What makes a person harm another? Why do some people enjoy witnessing someone suffer? These are some of the questions that drive scholars to explore the dark side of personality as a potential explanation for evil behavior. Among a long history of research, three personality traits consistently emerged, resulting in the Dark Triad (Paulhus & Williams, 2002), which consists of nonclinical psychopathy (violent tendencies and a lack of remorse), nonclinical narcissism (entitlement and need for admiration), and Machiavellianism (ruthlessness and exploitation) and others expanded it to include a fourth construct of sadism (pleasure in other’s suffering). Although the common unpinning of the Dark Tetrad is a lack of empathy, little empirical research has investigated the interrelationship among the components of the Dark Tetrad once empathy is delineated into affective (feeling another’s emotions) and cognitive (understanding another’s emotions) aspects. The purpose of this study was to determine the interrelationship of the Dark Tetrad and affective and cognitive empathy. Over 250 participants completed measures used to assess these constructs. We hypothesized that the Dark Tetrad would be inversely related to affective empathy, but Machiavellianism and narcissism would be positively related to cognitive empathy. The hypotheses were partially supported. Sequential (hierarchical) multiple regression yielded psychopathy, $\beta = -.29$, $t(259) = -3.97$, $p = .001$, narcissism, $\beta = .20$, $t(260) = 3.26$, $p = .001$, and Machiavellianism, $\beta = -.17$, $t(259) = -2.46$, $p = .02$, were significant negative predictors of affective empathy. Multiple linear regression yielded psychopathy, $\beta = -.31$, $t(260) = 4.01$, $p < .001$, was a negative predictor whereas narcissism, $\beta = .13$, $t(260) = 2.10$, $p = .04$, was a positive predictor of cognitive empathy. Theoretical explanations to account for both negative and positive associations of the Dark Tetrad include empathic inducement or the ability to manipulate others by overwhelming them with emotions to solicit a sympathetic response. Future research should seek to examine the differing relationships among these traits, specifically narcissism as it manifests both negative and positive attributes of empathy simultaneously.

Keywords: dark tetrad, narcissism, psychopathy, Machiavellianism, sadism, empathy
attention-seeking behaviors (Miller et al., 2021; Paulhus, 2014; Paulhus & Williams, 2002; Sauls & Ziegler-Hill, 2020). Additionally, recent research has suggested that a crucial facet of narcissism is an exploitative nature in order to fulfill self-serving interests, further one's personal goals, or preserve oneself (Liao et al., 2019; Perrotta, 2020; Steinberg et al., 2022). The authors suggested that empathic inducement, the ability to manipulate others by emotionally overwhelming them, is commonly used by narcissists in order to exploit others for personal gain. Psychopathic personalities display high impulsivity, thrill seeking behaviors, callousness, superficial charm, impulsive ness, irresponsibility, and remorselessness (Hare, 2003; Jakobwitz & Egan, 2006; Paulhus & Williams, 2002; Thomas & Segal, 2005; Walker et al., 2022a). Machiavellianism refers to a manipulative personality reflective of Niccolò Machiavelli’s political philosophies and statements (Christie & Geis, 1970; Paulhus & Williams, 2002). These personality traits are typified by a duplicitous interpersonal style, which revolves around prevailing cynical beliefs and a pragmatic, even unethical, sense of morality (Jones & Paulhus, 2009). Furthermore, those who tend toward high levels of Machiavellian triads engage in the exploitation of others due to various motivations, such as a fear of being exploited themselves, lack of control, or lack of concern regarding consequences for others (Abell et al., 2016; Aldousari & Ickes, 2021; Ashton et al., 2000; Bekiari & Spanou, 2018; Paal & Bereczkei 2007). Jones and Mueller (2022) suggested that Machiavellians are unique due to environmentally adaptive impulse control; thus using antisocial behaviors when benefits outweigh the costs, a characteristic that separates Machiavellianism from psychopathy. Lastly, is sadism, the enjoyment of other people’s suffering (Paulhus & Dutton, 2016).

Sadism is a distinct dark trait characterized by aggression, cruelty toward others, intentionally inflicting pain, and an assertion of dominance (Foulkes, 2019; O’Connell & Marcus, 2019; Pineda et al., 2021; Thomas & Egan, 2022). Although sadism was thought to be limited to sexual and criminal activities, researchers now theorize that it is a common evolutionary behavior and can be demonstrated in many aspects, such as politics, sports, and interpersonal relationships (Baumeister & Campbell, 1999; Nell, 2006; Taylor, 2009).

Given that the core of the Dark Tetrad is a lack of empathy, it is worthwhile to understand the relationship of empathy and these personality traits. Empathy, in a broad sense, is the reaction to another individual’s emotions and experiences (Davis, 1983). In a specific sense, empathy consists of two subcomponents: affective, which is feeling another individual's emotions, and cognitive, which is understanding another person's emotions. In an epistemological review of empathy, sympathy, and pity, Gerdes (2011) teased through the historical and ambiguous uses of these terms, suggesting that empathy and sympathy are often erroneously interchangeable. According to modern definitions, sympathy refers to a reflection of affective sharing or feeling with another person, an externally focused ability (Gerdes, 2011). Whereas, de Waal (2008) defined empathy as the capacity to be affected by another person's emotional state, while demoting the reasoning behind these feelings and further adopting these feelings, as cited in Gerdes (2011). Furthermore, Cuff et al. (2016), Thiroux et al. (2014), and Vossel et al. (2015) corroborated that empathy is multidimensional because it is inclusive of cognitive processes, but sympathy is primarily affective. Empathy and sympathy are often conflated, yet are uniquely distinct based on the multidimensional view, as used in this paper, that empathy includes cognitive processes that are more extensive than required by sympathy.

There is debate, among researchers, regarding the nature of the interrelationship among the Dark Triad and empathy. Schimmenti et al. (2019) and Turner et al. (2019) suggested that Dark Triad traits as a whole are negatively associated with affective and cognitive empathy. However, Wai and Tiliopoulos (2012) suggested that, although all Dark Triad traits are associated with a reduction in affective empathy, the traits do not impact cognitive empathy (Heym et al., 2019; Puthillam et al., 2021). Yet Giammarco and Vernon (2014) found that Machiavellianism and psychopathy were inversely related to cognitive empathy (as measured by perspective taking) and affective empathy (as measured by empathic concern). Furthermore, they postulated that cognitive and affective empathy partially served as mediators between both Machiavellianism and forgivingness and also between psychopathy and forgivingness. In a recent meta-analysis of 70 studies, Blötner et al. (2021) found that Machiavellianism was inversely correlated with all facets of empathy. Further complicating the pattern, Jonason et al. (2013) suggested that low empathy rates were related to narcissism in women, but psychopathy in men.

Proceeding to the Dark Tetrad, which includes the fourth component of sadism, while there is less literature, researchers have suggested that sadism behaves in a similar, yet distinct, pattern as other Dark Triad traits (Mededović & Petrović, 2015). This distinction is primarily seen in active behavior to target a person, or passive behavior to observe others suffering (Dow, 2022). More recently, studies have concluded that sadism is inversely related to both cognitive and affective empathy (Velimirović et al., 2018). Pajevic et al. (2018) concluded that all four components of the Dark Tetrad are inversely
related to both cognitive and affective empathy, barring a positive correlation between narcissism and cognitive empathy. Thus, sadism may result in an empathic deficit in which there is a division between cognitive and affective pitfalls. Similarly to the design of Pajevic et al. (2018), we explored the relationship between the Dark Tetrad and the two-dimensional model of empathy in a large sample by performing homogenous statistical analyses. However, our study is unique due to sampling a different profile of dark traits, which are believed to predict cognitive and affective empathy. Beyond the general acceptance of deficits related to the Dark Tetrad, there is little consensus on which aspects of empathy have a relationship with each trait.

Extant research appears to suggest ambivalent findings with regard to the relationship between the Dark Tetrad and empathy; thus, the problem driving the present study was to further investigate and clarify this relationship. The question driving this research was to what extent is the Dark Tetrad related to affective and cognitive empathy? We hypothesized that all components of the Dark Tetrad would be negatively related to affective empathy, but both narcissism and Machiavellianism would be positively related to cognitive empathy due to their shared manipulative traits. With current study, we sought to advance the broader line of malevolent research by attending to the interrelationships between empathy and dark traits.

Methods

Participants
For sample size estimation, a priori power analysis was conducted using G*Power version 3.1 (Faul et al., 2009) and Cohen’s (1988) criteria of effect sizes. A series of power analyses on nonpublished pilot study data, which compared empathy on the Dark Triad, yielded sample sizes ranging from 189 to 263. Thus, the obtained sample size of 265 liberal-arts undergraduate students was deemed sufficient to test our current hypotheses. Descriptive statistics and frequency analyses were conducted on the demographic data gathered. Of the total participants, 216 identified as women and 49 identified as men. The race distribution of the participants was: 215 (81.1%) White, 15 (5.7%) Hispanic, 13 (4.9%) Asian American, 9 (3.4%) African American, and 13 (4.9%) identified as other race. The average age of the students was 19.62 years with a standard deviation of 1.20 years and a minimum of 18 and maximum of 25 years. Participants were recruited using the SONA Systems research software at their university with most coming from an introductory psychology course. Students were incentivized to complete the study for course credit.

Procedure and Measures

Institutional review board approval (#1554685-2) was given prior to the collection of any data. Students first completed a consent form, then were presented with questions regarding demographics, followed by various questionnaires regarding empathy and the Dark Tetrad.

Empathy Quotient

To assess empathy, participants completed a truncated version of Baron-Cohen and Wheelwright’s (2004) Empathy Quotient (EQ). A total of 10 items were presented to each participant. For each item, participants were asked to rate their level of agreement with each statement on a 4-point scale ranging from strongly agree to strongly disagree (Baron-Cohen & Wheelwright, 2004). A sample item from the EQ is as follows: “Indicate your agreement with the following statement: I find it hard to know what to do in a social situation” (Baron-Cohen & Wheelwright, 2004). The EQ was measured via adding one or two points to a total score based on the question number, indicative of reverse coding.

Commonly used measures include Hogan (1969), which emphasizes the cognitive perspective of empathy; Mehrabian and Epstein (1972), which view empathy as purely affective; and Davis (1983), which incorporates both cognitive and affective perspectives of empathy (Neumann et al., 2015). Much of the ambiguity surrounding the measurement and understanding of empathy stems from the historically vague and obscure definitions of empathy (Neumann et al., 2015). Historically, empathy has been viewed as a binary construct; however, empirical investigations, such as Baron-Cohen’s (2012), have begun to measure empathy as a continuum. We used the EQ in the present study due to robust levels of reliability and validity, succinctness, and accessibility. Baron-Cohen and Wheelwright (2004) reported a Cronbach’s alpha of .92 for the EQ, but other researchers tended to report alpha levels ranging from .78 to .93 (Neumann et al., 2015). Similarly, Baron-Cohen and Wheelwright (2004) reported a high test-retest reliability of .97 for the EQ (Neumann et al., 2015). The internal reliability of the EQ used in the current sample was .63; however, we argue that the scale is situationally specific to an interpretation of internal processes. This study was conducted during the COVID-19 pandemic when arguably students faced higher levels of stress, a factor which has been shown to cause dysfunction in empathy (Barbosa et al., 2013; Music, 2014; Nitschke & Bartz, 2023; Shirtcliff et al., 2009). Furthermore, the low internal reliability present might have been caused by the disproportionate number of female participants in the current study, due to sex differences that have been exhibited by the EQ (Neumann et al., 2015).
Short Measure of the Dark Triad

Jones and Paulhus’ (2014) short measure of the Dark Triad was used to assess corresponding, nonclinical, dark personality traits. The scale consists of 27 total items divided into three subscales of narcissism, Machiavellianism, and psychopathy, each containing nine items. Students were asked to rate their agreement or disagreement with each item on a 5-point scale which ranges from 1 (strongly disagree) to 5 (strongly agree; Jones & Paulhus, 2014). A sample item from the Short Dark Triad is as follows: “Rate your level of agreement or disagreement with the following statement: ‘Many group activities would be dull without me’” (Jones & Paulhus, 2014). The mean score of the nine items in each subscale were calculated respectively. Cronbach’s alphas of the three subcomponents (narcissism, Machiavellianism, and psychopathy) ranged from .76 to .82, indicating good to strong reliability.

Varieties of Sadistic Tendencies Scale

Lastly, to measure various subcategories of sadism, we used Buckels’ (2009) Varieties of Sadistic Tendencies Scale, which was used in the original testing for the Dark Tetrad. The scale consists of 18 total agreement items, which are divided into three subcategories: relational sadism, vicarious sadism, and political sadism. Seven items were categorized as relational sadism, six as vicarious sadism, and five as political sadism. Participants were asked to rate their level of agreement or disagreement on a 5-point scale, which ranges from 1 (strongly disagree) to 5 (strongly agree; Buckels, 2009). A sample item from the scale is: “Rate your level of agreement with the following statement: ‘I dominate others using fear,’ ” (Buckels, 2009). The total sadism score and subscores were calculated and analyzed. Cronbach’s alphas of the three subcomponents (relational, vicarious, and political sadism) ranged from .62 to .75, indicating fair to good reliability.

Results

Preliminary Correlations

Pearson’s r correlations were conducted to assess the interrelationship among the variables. Gender (female coded as 1 and male as 2) was positively related to psychopathy (r = .21, p < .001), and sadism (r = .41, p < .001), and inversely related to affective empathy (r = −.15, p = .02). Gender was not related to narcissism (r = .74), narcissism (r = .74) Machiavellianism (p = .10), nor cognitive empathy (p = .55). All components of the Dark Tetrad correlated together (r = .24 to .53, p < .001). Psychopathy (r = −.35, p < .001), Machiavellianism (r = −.28, p < .001) and sadism (r = −.25, p < .001) were inversely related to affective empathy, but only psychopathy (r = −.27, p < .001) and Machiavellianism were inversely related to cognitive empathy (r = −.15, p = .02; see Table 1). Overarching hypotheses were supported by results such that each of the Dark Tetrad traits, excluding narcissism, were inversely related to affective empathy. Surprisingly, psychopathy and Machiavellianism were both negatively correlated to cognitive empathy, opposing original hypotheses.

Multiple Regressions

A sequential (hierarchical) multiple regression was calculated to predict affective empathy based on gender and the Dark Tetrad (psychopathy, narcissism, Machiavellianism, and sadism). For affective empathy, gender was entered into the equation first, F(1, 263) = 5.85, p = .02, R² = .02, β = −.15, t(260) = −2.42, p = .02, followed by the Dark Tetrad, F(5, 259) = 11.23, p < .001, R² = .18. Psychopathy, β = −.29, t(259) = −3.97, p = .001, narcissism, β = .20, t(260) = 3.26, p = .001, and Machiavellianism, β = −.17, t(259) = −2.46, p = .02, were statistically significantly to the prediction, however sadism, β = −.05, t(259) = −0.70, p = .49, was not. According to the hypotheses, psychopathy and Machiavellianism were accurately predicted to be negatively correlated to affective empathy. However, narcissism showed an unpredicted positive correlation with affective empathy, but sadism showed no significant correlation.

Given no statistical correlation for gender and cognitive empathy, a linear multiple regression was calculated to predict cognitive empathy based solely on the Dark Tetrad, F(4, 260) = 6.46, p < .001, R² = .09. Psychopathy, β = −.31, t(260) = 4.01, p < .001, and narcissism, β = .13, t(260) = 2.10, p = .04, were statistically significantly to the prediction, however Machiavellianism, β = −.04, t(260) = −.58, p = .57, and sadism, β = .40, t(260) = .03, p = .69, were not. Both psychopathy and narcissism were significant to the prediction of cognitive empathy; however, both traits tended to be predictive in the opposite direction than anticipated (e.g., psychopathy was a positive predictor of

<table>
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<th>Variable</th>
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<td>3. Machiavellianism</td>
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<td>.30</td>
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<td>4. Sadism</td>
<td>1.76</td>
<td>0.36</td>
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<td>.53</td>
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<td>5. Affective empathy</td>
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<td>6. Cognitive empathy</td>
<td>3.75</td>
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<td>.03</td>
<td>−.27</td>
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<td>7. Gender</td>
<td>1.18</td>
<td>0.39</td>
<td>.21</td>
<td>.10</td>
<td>.41</td>
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Note. *p < .05; **p < .01, df = 263
empathy, but narcissism was negative). Machiavellianism and sadism were not significant to the prediction of cognitive empathy, opposing original hypotheses.

**Discussion**

The purpose of this study was to help clarify the relationship between the Dark Tetrad and affective and cognitive empathy. The findings suggested that, although the components of Dark Triad were inversely related to affective empathy, sadism was not related. For cognitive empathy, only psychopathy was inversely related, but narcissism was positively related. Deficits in cognitive empathy, as the result of psychopathy, tend to have negative impacts on social interactions. For example, the lack of cognitive empathy that accompanies psychopathy could result in callousness, cruelty, or intentional social harm to others. Theoretical explanations to account for this dual nature of narcissism include empathic inducement and the negation of cognitive empathy and affective empathy. Empathetic inducement is the ability to overwhelm others with emotions or feelings, with the ultimate goal of gaining sympathy from or manipulating others. A factor that seemingly contributes to this ability to influence others was exploitativeness, a common characteristic of narcissists (Dow, 2022). Konrath et al. (2014) found that narcissists can “read people like a book,” yet they may use this ability to manipulate others for their own nefarious gain. Narcissistic character traits may impact social interactions such that an individual with high levels of narcissism will work to ensure that their needs are fulfilled before considering others. As a result of this intentional self-centeredness, others may be unintentionally harmed, offended, or put down by a narcissist’s behaviors.

To explain the null findings of sadism for both affective and cognitive empathy, it was possible empathy consists of a continuum with affective and cognitive empathy residing on the end points of the linear scale. The extremes (affective and cognitive) ultimately will come to an equilibrium point in which there is very little or low empathy that leans slightly toward one direction. Thus, they could potentially be neutralizing each other if both cognitive and affective empathy are on the same continuum. However, if they are thought to be orthogonal dimensions and not ends of a continuous dimension, they may act independently, suggesting that another variable was mediating the relationship between sadism and empathy. The authors theorize that culture could potentially mediate the relationship between sadism and empathy. It is possible that aggressive and cruel behaviors that are not tolerated in one culture, are condoned, or even praised, in another culture. These cultural difference may manifest in different acceptable behaviors in sports, politics, social relationships, or group dynamics. Based on the current findings, it would appear that sadism is a separate construct than the Dark Triad traits due to the null relationships found between cognitive and affective empathy. However, additional research is needed to determine if sadism should still be included in the Dark Tetrad.

The current study expanded upon and challenged aspects of previous research. For example, the current study results suggest that high levels of psychopathy and Machiavellianism are correlated with low levels of affective empathy, similar to Turner et al. (2019). Similarly, the current study found no relationship between narcissism and affective empathy, whereas Turner et al. (2019) found a weak inverse correlation. Further, the current research expanded upon these findings via the inclusion of sadism, which tended to be inversely related to affective empathy and showed no correlation with cognitive empathy. However, with regard to cognitive empathy, the current study challenged findings presented in Turner et al. (2019). For example, the current study results suggest that psychopathy and Machiavellianism are inversely associated with cognitive empathy, although narcissism is unrelated, opposing findings from Turner et al. (2019). Furthermore, Petrides et al. (2011) offered nuance, via the study of emotional intelligence, to the findings, which are highlighted in the current research. Emotional intelligence refers to individuals’ perceptions of their own emotional capabilities (Petrides et al., 2011). According to Petrides et al. (2011), emotional intelligence is negatively associated with psychopathy and positively associated with narcissism. Individuals with high emotional intelligence tended to view themselves as “empathic and good-natured” while exhibiting hubris. The findings of Petrides et al. (2011) mirror what the authors believe to be true of narcissism, that is those who have narcissistic tendencies would believe that they have high emotional intelligence due to the grandiose sense of self commonly associated with narcissists. We found that narcissism positively predicted affective empathy whilst negatively predicting cognitive empathy. Thus, narcissists may have the capacity to feel for others, and believe they empathize to a strong degree, yet they lack the ability to understand others’ emotions due to a self-centered fixation on themselves.

Our current study is not without its limitations. The assessments included subclinical measures from a predominantly White college sample; thus, the scope of generalization based on race is limited. However, within the racially homogenous sample population, universal generalizations cannot be made due to a large proportion of female participants. Extant research states that men or those with masculine traits tend to score higher
than women on dark personality traits, such as those in the Dark Triad (Gluck et al., 2020; Hartung et al., 2022; Jonason & Davis, 2018; Pineda et al., 2018). Hence, the current study may be limited by an overrepresentation of female participants; thus, misrepresenting levels of dark traits among college students. To better represent a collegiate population, additional research is needed to determine the extent to which these findings expand to a more racially and gender diverse sample. Further, this study may be limited by the mediating impact of age on Dark Triad Traits. Extant research has suggested that age and dark traits have an inverse relationship, such that as age increases, levels of dark traits decrease due to growth beyond egocentrism (Barlett, 2016; Barlett & Barlett, 2015; Carter et al., 2015; Hartung et al., 2022; Kawamoto et al., 2020). Thus, this study could report inflated levels of dark traits that are not generalized to populations outside of the college-aged sample. Additionally, due to the self-report nature of this study, results may be weakened by a lack of introspective capacity.

The current study sought to address the role of Dark Tetrads with empathy. Once omitting sadism, the Dark Triad did appear to have a relationship with both affective and cognitive empathy. In particular, narcissism and psychopathy were traits that influenced both types of empathy. These findings mirror and oppose some of the results presented in previous studies. With the advancement of this line of research, a better understanding of dark personality traits and the impact their presentation may have on society will help us to understand why people harm others or enjoy observing suffering. Future research may expand upon the findings by addressing the variable that may be mediating the relationship between empathy and sadism. Gaining a greater understanding of this relationship can help predict the behavioral patterns that impact interpersonal relationships and influence malevolent activity.

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