.05)***	0.94***	0.42***	0.68
Is bashful and unassuming	3.13(0.06)***	1.21***	0.47***	0.80
Is opportunistic and crafty	3.69(0.06)***	1.13***	0.45***	0.85
Is sarcastic and demanding	2.44(0.05)***	0.93***	0.48***	0.74
Is mature	5.36(0.04)***	0.68***	0.58***	0.70
Is reasonable	5.44(0.04)***	0.63***	0.43***	0.61
Is hypocritical	2.77(0.05)***	0.97***	0.39***	0.68
Is short-sighted	2.79(0.05)***	0.96***	0.40***	0.75
Is a leader	4.24(0.05)***	0.70***	0.72***	0.86
Has high status	4.31(0.04)***	0.66***	0.48***	0.68
Is engaging	5.11(0.05)***	0.71***	0.77***	0.80
Is respected and admired	4.79(0.04)***	0.69***	0.51***	0.67
Is very likeable	5.30(0.04)***	0.65***	0.61***	0.69
Is physically attractive	4.65(0.06)***	0.83***	0.77***	0.72
<i>How much do you...</i>				
Like this person overall?	5.11(0.04)***	0.64***	0.57***	0.66
Trust this person?	4.46(0.05)***	0.88***	0.47***	0.65

Note. * $p < .05$, ** $p < .01$, *** $p < .001$. Each row represents the unconditional model estimates allowing for perceiver and target random effects.

Table 2: Unconditional model estimates for dyadic evaluative items.

Parameter	Estimate (SE)
Fixed Effects	
Distinctive Accuracy $\hat{\gamma}_{10}$	0.18(0.01) ^{***}
Normative Accuracy $\hat{\gamma}_{20}$	0.85(0.02) ^{***}
Random Effects	
Perceiver (Perceptive Accuracy)	
Distinctive Accuracy $\hat{\tau}_{1_i}$	0.06 ^{***}
Normative Accuracy $\hat{\tau}_{2_i}$	0.37 ^{***}
Target (Expressive Accuracy)	
Distinctive Accuracy $\hat{\tau}_{1_j}$	0.21 ^{***}
Normative Accuracy $\hat{\tau}_{2_j}$	0.21 ^{***}
Residual Dyadic Accuracy	
Distinctive Accuracy $\hat{\tau}_{1_{ij}}$	0.15 ^{***}
Normative Accuracy $\hat{\tau}_{2_{ij}}$	0.16 ^{***}
Residual SD	1.13
Sample Sizes	
Perceivers	403
Targets	407
Dyads	2462

Note. * $p < .05$, ** $p < .01$, *** $p < .001$. Random effect estimates ($\hat{\tau}$) are in units of standard deviations. All estimates are unstandardized and reflect the 1–7 point scales used in the present sample.

Table 3: Social accuracy model estimates for the unconditional model.

Dark Personality Trait	Distinctive Accuracy		Normative Accuracy	
	Estimate (SE)	<i>d</i>	Estimate (SE)	<i>d</i>
Target				
Sadism	-0.04(0.02)*	- 0.29	-0.06(0.02)***	- 0.47
Psychopathy	-0.02(0.01)	- 0.18	-0.03(0.02)	- 0.21
Narcissism	0.01(0.01)	0.06	-0.03(0.02)	- 0.20
Machiavellianism	-0.03(0.01)*	- 0.25	-0.03(0.01)*	- 0.29
Perceiver				
Sadism	-0.02(0.01)*	- 0.51	-0.18(0.02)***	- 0.78
Psychopathy	-0.02(0.01)**	- 0.66	-0.14(0.02)***	- 0.63
Narcissism	0.00(0.01)	0.09	-0.02(0.02)	- 0.08
Machiavellianism	-0.00(0.01)	- 0.01	-0.11(0.02)***	- 0.59

Note. * $p < .05$, ** $p < .01$, *** $p < .001$. Effect size estimates (*d*) were computed as the predicted change in the respective random effect slope (e.g., perceiver distinctive accuracy) for a 2 *SD* change in the continuous predictor.

Table 4: Perceiver and target dark personality univariate trait moderation of distinctive and normative accuracy.

Dyadic Evaluation	Target Dark Tetrad Trait			
	Sadism β (SE)	Psychopathy β (SE)	Narcissism β (SE)	Machiavellianism β (SE)
<i>I see this person as someone who...</i>				
Is aggressive and unrestrained	0.05(0.02)*	0.07(0.02)***	0.08(0.02)***	0.01(0.02)
Is bashful and unassuming	0.03(0.02)	0.01(0.02)	0.00(0.02)	0.03(0.02)
Is opportunistic and crafty	0.00(0.02)	0.01(0.02)	0.07(0.02)***	-0.02(0.02)
Is sarcastic and demanding	0.06(0.02)**	0.07(0.02)**	0.07(0.02)***	0.01(0.02)
Is mature	-0.11(0.03)***	-0.09(0.03)***	-0.07(0.03)*	-0.07(0.03)**
Is reasonable	-0.09(0.02)***	-0.10(0.02)***	-0.07(0.02)**	-0.03(0.02)
Is hypocritical	0.05(0.02)**	0.06(0.02)***	0.04(0.02)*	0.04(0.02)*
Is short-sighted	0.07(0.02)***	0.06(0.02)***	0.04(0.02)*	0.04(0.02)*
Is a leader	-0.14(0.03)***	-0.06(0.03)*	0.07(0.03)*	-0.11(0.03)***
Has high status	-0.08(0.02)***	-0.01(0.02)	0.04(0.02)	-0.05(0.02)*
Is engaging	-0.17(0.03)***	-0.07(0.03)*	0.05(0.03)	-0.12(0.03)***
Is respected and admired	-0.13(0.03)***	-0.07(0.03)**	0.00(0.03)	-0.10(0.02)***
Is very likeable	-0.18(0.03)***	-0.09(0.03)**	-0.02(0.03)	-0.11(0.03)***
Is physically attractive	-0.16(0.03)***	-0.08(0.03)*	-0.02(0.03)	-0.12(0.03)***
<i>How much do you...</i>				
Like this person overall?	-0.18(0.03)***	-0.11(0.03)***	-0.06(0.03)*	-0.13(0.03)***
Trust this person?	-0.14(0.02)***	-0.10(0.02)***	-0.08(0.02)***	-0.08(0.02)***

Note. * $p < .05$, ** $p < .01$, *** $p < .001$. Approximate effect size estimates (β) were computed by standardizing the dark personality trait across participants and the dyadic evaluations across dyadic impressions. Relationships represent univariate effects in that they do not control for the other 3 dark tetrad trait levels.

Table 5: Relationship of target's Dark Tetrad trait level to the perceiver's assessment of their interaction partner.

Dyadic Evaluation	Perceiver Dark Tetrad Trait			
	Sadism β (SE)	Psychopathy β (SE)	Narcissism β (SE)	Machiavellianism β (SE)
<i>I see this person as someone who...</i>				
Is aggressive and unrestrained	0.34(0.04)***	0.33(0.04)***	0.09(0.04)*	0.21(0.04)***
Is bashful and unassuming	0.12(0.04)**	0.06(0.04)	-0.10(0.04)*	0.10(0.04)*
Is opportunistic and crafty	0.11(0.04)**	0.11(0.04)**	0.08(0.04)*	0.07(0.04)
Is sarcastic and demanding	0.29(0.04)***	0.30(0.04)***	0.07(0.04)	0.21(0.04)***
Is mature	-0.12(0.03)***	-0.09(0.03)**	-0.02(0.03)	-0.08(0.03)*
Is reasonable	-0.12(0.03)***	-0.14(0.03)***	-0.03(0.03)	-0.10(0.03)**
Is hypocritical	0.28(0.04)***	0.29(0.04)***	0.08(0.04)	0.21(0.04)***
Is short-sighted	0.33(0.03)***	0.29(0.04)***	0.06(0.04)	0.22(0.04)***
Is a leader	-0.09(0.03)**	-0.06(0.03)*	-0.03(0.03)	-0.07(0.03)*
Has high status	-0.05(0.03)	-0.04(0.03)	-0.00(0.03)	-0.02(0.03)
Is engaging	-0.17(0.03)***	-0.10(0.03)***	-0.02(0.03)	-0.13(0.03)***
Is respected and admired	-0.14(0.03)***	-0.10(0.03)**	-0.03(0.03)	-0.10(0.03)**
Is very likeable	-0.13(0.03)***	-0.13(0.03)***	-0.09(0.03)**	-0.13(0.03)***
Is physically attractive	-0.13(0.03)***	-0.12(0.03)***	-0.11(0.03)***	-0.15(0.03)***
<i>How much do you...</i>				
Like this person overall?	-0.14(0.03)***	-0.10(0.03)**	-0.04(0.03)	-0.14(0.03)***
Trust this person?	-0.08(0.04)	-0.09(0.04)*	-0.07(0.04)	-0.13(0.04)***

Note. * $p < .05$, ** $p < .01$, *** $p < .001$. Approximate effect size estimates (β) were computed by standardizing the dark personality trait across participants and the dyadic evaluations across dyadic impressions. Relationships represent univariate effects in that they do not control for the other 3 dark tetrad trait levels.

Table 6: Relationship of perceiver's Dark Tetrad trait level to the perceiver's assessment of their interaction partner.

Dark Personality Trait	Distinctive Accuracy		Normative Accuracy	
	Estimate (SE)	<i>d</i>	Estimate (SE)	<i>d</i>
Perceiver Partial Relationships				
Sadism	-0.01(0.01)	- 0.19	-0.13(0.03)***	- 0.59
Psychopathy	-0.04(0.01)**	- 1.19	-0.07(0.04)	- 0.29
Narcissism	0.02(0.01)*	0.56	0.07(0.03)**	0.41
Machiavellianism	0.01(0.01)	0.46	-0.05(0.02)*	- 0.22
Target Partial Relationships				
Sadism	-0.03(0.02)	- 0.25	-0.08(0.02)***	- 0.63
Psychopathy	-0.01(0.02)	- 0.06	0.04(0.03)	0.33
Narcissism	0.03(0.02)	0.21	-0.02(0.02)	- 0.18
Machiavellianism	-0.02(0.01)	- 0.17	-0.01(0.02)	- 0.11

Note. * $p < .05$, ** $p < .01$, *** $p < .001$. Effect size estimates (*d*) were computed as the predicted change in the respective random effect slope (e.g., perceiver distinctive accuracy) for a 2 *SD* change in the continuous predictor. Partial relationships control for the other three dark personality traits.

Table S1: Perceiver and target Dark Tetrad partial moderation of distinctive and normative accuracy.

Dyadic Evaluation	Perceiver Dark Tetrad Trait			
	Sadism β (SE)	Psychopathy β (SE)	Narcissism β (SE)	Machiavellianism β (SE)
<i>I see this person as someone who...</i>				
Is aggressive and unrestrained	0.19(0.05) ^{***}	0.23(0.06) ^{***}	-0.12(0.04) ^{**}	0.03(0.04)
Is bashful and unassuming	0.10(0.06)	0.05(0.07)	-0.18(0.05) ^{***}	0.07(0.05)
Is opportunistic and crafty	0.06(0.06)	0.05(0.06)	0.02(0.05)	0.01(0.05)
Is sarcastic and demanding	0.13(0.05) [*]	0.23(0.06) ^{***}	-0.13(0.04) ^{**}	0.06(0.04)
Is mature	-0.10(0.05) [*]	-0.02(0.05)	0.03(0.04)	-0.02(0.04)
Is reasonable	-0.02(0.05)	-0.14(0.05) ^{**}	0.08(0.04)	-0.03(0.04)
Is hypocritical	0.12(0.05) [*]	0.21(0.06) ^{***}	-0.10(0.04) [*]	0.07(0.04)
Is short-sighted	0.21(0.05) ^{***}	0.16(0.06) ^{**}	-0.13(0.04) ^{**}	0.06(0.04)
Is a leader	-0.07(0.04)	0.02(0.05)	-0.01(0.03)	-0.04(0.03)
Has high status	-0.04(0.05)	-0.03(0.05)	0.02(0.04)	0.02(0.04)
Is engaging	-0.15(0.04) ^{***}	0.03(0.05)	0.03(0.03)	-0.07(0.03) [*]
Is respected and admired	-0.10(0.05) [*]	-0.02(0.05)	0.03(0.04)	-0.04(0.04)
Is very likeable	-0.05(0.04)	-0.03(0.05)	-0.04(0.04)	-0.07(0.04)
Is physically attractive	-0.05(0.05)	0.02(0.05)	-0.07(0.04)	-0.10(0.04) ^{**}
<i>How much do you...</i>				
Like this person overall?	-0.08(0.05)	0.01(0.05)	0.02(0.04)	-0.10(0.04) ^{**}
Trust this person?	0.01(0.06)	-0.01(0.06)	-0.02(0.05)	-0.11(0.05) [*]

Note. ^{*} $p < .05$, ^{**} $p < .01$, ^{***} $p < .001$. Approximate effect size estimates (β) were computed by standardizing the dark personality trait across participants and the dyadic evaluations across dyadic impressions. Relationships represent partial effects controlling for the other 3 dark tetrad trait levels.

Table S2: Partial relationship of perceiver's Dark Tetrad trait level to the perceiver's assessment of their interaction partner.

Dyadic Evaluation	Target Dark Tetrad Trait			
	Sadism β (SE)	Psychopathy β (SE)	Narcissism β (SE)	Machiavellianism β (SE)
<i>I see this person as someone who...</i>				
Is aggressive and unrestrained	0.01(0.03)	0.05(0.03)	0.06(0.02)**	-0.04(0.02)
Is bashful and unassuming	0.03(0.02)	-0.03(0.03)	-0.00(0.02)	0.03(0.02)
Is opportunistic and crafty	0.01(0.02)	-0.03(0.03)	0.09(0.02)***	-0.03(0.02)
Is sarcastic and demanding	0.04(0.03)	0.03(0.03)	0.05(0.02)*	-0.04(0.02)
Is mature	-0.08(0.04)	-0.01(0.04)	-0.03(0.03)	-0.01(0.03)
Is reasonable	-0.04(0.03)	-0.07(0.04)	-0.03(0.03)	0.03(0.03)
Is hypocritical	0.01(0.02)	0.04(0.03)	0.01(0.02)	0.01(0.02)
Is short-sighted	0.03(0.02)	0.03(0.03)	0.01(0.02)	0.00(0.02)
Is a leader	-0.14(0.04)***	0.01(0.05)	0.13(0.03)***	-0.08(0.03)*
Has high status	-0.13(0.03)***	0.08(0.04)*	0.05(0.03)	-0.04(0.03)
Is engaging	-0.19(0.04)***	0.05(0.05)	0.11(0.04)**	-0.08(0.04)*
Is respected and admired	-0.12(0.04)**	0.02(0.04)	0.05(0.03)	-0.06(0.03)*
Is very likeable	-0.20(0.04)***	0.06(0.05)	0.03(0.03)	-0.05(0.03)
Is physically attractive	-0.17(0.04)***	0.06(0.05)	0.03(0.04)	-0.06(0.03)
<i>How much do you...</i>				
Like this person overall?	-0.18(0.04)***	0.06(0.04)	-0.02(0.03)	-0.05(0.03)
Trust this person?	-0.13(0.03)***	0.02(0.03)	-0.05(0.03)*	-0.01(0.03)

Note. * $p < .05$, ** $p < .01$, *** $p < .001$. Approximate effect size estimates (β) were computed by standardizing the dark personality trait across participants and the dyadic evaluations across dyadic impressions. Relationships represent partial effects controlling for the other 3 dark tetrad trait levels.

Table S3: Partial relationship of Target's Dark Tetrad trait level to the perceiver's assessment of their interaction partner.

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