

Monk Prayogshala Working
Paper # 2022-06

Arathy Puthillam
Nikita Mehta
Hansika Kapoor
Sarah Rezaei
Nishtha Lamba

August, 2022

HELPFUL OR NOT?

Appraisal and Mechanisms of Prosociality in the Dark Triad

Helpful or Not? Appraisal and Mechanisms of Prosociality in the Dark Triad

Arathy Puthillam

Department of Psychology, Monk Prayogshala, Mumbai, India

Nikita Mehta

Department of Psychology, Monk Prayogshala, Mumbai, India

Hansika Kapoor

Department of Psychology, Monk Prayogshala, Mumbai, India
Neag School of Education, University of Connecticut, Storrs, USA

Sarah Rezaei

Department of Psychology, Monk Prayogshala, Mumbai, India

Nishtha Lamba

Department of Psychology, Middlesex University Dubai, UAE

Address correspondence to Hansika Kapoor at hk@monkprayogshala.in

The Psychology Working Papers are a series of ongoing research outputs from the Department of Psychology, Monk® Prayogshala®. The purpose of making these papers publicly available is to initiate dialogue and receive feedback on the preliminary work presented. The views and opinions expressed therein are those of the authors and do not necessarily reflect those of Monk Prayogshala, any supporting agencies, or any of its associated entities.

Monk® Prayogshala® is a Section 8 company registered under the Indian Companies Act, 2013. The contents of this document are the Intellectual Property of Monk® Prayogshala® (Sec. 25), a company incorporated under the provisions of the Companies Act, 1956 and having its registered office at 4114, Oberoi Garden Estates, C Wing, Next to Chandivali Studios, Powai, Mumbai 400 072, India. (C) Monk® Prayogshala®, 2011-2020. All rights reserved. The recipient of this document is not permitted to copy, make available, sell, disclose, publish, disseminate or otherwise transmit the information contained in this document without prior permission from Monk® Prayogshala®.

The authors are thankful to Sampada Karandikar and Aneree Parekh for their earlier work on this project. They are also thankful to the 2nd year Psychology undergraduate students of Middlesex University Dubai, who assisted in collecting data for this study as a part of their course. Specifically, we extend our thanks to Mariam Khadeeja, Wania Syed, Aesha Kapoor, Zobia Waseem, Nikhil Pradeep, Shamma Siddique, Akshaya Lakshmanan, Neha Susan Alex, Aashia Shefi, Shana Fathima, Sarah Abdul Rasheed, Doyel Shruthi, Khadija Suroor Khan, Tughna Fatema Rasool, Maryam Wali Khan, Mariam Ahmed Ibrahim Abdelfattah Mahmoud, Fatima Mobin, Basma Baiju, Shannara Lakshmi Kallakandy, Megan Anne Sharif, Fatima Adamu Fanda, Ahmed Abdul Razak, Sri Venkatanathan Chandrasekaran, and Arja Prem. This project was funded by Monk Prayogshala; no external grants/funding was received for this project. The authors disclose no conflicts of interest. Study 1 has been preregistered in the OSF repository. Registration DOI: [10.17605/OSF.IO/S4JQ3](https://doi.org/10.17605/OSF.IO/S4JQ3). Study 2 has been preregistered in the OSF repository. Registration DOI: [10.17605/OSF.IO/HX9JY](https://doi.org/10.17605/OSF.IO/HX9JY).

*Data availability: Study 1: Data available at <https://osf.io/7ch38/>; Study 2: Data available at <https://osf.io/q35xa/>
Ethics approval: Study 1 (#023-018) was approved by the ethics committee at Monk Prayogshala in 2018. Study 2 (#023c-021) was approved by the ethics committee at Monk Prayogshala in 2021.*

Helpful or Not? Appraisal and Mechanisms of Prosociality in the Dark Triad

Abstract

The Dark Triad (DT) is associated with maladaptive interactions in their social and interpersonal relationships. Individuals with high levels of DT traits are also assumed to be defectors in social situations. However, it is unclear how they perceive others' helpfulness towards them. Thus, study 1 aimed at understanding whether these individuals are able to perceive help from others, when provided with situations that differentially benefit them. In a multinational sample from over 40 countries ($N = 679$), findings revealed that in a situation where others are objectively not helpful, those with high levels of psychopathy and Machiavellianism uniquely perceive others as helpful. Furthermore, in a situation where others are objectively helpful, those with high psychopathy perceive others as less helpful. To extend our understanding of the DT's behavior in social situations, Study 2 explored the perception of helpfulness and defection in an ultimatum game among the DT at different levels of helpfulness (high- and low- help condition). Data from 1059 participants showed that psychopathy positively predicted perception of help for the low-help group—suggesting that individuals with a high score on psychopathy are less likely to recognize others' helpfulness towards them. Additionally, individuals with a high score on narcissism showed a greater likelihood of accepting a high help offer. Machiavellianism, however, did not predict perception of help and defection in either of the conditions. Future studies can explore intervention strategies for improving individuals' (with high levels of DT) perceptions in social situations.

Keywords: Dark Triad, prosocial behavior, defection, perception of help, ultimatum game

Helpful or Not? Appraisal and Mechanisms of Prosociality in the Dark Triad

1. Introduction

The Dark Triad (DT) is associated with low levels of prosociality and is characterized by extracting resources from others for their own benefit (Jonason et al., 2010). They are characteristically more self-centered, exploitative, and considerably low on empathy (Jonason & Krause, 2013; Jonason et al., 2015; Paulhus & Williams, 2002), which is reflected in the way they navigate social interactions. In order for individuals to reciprocate in a prosocial event, they need to understand that help has been rendered to them. It is not clear whether those with higher levels of DT are able to assess others' helpfulness in social situations.

Social Style

Individuals with high DT traits often pursue an agentic social style—they tend to be highly individualistic, competitive, and are less prosocial (Jonason, Li, et al., 2010). They view others unfavorably and perceive themselves highly (Rauthmann, 2012). Particularly, narcissists overvalue themselves by viewing oneself as intelligent, sociable, and dominant and may further disparage others. Machiavellians view others as malleable, weak, and low on intelligence, while viewing themselves as intelligent, sociable, and dominant. Individuals high on psychopathy tend to be disagreeable, and view themselves as dominant and open, but less nurturing and conscientious. Thus, dark personalities see others as having lower agency (Rauthmann, 2012).

Dark personalities are also maladaptive in their selection of social bonds and tend to create instability in their social environments. In friendships, DT traits have been linked with choosing friends that served certain strategic purposes: people who are attractive and intelligent or may be advantageous and have high social status (Jonason & Schmitt, 2012).

Prosociality and the Dark Triad

Considering their impulsivity and short-term orientation, as evidenced by their fast life strategy (Kaplan et al., 2009; Jonason et al., 2010), DT tends to employ a cheater strategy in prosocial situations. The DT and its sub-traits are negatively correlated with prosociality (Aghababaei et al., 2014). Particularly, Machiavellianism and psychopathy negatively predicted other-oriented reasoning; narcissism is only negatively related to self-reported altruism (Aghababaei et al., 2014). This might also imply that those with high narcissism are aware of their selfishness, whereas the other two traits are not.

Batson (2011) states that even though one engages in prosocial behaviors due to altruistic reasons, egoistic reasons (such as, receiving praise or attention, reducing uncomfortable feelings or receiving something in return) might also motivate individuals to perform prosocial actions. Past studies have suggested a positive relationship between narcissism and self-reported prosocial behavior (Kauten & Barry, 2016; Zuo et al., 2016) and altruistic acts (Palmer & Tackett, 2018).

DT was negatively related to prosociality especially with Machiavellianism being a strong negative predictor of prosocial tendencies and narcissism a predictor of prosocial behavior (Wertag & Bratko, 2019). Another study pointed out that none of the DT traits were related to compassionate altruism; however, controlling for other DT traits and certain demographic variables, narcissism predicted general altruism (Trahair et al., 2022). A study where participants could gamble with another person's bonus in a biased game, highlighted the selfish financial and high-risk behavior among individuals with psychopathy. They were seen to continue gambling at the expense of someone else even though they could be punished for it (Jones, 2014).

Defection and Co-operation in the Dark Triad

In cooperative games, DT is thought to defect more than cooperate. Lainidi et al. (2021) study showed that higher levels of DT traits significantly increased the chances of defection in a prisoner's dilemma game. Malesza (2020) found that psychopathy and Machiavellianism were

linked to higher rates of defection in an iterative prisoner's dilemma game. Specifically, psychopathy along with impulsivity was linked with multiple attempts of defecting behaviors. Machiavellianism was not associated with impulsivity but long-term planning and strategy which, together, predicted higher defection. Studies using economic games have consistently shown high Machiavellianism to be linked with strong defection tendencies (Gunnthorsdottir et al., 2002; Harrell & Hartnagel, 1976; Kurzban & Houser, 2001). High levels of Machiavellianism were related to defection when it was advantageous to them (Gunnthorsdottir et al., 2002). These results suggested that Machiavellians prioritized competition and obtaining gains over fairness even if it led to exploiting others.

Deutchmann and Sullivan (2018) found Machiavellianism predicted defection in a one-shot prisoner's dilemma. Furthermore, participants were more likely to defect in cases when the prisoner's dilemma game was framed as a non-social task and in terms of potential loss. Higher levels of narcissism were linked to generosity and a higher willingness to share (Lannin et al., 2014). Although narcissism is characterized by entitlement, grandiosity, and callous manipulation, their need for superiority and external validation drives them to be generous and please others (Raskin & Hall, 1981). Furthermore, vulnerable narcissism (characterized by need for recognition, low self-esteem, entitlement) showed a positive effect on defecting behaviors whereas grandiose narcissism (characterized by aggression, self-assurance, and a strong need for admiration from others) linked positively with cooperation (Malesza & Poland, 2020). However, this relationship between grandiose narcissism and cooperation was only seen in the initial rounds of the iterative prisoner's dilemma games and that grandiose narcissism had a positive effect on defection as the game progressed (Malesza & Poland, 2020). Specific sub-characteristics of psychopathy (i.e., Machiavellian egocentricity) is negatively associated with cooperation in a one-shot prisoner's dilemma, and social potency (characterized by self-perception of high-status and power) is linked

to lower cooperation in a bargaining game (Curry, Chesters, & Viding, 2011). Most research on DT traits in the context of defection and cooperation have not quantified the mechanisms underpinning these behaviors.

Based on the findings of past studies, the current two-part investigation aims to understand the appraisal and mechanisms of prosocial behavior in the DT.

Study 1

Given that DT is generally agentic, uses a “cheater” social strategy, and views others negatively, it is unclear whether and how they perceive those who are prosocial towards them. Reciprocity, a functional theory of prosociality, refers to interchange of mutual benefits. Specifically, direct reciprocity refers to subsequent exchange of benefits (i.e., X helps Y, and Y helps X back; Nowak & Sigmund, 2005). For direct reciprocity, however, it is essential that one realizes that one is being helped (i.e., Y will need to recognize the help, especially the cost accrued by X, in order to acknowledge and choose to help X back). Thus, this study aims to assess the experiences of individuals with dark personalities in the face of prosocial acts. In other words, we argue that those with high DT would be unable to perceive others’ help towards them. Manipulating vignettes to display behaviors in which others are either helpful or not helpful to them, participants assessed perceived helpfulness of others towards them. The study also assesses how the sub-traits of DT differently affect this relationship.

Thus, it was hypothesized that:

H1A: For situations involving low helpfulness, DT negatively predicts perceived helpfulness.

H1B: For situations involving high helpfulness, DT negatively predicts perceived helpfulness.

2. Method

The present study utilizes partial data from a preregistered study assessing the relationship

between DT and gratitude (Puthillam et al., 2021). The sample included 679 participants (279 Indians, 317 Americans, and 83 belonging to 40 other countries; women = 514) above the age of 18 years ($M_{Age} = 23.37$ years, $SD = 8.04$; $Range = 18-68$ years).

Measures

Short Dark Triad (Jones & Paulhus, 2014). Twenty-seven items were used to measure the DT traits. Of these, nine items each measure the three traits of Machiavellianism, narcissism, and psychopathy, on a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree).

Balanced Inventory of Desirable Responding Short Form (Hart et al., 2015). Sixteen items measure social desirability and its two dimensions: Self-Deceptive Enhancement (SDE) and Impression Management (IM), using a 7-point rating scale format (1 = not true to 7 = very true). SDE refers to over-reporting of positive behavior; IM refers to under-reporting of negative behavior. The DT is susceptible toward socially desirable responding, and therefore this measure is used as a statistical control.

Helpfulness Vignettes (Wood et al., 2008). Participants were randomly assigned to read either the set of three vignettes (see Appendix A) depicting situations where others were helpful or not helpful to them. After the vignette, participants responded to the following questions, which assessed their perception of the actors' help:

Genuine Helpfulness: "How much was this person motivated by a sincere desire to help you?" (1 = Not at all motivated; 6 = Totally motivated);

Perceived Cost: "How much did it cost the person to help you (in terms of time, effort, financial cost etc.)?" (1 = Nothing; 6 = A great deal);

Perceived Value: "How valuable do you think that this person's help was to you?" (1 = Not at all valuable; 6 = Extremely valuable).

Participants were presented with three vignettes where others were either not very helpful

(i.e., displayed low value, low genuine helpfulness, and low cost) or the set of three vignettes depicting help from others (i.e., high value, high genuine helpfulness, and high cost). Perception of helpfulness was calculated by summing the scores on genuine helpfulness, perceived cost, and perceived value across the three vignettes.

3. Results

Data were analyzed in R (RStudio team, 2021); the analysis code is available on OSF. Hierarchical regressions were conducted, controlling for age, gender, nationality, and social desirability. To test whether shared variances affect the relationship between each sub-trait and perception of helpfulness, the other two traits were controlled for. That is, to test whether psychopathy uniquely affects perception of help, Machiavellianism and narcissism were controlled. Descriptive statistics, reliabilities of the scales, and zero-order correlations are displayed in Table 1.

Less Helpful Situations

When others were less helpful (H1A), DT positively predicted perception of help ($b = .12$, $SE = .02$, $R^2 = .05$, $F(1, 446) = 20.381$, $p < .001$). Particularly, psychopathy ($b = .25$, $SE = .06$, $p < .001$; unique: $b = .17$, $SE = .07$, $p = .01$), Machiavellianism ($b = .20$, $SE = .05$, $R^2 = .04$, $p < .001$; unique: $b = .13$, $R^2 = .06$, $SE = .06$, $p = .03$), and narcissism ($b = .14$, $SE = .07$, $R^2 = .02$, $p = .04$) positively predicted perception of help. However, when Machiavellianism and psychopathy were accounted for, narcissism does not predict appraisal of help ($b = .03$, $SE = .07$, $R^2 = .06$, $p = .72$).

More Helpful Situations

When others were more helpful (H1B), those with high DT negatively predicted perception of help ($b = -.07$, $SE = .03$, $R^2 = .05$, $F(1, 221) = 4.35$, $p = .04$). Specifically, psychopathy ($b = -.27$, $SE = .07$, $R^2 = .09$, $p < .001$; unique: $b = -.32$, $SE = .08$, $R^2 = .10$, $p < .001$) alone predicted perception of help; Machiavellianism ($b = .02$, $SE = .07$, $p = .82$) and narcissism ($b = -.14$, $SE = .08$, $p = .11$) did not.

4. Discussion

Study 1 aimed to understand how those with high levels of DT appraise help provided by others in prosocial situations. We found that DT misperceived others as helpful when they were not. Specifically, psychopathy and Machiavellianism were linked to appraisal of others as helpful when they were not; however, narcissism, when the former two were accounted for, did not positively predict appraisal of help. When others were highly helpful, those with high levels of psychopathy appraised others as less helpful; the other two sub-traits thought them neither more nor less helpful. Thus, H1A was not supported, and H1B was partially supported.

Individuals with high levels of DT tend to view others negatively (Black et al., 2014) and view themselves as superior, including in cooperative tasks (Rauthmann, 2012). We hypothesized that they would not be able to accurately assess non-cooperation or cooperation by others. In a situation where others were not helpful, the DT appraised others as inaccurately more helpful. This implies that it is possible that those with high levels of DT assume that others may be obliged to help them, and are unable to grasp when they do not. This is in line with previous work indicating that those with high levels of DT use fewer cues to evaluate others, and that they are unable to distinguish vulnerable others from non-vulnerable others (Black et al., 2014). Thus, it is likely that DT individuals do not attend to enough cues in order to understand whether others are actually being helpful or not.

On the other hand, only those with higher levels of psychopathy were found to inaccurately assess others as less helpful in a highly helpful situation. This is in line with previous work indicating that psychopathy is linked with impulsivity and risk-taking, along with a callous-unemotionality (Hare & Neumann, 2008). Previous work has also indicated that those with high levels of psychopathy assess vulnerable others as higher in emotionality than they actually were (Book et al., 2021). Further, in a prisoner's dilemma game, they defected to low-value partners with

whom they did not envision a longer-term relationship (Gervais et al., 2013). Thus, it seems that those with high levels of psychopathy might impulsively assess others as easy to exploit, which might explain their inaccurately rating others as not helpful even when they are.

However, those with high levels of Machiavellianism tend to be less impulsive and more strategic in their exploitation of others. Similarly, narcissism is associated only with a grandiose sense of self, overvalue themselves and therefore, might be attuned to social cues. Thus, it is likely that those with high Machiavellianism and narcissism pay attention to cues of others' benefits to them (Jonason & Schmitt, 2012).

Therefore, the present study adds to the list of work that finds that the three traits are distinct, even if they share the commonality of darkness. Further, the pattern of results show that psychopathy seems to dominate the other two traits in the DT, especially as it relates to their perception of others. The present study also has implications in understanding the DT in the context of reciprocity (Nowak & Sigmund, 2005). Specifically, it seems that those with high levels of DT, and particularly psychopathy, are unable to accurately assess others' help. Without this assessment, it is difficult to argue whether or not they engage in reciprocity. That is, if one does not accurately assess another person as being helpful in the first place, it might be difficult to argue that they do not reciprocate the help. Future work assessing reciprocity in the DT using cooperative games should also assess whether and how they appraise the aid. For example, it might be that they assess others' help as an exploitable weakness.

This study suffers from the limitations of using vignettes. Self-reported behavioral intentions are likely to differ from actual behavior (e.g., Eifler & Petzold, 2019). Future work should attempt to replicate this using cooperative games to measure reciprocity and benefit appraisals. Next, the internal consistency of the narcissism sub-scale was not adequate. Future work could use alternate measures, including measures acknowledging the multidimensionality of DT (Miller et

al., 2019). Keeping in mind these limitations, Study 2 was conducted to further our understanding of DT behavior in prosocial situations.

Study 2

In Study 1, we found that the Dark Triad is poor at assessing help from others. This is particularly true for those with high levels of psychopathy, who perceive help from others as not helpful. Thus, Study 2 aims to replicate the previous findings using a one-shot ultimatum game instead of using vignettes and also explore a possible mechanism behind defection. That is, whether misperception of helpfulness in prosocial situations leads to defection among the Dark Triad.

It was hypothesized that:

H1: DT and each subcomponent (narcissism, Machiavellianism, and psychopathy) significantly predict perception of help in the high-help and the low-help conditions.

H2: DT and each subcomponent (narcissism, Machiavellianism, and psychopathy) significantly predict defection in the high-help and low-help conditions.

H3: Perception of help significantly mediates the relationship between DT (and each subcomponent) and defection in the high-help and low-help conditions.

5. Method

Participants

Participants were recruited online via a multi-site entry. The study link was posted on websites such as Psychological Research on the Net, social media platforms, as well as on various Facebook and WhatsApp groups. The study consisted of a total sample of 1059 participants after cleaning the data for missing values and those who did not meet the inclusion criteria (individuals

over the age of 18 years and those who did not pass both of the attention checks) of the study. Of this, data from 713 participants were collected by the students of [retracted for blind review] as a part of their coursework and the rest were collected by the authors. The average age of the sample was 23.06 years. Of the total participants, 702 were women, 315 were men, 17 identified as non-binary, and the others did not disclose their identity.

Measures

Short Dark Triad. A 27-item scale developed by Jones and Paulhus (2014) measuring Machiavellianism ($\alpha = 0.75$), psychopathy¹ ($\alpha = 0.67$), and narcissism ($\alpha = 0.70$) through nine items each, on a 5-point Likert scale (1= strongly disagree to 5= strongly agree). High cumulative scores on each subscale imply a high Machiavellianism, psychopathy, and narcissism personality traits, respectively.

Balanced Inventory of Desirable Responding Short Form. This 16-item inventory developed by Hart et al. (2015) measured two aspects of social desirability, self-deceptive enhancement (SDE, $\alpha = 0.72$) and impression management (IM, $\alpha = 0.67$), using a 7-point rating scale format (1 = not true to 7 = very true). Higher cumulative score implied higher social desirability. For the current study, the full scale was found to have a good reliability ($\alpha = 0.76$).

Ultimatum game (refer to Appendix B). The participants played a modified version of the one-shot ultimatum game. Specifically, participants were told that both they and Person X together won a lottery. Further, Person X was endowed with USD 1000 and was asked to share it with them. Knowing each other's financial state, Person X then either shared USD 200 (low help condition) or USD 800 (high help condition). This variable was manipulated between-participants.

¹ As a part of the data was collected in collaboration with [retracted for blind review], one item for psychopathy ("I enjoy having sex with people I hardly know") was replaced with an alternative item "I like to pick on losers," (item 26; initially proposed by the authors but later replaced) due to restrictions from their Institutional Review Board. Thus, this item was not included in the analysis and the 26-item scale was found to have a good reliability ($\alpha = 0.82$).

The participant could either accept (coded as 1) whatever they are given or decline (coded as 0) the offer. By declining the offer, neither party got any reward.

Perception of helpfulness. This 3-item scale developed by Wood et al. (2008) measured 'Genuine helpfulness', 'Perceived cost', and 'Perceived value', using a 6-point Likert scale. After the ultimatum game, the participants were asked to rate how helpful Person X was to them using this scale. A higher score indicated a higher perception of help. For the current study, the scale had good reliability ($\alpha = 0.83$).

Procedure

The experiment was conducted online using Qualtrics (2021). Participants filled out a few demographic details about themselves (the sexual orientation question was not included and a question on country of residence was added to the demographics for the data collected by [institution/country name retracted for blind review]), followed by the short dark triad questionnaire. Next, the participants played the one-shot ultimatum game where half of the participants were randomly assigned to the low help condition and the other half to the high help condition. After that, participants indicated whether they would accept the money proposed by Person X and then rate how helpful Person X was to them. Finally, participants' social desirability was assessed.

6. Results

Data were analyzed using the RStudio software version 1.4.1717 (RStudio team, 2021). Analysis was computed on a total sample of 1059 participants. Out of 523 participants in the low-help condition, 249 accepted a low-help offer and had a mean perception of help of 6.63 ($SD = 2.95$). Furthermore, of the 527 participants in the high-help condition, 92 participants rejected a high help offer and had a mean perception of help of 12.53 ($SD = 3.47$). For detailed descriptive

statistics and correlations, refer to Tables 2 and 3. Additionally, separate hierarchical regression analysis were computed to understand the impact of DT and its components on perception of help and defection while controlling for demographics (only those that were significant) along with social desirability.

Influence of DT on perception of help in a situation (H1)

For both the low-help ($b = 0.018$, $se = 0.011$, $t = 1.620$, $p = 0.106$) and the high-help ($b = -0.005$, $se = 0.012$, $t = -0.413$, $p = 0.679$) condition, DT did not significantly predict perception of help (refer to Figures S1 and S2 in supplementary material).

Subcomponents of DT and perception of help.

Individuals with a high score on psychopathy had a high perception of help in the low-help group (Table 4; refer to Figure S1 in supplementary material). Whereas Machiavellianism and narcissism did not significantly predict perception of help in the low-help condition. Additionally, it was also noted that psychopathy positively predicts perception of help even when controlling for other sub-components of DT (refer to Table S1 in supplementary material). On the other hand, among the high-help group none of the components predicted perception of help (Table 5; refer to Table S2 and Figure S2 in supplementary material).

Influence of DT on defection during a situation (H2)

Among the low-help group, neither DT as a whole ($b = -0.010$, $se = 0.007$, $z = -1.413$, $p = 0.158$) nor its components predicted acceptance or rejection of an offer (Table 6; refer to Table S3 and Figure S3 in supplementary material).

For the high-help condition, DT did not predict acceptance or rejection of an offer ($b = 0.017$, $se = 0.01$, $z = 1.78$, $p = 0.075$). Among the sub-components of DT, narcissism positively predicted acceptance or rejection of a high-help offer individually and even while controlling for

the other two sub-components (Table 7; refer to Table S4 and Figure S4 in supplementary material).

Relationship between DT, perception of help, and defection (H3)

Additionally, mediation analysis using the lavaan package in R (Rosseel, 2012) was computed to evaluate the mediating role of perception of help in the relationship between DT and defection. The total effect ($b = -0.007$, $z = -1.26$, $p = 0.208$) and the indirect effect ($b = 0.003$, $z = 1.391$, $p = 0.164$) were not significant for the low-help condition suggesting no mediation. For the high-help condition, the total effect ($b = 0.013$, $z = 2.18$, $p = 0.029$) was significant but the indirect effect ($b = -0.001$, $z = -0.322$, $p = 0.748$) was not significant also suggesting no mediation.

7. Discussion

Our findings unearth interesting insights into the role of DT traits in the perception of help and defection. DT as a whole did not predict the perception of help in both conditions; however, our findings show a rather curious role of psychopathy when singled out—it predicted the perception of help in the low help condition. Interestingly enough, only narcissism was linked to the likelihood of accepting a high help offer.

Psychopathy is associated with callousness, impulsivity, irresponsibility, and anti-social behaviors among many others (Hare, 1985; Hare & Neumann, 2008; Williams et al., 2003). Moreover, psychopathy is also associated with affective dysfunction; specifically dysfunction of the amygdala (Blair, 2006). Our findings demonstrate how those with high psychopathy are more likely to have a high perception of help in the low help condition. We can speculate that dysfunctional affective processing may contribute to the diminished sensitivity of the individuals to understand that the help they are receiving is, in fact, inequitable. This finding relates to that of Osumi and Ohira (2010) where psychopathy was found to relate to the higher likelihood of

accepting unfair offers. The authors contest that the affective impairment of psychopathy, albeit maladaptive, can contribute to adaptive outcomes in society (Osumi & Ohira, 2010). Moreover, this finding can also be viewed in the light of the previously stated explanation in Study 1 where the possibility of those with high levels of DT using fewer cues in the evaluation of others (Black et al., 2014) was considered, which contributes to their inability to understand when they have not been helped.

With respect to narcissism, the trait has been notorious for assuming qualities of self-entitlement, selfishness and manipulateness, having an inflated sense of self, and an excessive need for admiration and the propensity towards exploiting social relationships (Emmons, 1987; Raskin & Hall, 1981). Studies have accounted for lower levels of empathy and perspective-taking in the sense of entitlement in narcissists (Hepper et al., 2014). Our findings show that high narcissism predicted a greater likelihood of acceptance of a high help offer, which could be understood through their high sense of self-entitlement. It is likely that those with high narcissism perceive that others are obliged to help them and with that high an offer and the agentic position to accept or reject that offer, a bedrock of validation and importance is provided to these individuals which is precisely what they thrive on and feel important. And as this trait's association with entitlement is evidenced across literature (Raskin & Terry, 1988; Exline et al., 2004), it can be speculated that it is this that drives their acceptance of the offer in the high help condition because their gains matter most.

Empathy and moral reasoning have been closely associated with prosocial behavior (Carlo et al., 1996; Eisenberg et al., 1995). Moreover, influence from one's surroundings including those from peers, parents, and school also predict one's helping intention and prosociality (Lai et al., 2015). Thus, it is possible that DT traits failed to predict perception of help and the acceptance or rejection of an offer in certain conditions because in order to perceive that one has been helped, a

level of empathy and moral reasoning could be necessary. Additionally, since DT traits are known for their coldhearted and callous nature with low levels of empathy (Paulus & Williams, 2002; Jones & Paulus, 2010) these traits did not contribute to influencing perception of helpfulness. It is likely that other factors, such as those listed by Lai et al. (2015) play a greater role in influencing prosocial behavior and perception of prosociality than the DT traits. Furthermore, a study by Rauthmann (2012) found that narcissists saw other people as less conscientious whereas Machiavellians saw other individuals as low in nurturance, gregariousness, global intelligence, openness, and interpersonal skills. This negative view of others by the DT might have impacted the findings of the study.

There are certain limitations to the present study. First, the use of the one-shot ultimatum game may not be an entirely adequate method of understanding the influence of DT traits on acceptance or defection. In the one-shot ultimatum game, a responder does not get further chances to play or interact with the proposer. Hence, to understand how DT traits influence acceptance or rejection of offers and the emotional, affective, or cognitive reasons that drive this behavior, an iterated ultimatum game is needed to see how responders react over time. Moreover, our study does not explore these underlying emotional and cognitive factors that lead those high on DT traits to indulge in acceptance and defection behaviors along and the role of perception of help. Future studies could consider tapping into these aspects in an attempt to not only contribute to the vast literature dedicated to this domain of research but also could contribute to exploring effective intervention strategies that look to improve behaviors and interpersonal relations in people high on DT traits. For instance, recent research has shown that individual's levels on the three DT traits were reduced with the help of interventions targeting agreeableness (Hudson, 2022). Understanding the underlying emotional and cognitive mechanisms that are at play can help devise targeted training and interventions in an attempt to enhance prosocial behavior and

interpersonal relations. The present study did not assess the gendered impact of DT on perception of help and defection however, this can be examined in future studies by having an equal representation of gender. Finally, the study made use of self-report measures to assess DT as well as perception of help. Future work could also use peer-report to replicate and extend these findings.

8. Conclusion

The aim of this study was to investigate the relationship between the DT and perception of help and a possible linkage to defection while playing a one-shot ultimatum game. Specifically, previous studies have indicated that those with higher levels of the dark triad are likely to defect in cooperative situations, are unlikely to be prosocial, and do not express gratitude. This study attempted to understand the underlying mechanisms behind prosociality (or lack thereof) among those with higher levels of the dark triad traits. Study 1 revealed that psychopathy and Machiavellianism were linked to appraisal of others as helpful when they were actually not. Further, when others were highly helpful, those with high levels of psychopathy appraised others as less helpful. Study 2 partially replicated Study 1 and showed that individuals with psychopathy traits were indeed unable to recognize when others' were not helpful towards them in the low-help condition. Additionally, those having higher levels of narcissistic traits showed a greater likelihood of accepting a high help offer. However, misperception of help did not mediate the relationship between dark triad and defection while playing a one-shot ultimatum game.

This study provides insight into the behavior of individuals with higher levels of DT traits in prosocial situations. Furthermore, the study also highlights how the dark traits misperceive when others have been helpful towards them and when they have not.

References

- Aghababaei, N., Mohammadtabar, S., & Saffarinia, M. (2014). Dirty Dozen vs. The H factor: Comparison of the Dark Triad and Honesty–Humility in prosociality, religiosity, and happiness. *Personality and Individual Differences*, *67*, 6–10.
<https://doi.org/10.1016/j.paid.2014.03.026>
- Batson, C.D. (2011). *Altruism in humans*. Oxford University Press.
- Black, P.J., Woodworth, M., & Porter, S. (2014). The Big Bad Wolf? the relation between the Dark Triad and the interpersonal assessment of vulnerability. *Personality and Individual Differences*, *67*, 52-56. <https://doi.org/10.1016/j.paid.2013.10.026>
- Blair, R. J. R. (2006). Subcortical Brain Systems in Psychopathy: The Amygdala and Associated Structures. *Handbook of psychopathy* (pp. 296–312). The Guilford Press.
- Book, A.S., Visser, B.A., Worth, N., & Ritchie, M. (2021). Psychopathy and assumptions about vulnerability to exploitation. *Personality and Individual Differences*, *168*.
<https://doi.org/10.1016/j.paid.2020.110372>
- Carlo, G., Koller, S. H., Eisenberg, N., Da Silva, M. S., & Frohlich, C. B. (1996). A cross-national study on the relations among prosocial moral reasoning, gender role orientations, and prosocial behaviors. *Developmental Psychology*, *32*(2), 231. <https://doi.org/10.1037/0012-1649.32.2.231>
- Curry, O., Chesters, M. J., & Viding, E. (2011). The psychopath’s dilemma: The effects of psychopathic personality traits in one-shot games. *Personality and Individual Differences*, *50*(6), 804-809. <https://doi.org/10.1016/j.paid.2010.12.036>
- Deutchman, P., & Sullivan, J. (2018). The dark triad and framing effects predict selfish behavior in a one-shot prisoner’s dilemma. *PloS one*, *13*(9), e0203891.
<https://doi.org/10.1371/journal.pone.0203891>

- Eifler, S., & Petzold, K. (2019). Validity aspects of vignette experiments: Expected “What-If” differences between reports of behavioral intentions and actual behavior. *Experimental Methods in Survey Research: Techniques that Combine Random Sampling with Random Assignment*. <https://doi.org/10.1002/9781119083771.ch20>
- Eisenberg, N., Carlo, G., Murphy, B., & van Court, P. (1995). Prosocial Development in Late Adolescence: A Longitudinal Study. *Child Development*, 66(4), 1179. <https://doi.org/10.2307/1131806>
- Emmons, R. A. (1987). Narcissism: theory and measurement. *Journal of personality and social psychology*, 52(1), 11.
- Exline, J. J., Baumeister, R. F., Bushman, B. J., Campbell, W. K., & Finkel, E. J. (2004). Too proud to let go: narcissistic entitlement as a barrier to forgiveness. *Journal of personality and social psychology*, 87(6), 894.
- Gervais, M.M., Kline, M., Ludmer, M., George, R., & Manson, J. (2013). The strategy of psychopathy: primary psychopathic traits predict defection on low-value relationships. *Proceedings of the Royal Society B: Biological Sciences*, 280. <https://doi.org/10.1098/rspb.2012.2773>
- Gunthorsdottir, A., McCabe, K., & Smith, V. (2002). Using the Machiavellianism instrument to predict trustworthiness in a bargaining game. *Journal of Economic Psychology*, 23(1), 49-66. [https://doi.org/10.1016/S0167-4870\(01\)00067-8](https://doi.org/10.1016/S0167-4870(01)00067-8)
- Hare, R. D. (1985). Comparison of procedures for the assessment of psychopathy. *Journal of Consulting and Clinical Psychology*, 53(1), 7-16. <https://doi.org/10.1037/0022-006x.53.1.7>
- Hare, R. D., & Neumann, C. S. (2008). Psychopathy as a Clinical and Empirical Construct. *Annual Review of Clinical Psychology*, 4(1), 217-246. <https://doi.org/10.1146/annurev.clinpsy.3.022806.091452>

- Hart, C. M., Ritchie, T. D., Hepper, E. G., & Gebauer, J. E. (2015). The Balanced Inventory of Desirable Responding Short Form (BIDR-16). *SAGE Open*, 5(4).
<https://doi.org/10.1177/2158244015621113>
- Harrell, W. A., & Hartnagel, T. (1976). *The impact of Machiavellianism and the trustfulness of the victim on laboratory theft. Sociometry*, 39(2), 157–165. <https://doi.org/10.2307/2786216>
- Hepper, E. G., Hart, C. M., Meek, R., Cisek, S., & Sedikides, C. (2014). Narcissism and Empathy in Young Offenders and Non-Offenders. *European Journal of Personality*, 28(2), 201–210.
<https://doi.org/10.1002/per.1939>
- Hudson, N.W. (2022). Lighten the darkness: Personality interventions targeting agreeableness also reduce participants' levels of the dark triad. *Journal of Personality*.
<https://doi.org/10.1111/jopy.12714>
- Jonason, P.K., Koenig, B.L., & Tost, J. (2010). Living a fast life. *Human Nature*, 21, 428–442.
<https://doi.org/10.1007/s12110-010-9102-4>
- Jonason, P.K., & Schmitt, D.P. (2012). What have you done for me lately? Friendship-selection in the shadow of the dark triad traits. *Evolutionary Psychology*, 10(3).
<https://doi.org/10.1177/147470491201000303>
- Jonason, P. K., & Krause, L. (2013). The emotional deficits associated with the Dark Triad traits: Cognitive empathy, affective empathy, and alexithymia. *Personality and Individual Differences*, 55(5), 532–537. <https://doi.org/10.1016/j.paid.2013.04.027>
- Jones, D. N., & Paulhus, D. L. (2014). Introducing the Short Dark Triad (SD3): A brief measure of dark personality traits. *Assessment*, 21(1), 28–41. <https://doi.org/10.1177/1073191113514105>
- Jones, D. N., & Paulhus, D. L. (2010). Differentiating the Dark Triad Within the Interpersonal Circumplex. *Handbook of Interpersonal Psychology*, 249–267.
<https://doi.org/10.1002/9781118001868.ch15>

- Jones, D.N. (2014). Risk in the face of retribution: Psychopathic individuals persist in financial misbehavior among the Dark Triad. *Personality and Individual Differences*, 67, 109–113. <https://doi.org/10.1016/j.paid.2014.01.030>
- Jonason, P.K., Strosser, G.L., Kroll, C.H., Duineveld, J.J., Baruffi, S.A. (2015). Valuing myself over others: The Dark Triad traits and moral and social values. *Personality and Individual Differences*, 81, 102-106. <http://dx.doi.org/10.1016/j.paid.2014.10.045>
- Kaplan, H. S., Hooper, P. L., & Gurven, M. (2009). The Evolutionary and Ecological Roots of Human Social Organization. *Philosophical Transactions: Biological Sciences*, 364(1533), 3289–3299. <https://doi.org/10/c9tqxw>
- Kauten, R.L., & Barry, C.T. (2016). Adolescent narcissism and its association with different indices of prosocial behavior. *Journal of Research in Personality*, 60, 36-45. <https://doi.org/10.1016/j.jrp.2015.11.004>
- Kurzban, R., & Houser, D. (2001). Individual differences in cooperation in a circular public goods game. *European Journal of Personality*, 15(S1), S37-S52. <https://doi.org/10.1002/per.420>
- Lai, F. H. Y., Siu, A. M. H., & Shek, D. T. L. (2015). Individual and Social Predictors of Prosocial Behavior among Chinese Adolescents in Hong Kong. *Frontiers in Pediatrics*, 3. <https://doi.org/10.3389/fped.2015.00039>
- Lainidi, O., Karakasidou, E., & Montgomery, A. (2021). *Dark Triad, Impulsivity and Honesty-Humility and intended behavior in a prisoner's dilemma game: A simulation study*. Research Square. <https://doi.org/10.21203/rs.3.rs-787616/v1>
- Lannin, D. G., Gyll, M., Krizan, Z., Madon, S., & Cornish, M. (2014). When are grandiose and vulnerable narcissists least helpful? *Personality and Individual Differences*, 56, 127–132. <https://doi.org/10.1016/j.paid.2013.08.035>
- Malesza, M. (2020). The effects of the Dark Triad traits in prisoner's dilemma game. *Current*

Psychology, 39, 1055–1062. <https://doi.org/10.1007/s12144-018-9823-9>

Malesza, M., & Poland, W. (2020). Grandiose narcissism and vulnerable narcissism in prisoner's dilemma game. *Personality and Individual Differences*, 158.

<https://doi.org/10.1016/j.paid.2020.109841>

Miller, J. D., Vize, C., Crowe, M. L., & Lynam, D. R. (2019). A critical appraisal of the Dark-Triad literature and suggestions for moving forward. *Current Directions in Psychological Science*, 28(4), 353–360. <https://doi.org/10.1177/0963721419838233>

Nowak, M., Sigmund, K. (2005). Evolution of indirect reciprocity. *Nature*, 437, 1291–1298.

<https://doi.org/10.1038/nature04131>

Osumi, T., & Ohira, H. (2010). The positive side of psychopathy: Emotional detachment in psychopathy and rational decision-making in the ultimatum game. *Personality and Individual Differences*, 49(5), 451–456. <https://doi.org/10.1016/j.paid.2010.04.016>

Palmer, J.A., Tackett, S. (2018). An examination of the dark triad constructs with regard to prosocial behavior. *Acta Psychopathologica*, 4(1). doi: 10.4172/2469-6676.100161

Paulhus, D.I., & Williams, K.M. (2002). The Dark Triad of personality: Narcissism, Machiavellianism, and psychopathy. *Journal of Research in Personality*, 36(6), 556-563.

[https://doi.org/10.1016/S0092-6566\(02\)00505-6](https://doi.org/10.1016/S0092-6566(02)00505-6)

Puthillam, A., Karandikar, S., Kapoor, H., & Parekh, A. (2021). Gratitude blindness: How does the Dark Triad experience gratitude? *Personality and Individual Differences*, 168.

<https://doi.org/10.1016/j.paid.2020.110309>

Raskin, R., & Hall, C. S. (1981). The Narcissistic Personality Inventory: Alternate form reliability and further evidence of construct validity. *Journal of Personality Assessment*, 45(2), 159–162. https://doi.org/10.1207/s15327752jpa4502_10

Raskin, R., & Terry, H. (1988). A principal-components analysis of the Narcissistic Personality

- Inventory and further evidence of its construct validity. *Journal of personality and social psychology*, 54(5), 890.
- Rauthmann, J. F. (2012). The Dark Triad and interpersonal perception: Similarities and differences in the social consequences of narcissism, Machiavellianism, and psychopathy. *Social Psychological and Personality Science*, 3(4), 487–496.
<https://doi.org/10.1177/1948550611427608>
- Rosseel, Y. (2012). “lavaan: An R Package for Structural Equation Modeling.” *Journal of Statistical Software*, 48(2), 1–36. <https://doi.org/10.18637/jss.v048.i02>
- RStudio Team. (2021). RStudio: Integrated Development Environment for R. RStudio, PBC, Boston, MA URL <http://www.rstudio.com/>.
- Trahair, C., MacDonald, K. B., Furnham, A., & Schermer, J. A. (2022). Altruism and the Dark Triad. *Current Issues in Personality Psychology*. <https://doi.org/10.5114/cipp.2022.113436>
- Wertag, A., & Bratko, D. (2019). In search of the prosocial personality: Personality traits as predictors of prosociality and prosocial behavior. *Journal of Individual Differences*, 40(1), 55–62. <https://doi.org/10.1027/1614-0001/a000276>
- Williams, K. M., Nathanson, C., & Paulhus, D. L. (2003, August). Structure and validity of the self-report psychopathy scale-III in normal populations. In the 111th annual convention of the American Psychological Association (pp. 1-12).
- Wood, A. M., Maltby, J., Stewart, N., Linley, P. A., & Joseph, S. (2008). A social-cognitive model of trait and state levels of gratitude. *Emotion*, 8(2), 281–290. <https://doi.org/10.1037/1528-3542.8.2.281>
- Zuo, S., Wang, F., Xu, Y., Wang, F., & Zhao, X. (2016). The fragile but bright facet in the Dark Gem: Narcissism positively predicts personal morality when individual’s self-esteem is at low level. *Personality and Individual Differences*, 97, 272–276.

<https://doi.org/10.1016/j.paid.2016.03.076>

Table 1

Descriptive statistics, reliabilities, and zero-order correlations of relevant variables

	<i>M</i>	<i>SD</i>	<i>Cronbach's α</i>	1	2	3	4	5	6	7	8
1. Age	23.37	8.04									
2. Machiavellianism	26.35	6.25	0.76	-0.21 ^{***}							
3. Narcissism	25.09	4.62	0.50	-0.1 ^{**}	0.3 ^{***}						
4. Psychopathy	18.39	5.42	0.71	-0.18 ^{***}	0.53 ^{***}	0.3 ^{***}					
5. Composite Dark Triad	69.84	12.57	0.81	-0.22 ^{***}	0.84 ^{***}	0.65 ^{***}	0.81 ^{***}				
6. Perception of help	36.36	10.1	0.89	0.01	0.05	-0.07	0.03	0.02			
7. Self-Deceptive Enhancement	30.44	7.48	0.67	0.16 ^{***}	-0.06	0.19 ^{***}	-0.05	0.02	-0.11 ^{**}		
8. Impression Management	34.1	8.16	0.69	0.21 ^{***}	-0.42 ^{***}	-0.08 [*]	-0.41 ^{***}	-0.41 ^{***}	-0.01	0.37 ^{***}	
9. Composite Social Desirability	64.53	12.94	0.75	0.22 ^{***}	-0.3 ^{***}	0.06	-0.29 ^{***}	-0.25 ^{***}	-0.07	0.81 ^{***}	0.84 ^{***}

Note. *** $p < .001$, ** $p < .01$, * $p < .05$

Table 2

Sample descriptives and correlation for low-help group

Variable	M	SD	1	2	3	4	5	6	7	8	9	10
1. Age	23.06	8.32										
2. Gender	1.76	0.61	-.15**									
3. Occupation	1.53	1.18	.37**	-0.00								
4. SES	6.97	1.78	-.04	-0.06	-.13**							
5. Machiavellianism	27.69	5.64	-.07*	-.06*	-.05	.05						
6. Narcissism	25.8	5.26	0.00	-.09**	.01	.14**	.31**					
7. Psychopathy	18.34	4.67	-.02	-.08**	.03	.05	.54**	.30**				
8. Short dark triad	71.82	11.96	-.04	-.10**	-.03	.11**	.82**	.70**	.78**			

9. Defection- low help	0.48	0.5	-.06	-.01	0.00	-.01	-.07	-.02	-.04	-.06		
10. Perception of help- low help	6.63	2.95	.07	-.11*	-.03	.06	.07	0.00	.12**	.08	.33**	
11. Social desirability	65.93	12.89	.26**	-.13**	.10**	.10**	-.24**	.22**	-.28**	-.12**	-.04	.01

Note. * p < .05. ** p < .01.

Table 3

Sample descriptives and correlation for high-help group

Variable	M	SD	1	2	3	4	5	6	7	8	9	10
1. Age	23.06	8.32										
2. Gender	1.76	0.61	-.15**									
3. Occupation	1.53	1.18	.37**	-.00								
4. SES	6.97	1.78	-.04	-.06	-.13**							
5. Machiavellianism	27.69	5.64	-.07*	-.06*	-.05	.05						

6. Narcissism	25.8	5.26	0.00	-.09**	.01	.14**	.31**					
7. Psychopathy	18.34	4.67	-.02	-.08**	-.03	.05	.54**	.30**				
8. Short dark triad	71.82	11.96	-.04	-.10**	-.03	.11**	.82**	.70**	.78**			
9. Defection- high help	0.83	0.38	-.12**	-.05	-.09*	.03	.08	.08	.07	.10*		
10. Perception of help- high help	12.53	3.47	-.01	.03	-.04	.04	-.03	.02	-.03	-.02	.30**	
11. Social desirability	65.93	12.89	.26**	-.13**	.10**	.10**	-.24**	.22**	-.28**	-.12**	-.12**	-.03

Note. * p < .05. ** p < .01.

Table 4

Hierarchical regression between dark triad sub-components and perception of help (Low-help group)

Variable	Step 1		Step 2a		Step 2b		Step 2c	
	b	SE	b	SE	b	SE	b	SE
Social desirability	0.001	0.01	0.004	0.01				
Gender	-0.503*	0.198	-0.470*	0.199				
Machiavellianism			0.032	0.023				
Narcissism					-0.003	0.025		
Psychopathy							0.081**	0.029
R ²	0.012		0.016		0.012		0.027	
F	3.292*		2.838*		2.197		4.783**	
ΔR^2			0.004		3.62E-05		0.014	

Note. * $p < .05$. ** $p < .01$.

Table 5

Hierarchical regression between dark triad sub-components and perception of help (high-help group)

Variable	Step 1		Step 2a		Step 2b		Step 2c	
	b	SE	b	SE	b	SE	b	SE
Social desirability	-0.006	0.011	-0.008	0.012	-0.008	0.012	-0.009	0.012
Machiavellianism			-0.020	0.027				
Narcissism					0.02	0.029		
Psychopathy							-0.031	0.032
R ²	0.0006		0.0017		0.0015		0.0024	
F	0.338		0.4537		0.407		0.63	
Δ R ²			0.0011		0.0009		0.00176	

Table 6

Hierarchical regression between dark triad sub-components and defection (Low-help group)

Variable	Step 1		Step 2a		Step 2b		Step 2c	
	b	SE	b	SE	b	SE	b	SE
Social desirability	-0.006	0.006	-0.009	0.007	-0.005	0.006	-0.008	0.007
Machiavellianism			-0.029	0.016				
Narcissism					-0.005	0.017		
Psychopathy							-0.023	0.02
AIC	724.45		723.19		726.35		725.09	
Deviance			3.254		0.099		1.358	

Table 7

Hierarchical regression between dark triad sub-components and defection (high-help group)

Variable	Step 1		Step 2a		Step 2b		Step 2c	
	b	SE	b	SE	b	SE	b	SE
Social desirability	-0.0198*	0.009	-0.018	0.009	-0.026**	0.01	-0.017	0.009
Age	-0.0157	0.013	-0.015	0.013	-0.012	0.013	-0.016	0.013
Occupation	-0.1224	0.095	-0.117	0.095	-0.112	0.096	-0.121	0.095
Machiavellianism			0.019	0.021				
Narcissism					0.055*	0.023		
Psychopathy							0.024	0.025
AIC		479.69		480.83		476.07		480.77
Deviance				0.856		5.613*		0.914

Note. * p < .05. ** p < .01.

Appendix A

Helpfulness vignettes

Low help

1. You are living alone and you receive an unexpectedly high electricity bill. You can afford to pay the bill with the money in your bank account without much of a problem. You receive a visit from your aunt, and tell her about your situation. She later phones you and offers to pay the bill. She does not really care about helping you, but rather wants to raise your family's opinion of her, and will no doubt remind them of it for some time to come. Your aunt is very rich and the cost of the bill will seem like a very small amount of money to her.
2. You have missed your college/university classes for a month due to an illness. The classes you missed were introductory classes and so were not very important or difficult. You need to get your hands on the materials discussed in those classes. A girl who had sat next to you, someone you don't know so well, heard that you were looking for class notes and decided to photocopy them for you because she knew you would be able to help her complete her assignments in return. The effort, time, and money needed to be put in was negligible for the girl.
3. You have recently quit your previous job and are applying to a new one. The company to which you are applying is a start-up, and hence is much smaller, and the salary is not much higher. You need a letter of recommendation from your previous employer. Your ex-supervisor agreed to write a recommendation for you on the understanding that you would refer him when a position opens up in your new company. Writing a recommendation letter is common practice, and your ex-supervisor did not go through much trouble to do so.

High help

1. You are living alone and you receive an unexpectedly high electricity bill. You do not have the money to pay the bill and will get into a lot of trouble when the company contacts a debt collection agency. You receive a visit from your aunt, and tell her about your situation. She later phones you and offers to pay the bill. Your aunt is a generous woman and she genuinely wants to help you. Your aunt relies on her state pension and paying the bill will represent a considerable amount of money to her.
2. You have missed your college/university classes for a month due to an illness. The classes were essential to your degree and were in difficult subjects. You need to get your hands on the materials discussed in those classes. A girl who had sat next to you, someone you don't know so well, heard that you were looking for class notes and decided to photocopy them for you out of kindness. The effort, time, and money that the girl put into photocopying all the notes for you was substantial and took away from her own study time.
3. You have recently quit your previous job and are applying to a new one. The company to which you are applying is much bigger and the salary is much higher. You need a letter of recommendation from your previous employer. You did not leave the previous company on the best terms with the upper management but your immediate supervisor agreed to write you a recommendation letter in order to help you get the job. Your ex-supervisor had to write the letter without the upper management knowing, and if they were to find out he would be in a lot of trouble.

Appendix B

Ultimatum game

You have just been laid off at your job. Because of your financial need, you ended up buying a lottery ticket. Due to an unfortunate error on the organizer's part, somebody else (X) also had the same winning ticket. From your conversations in an online lottery forum, they know that you have some financial difficulties. You also know that they are independently wealthy. You both won the lottery, but now have to split the money of USD 1000 (approximately INR 74,600, for conversion to a different currency [click here](#)) among yourselves before the organizers find out. If they find out that two people have won the lottery, they will declare the result as void and neither of you will get any prize money.

You and X jointly decided that X would collect the prize money.

Low help condition

When you meet X, they decide to give you only USD 200 (approximately INR 15,000) and keep USD 800 (approximately INR 59,700) for themselves. If you accept the offer, you get USD 200 (approximately INR 15,000); if you reject the offer, you can inform the organizers about the ticketing error and ensure that both of you do not get any prize money.

High help condition

When you meet X, they decide to give you USD 800 (approximately INR 59,700) and keep USD 200 (approximately INR 15,000) for themselves. If you accept the offer, you get USD 800 (approximately INR 59,700); if you reject the offer, you can inform the organizers about the ticketing error and ensure that both of you do not get any prize money.

Do you accept the money? Yes = 1; No = 0

Supplementary material

Table S1

Hierarchical regression between dark triad sub-components (while controlling for two sub-components) and perception of help (Low-help group)

Step 1						Step 2		
	b	SE		b	SE		b	SE
Social desirability	0.001	0.01	Social desirability	0.001	0.01	Social desirability	0.001	0.01
Gender	-0.503*	0.198	Gender	-0.503*	0.198	Gender	-0.503*	0.198
R ²	0.012		R ²	0.012		R ²	0.012	
F	3.292*		F	3.292*		F	3.292*	
Step 2						Step 3		
	b	SE		b	SE		b	SE
Social desirability	0.006	0.01	Social desirability	0.009	0.01	Social desirability	0.013	0.011
Gender	-0.468*	0.199	Gender	-0.457*	0.198	Gender	-0.455*	0.197
Machiavellianism	0.039	0.025	Machiavellianism	-0.001	0.027	Narcissism	-0.036	0.027

Narcissism	-0.018	0.027	Psychopathy	0.082*	0.034	Psychopathy	0.098**	0.032
R ²	0.017		R ²	0.027		R ²	0.03	
F	2.24		F	3.58**		F	4.032**	

<i>Step 3</i>	b	SE		b	SE		b	SE
Social desirability	0.014	0.011	Social desirability	0.014	0.011	Social desirability	0.014	0.011
Gender	-0.451*	0.198	Gender	-0.451*	0.198	Gender	-0.451*	0.198
Machiavellianism	0.006	0.028	Machiavellianism	0.006	0.028	Narcissism	-0.037	0.028
Narcissism	-0.037	0.028	Psychopathy	0.094**	0.035	Psychopathy	0.094**	0.035
Psychopathy	0.094**	0.035	Narcissism	-0.037	0.028	Machiavellianism	0.006	0.028
R ²	0.03		R ²	0.03		R ²	0.03	
F	3.232**		F	3.232**		F	3.232**	
Δ R ²	0.0008		Δ R ²	-9.00E-03		Δ R ²	-0.012	

Note. * indicates p < .05. ** indicates p < .01.

Table S2

Hierarchical regression between dark triad sub-components (while controlling for two sub-components) and perception of help (high-help group)

<i>Step 1</i>						<i>Step 2</i>		
	b	SE		b	SE		b	SE
Social desirability	-0.006	0.011	Social desirability	-0.006	0.011	Social desirability	-0.006	0.011
R ²	0.0006		R ²	0.0006		R ²	0.0006	
F	0.338		F	0.338		F	0.338	
Social desirability	-0.014	0.012	Social desirability	-0.01	0.012	Social desirability	-0.015	0.012
Machiavellianism	-0.034	0.03	Machiavellianism	-0.009	0.031	Narcissism	0.035	0.031
Narcissism	0.034	0.031	Psychopathy	-0.025	0.037	Psychopathy	-0.046	0.035
R ²	0.004		R ²	0.002		R ²	0.004	
F	0.7008		F	0.452		F	0.854	

<i>Step 3</i>	b	SE		b	SE		b	SE
Social desirability	-0.016	0.013	Social desirability	-0.016	0.013	Social desirability	-0.016	0.013
Machiavellianism	-0.021	0.032	Machiavellianism	-0.021	0.032	Narcissism	0.041	0.032
Narcissism	0.041	0.032	Psychopathy	-0.036	0.038	Psychopathy	-0.036	0.038
Psychopathy	-0.036	0.038	Narcissism	0.041	0.032	Machiavellianism	-0.021	0.032
R ²	0.005		R ²	0.005		R ²	0.005	
F	0.744		F	0.744		F	0.744	
Δ R ²	0.001		Δ R ²	0.002		Δ R ²	0.0001	

Table S3

Hierarchical regression between dark triad sub-components (while controlling for two sub-components) and defection (low-help group)

<i>Step 1</i>	b	SE		b	SE		b	SE
Social desirability	-0.006	0.006	Social desirability	-0.006	0.006	Social desirability	-0.006	0.006
AIC	724.45		AIC	724.45		AIC	724.45	
<i>Step 2</i>	b	SE		b	SE		b	SE
Social desirability	-0.009	0.007	Social desirability	-0.009	0.007	Social desirability	-0.008	0.007
Machiavellianism	-0.031	0.017	Machiavellianism	-0.026	0.018	Narcissism	0.002	0.018
Narcissism	0.006	0.018	Psychopathy	-0.006	0.023	Psychopathy	-0.024	0.022
AIC	725.07		AIC	725.12		AIC	727.06	
<i>Step 3</i>	b	SE		b	SE		b	SE
Social desirability	-0.01	0.007	Social desirability	-0.01	0.007	Social desirability	-0.01	0.007

Machiavellianism	-0.028	0.019	Machiavellianism	-0.028	0.019	Narcissism	0.008	0.019
Narcissism	0.008	0.019	Psychopathy	-0.009	0.024	Psychopathy	-0.009	0.024
Psychopathy	-0.009	0.024	Narcissism	0.008	0.019	Machiavellianism	-0.028	0.019
AIC	726.92		AIC	726.92		AIC	726.92	

Table S4

Hierarchical regression between dark triad sub-components (while controlling for two sub-components) and defection (high-help group)

<i>Step 1</i>	b	SE		b	SE		b	SE
Social desirability	-0.0198*	0.009	Social desirability	-0.0198*	0.009	Social desirability	-0.0198*	0.009
Age	-0.016	0.013	Age	-0.016	0.013	Age	-0.016	0.013
Occupation	-0.122	0.095	Occupation	-0.122	0.095	Occupation	-0.122	0.095
AIC	479.69		AIC	479.69		AIC	479.69	
<i>Step 2</i>	b	SE		b	SE		b	SE

<hr/>			<hr/>			<hr/>		
<i>Step 3</i>	b	SE		b	SE		b	SE
Social desirability	-0.026**	0.01	Social desirability	-0.017	0.01	Social desirability	-0.026*	0.01
Age	-0.012	0.013	Age	-0.016	0.013	Age	-0.012	0.013
Occupation	-0.112	0.096	Occupation	-0.118	0.095	Occupation	-0.112	0.096
Machiavellianism	-0.0002	0.023	Machiavellianism	0.012	0.024	Narcissism	0.054*	0.025
Narcissism	0.055*	0.025	Psychopathy	0.017	0.029	Psychopathy	0.001	0.027
AIC	478.07		AIC	482.51		AIC	478.07	
<hr/>								
Social desirability	-0.026*	0.011	Social desirability	-0.026*	0.011	Social desirability	-0.026*	0.011
Age	-0.012	0.013	Age	-0.012	0.013	Age	-0.012	0.013
Occupation	-0.112	0.096	Occupation	-0.112	0.096	Occupation	-0.112	0.096
Machiavellianism	-0.001	0.025	Machiavellianism	-0.001	0.025	Narcissism	0.054*	0.026
Narcissism	0.054*	0.026	Psychopathy	0.002	0.03	Psychopathy	0.002	0.03

Psychopathy	0.002	0.03	Narcissism	0.054*	0.026	Machiavellianism	-0.001	0.025
AIC	480.07		AIC	480.07		AIC	480.07	

Note. * indicates $p < .05$. ** indicates $p < .01$.

Figure S1

Relationship between dark triad and perception of help in a low-help condition

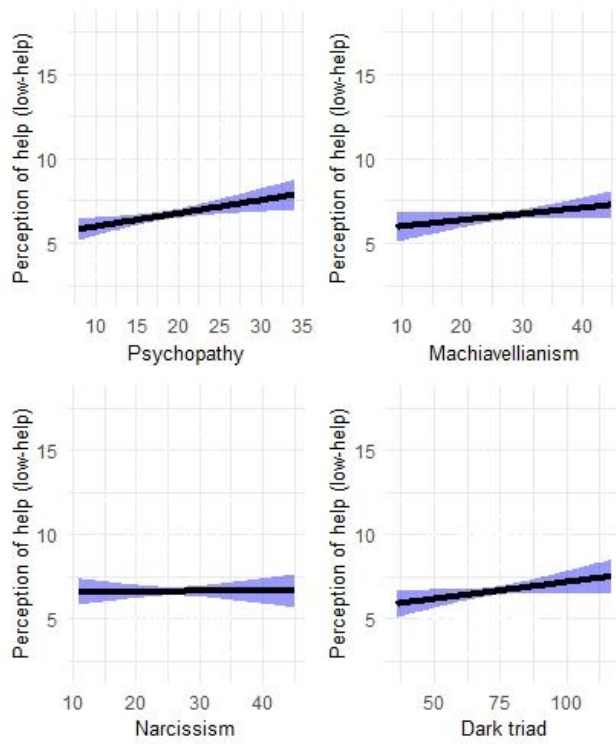


Figure S2

Relationship between dark triad and perception of help in a high-help condition

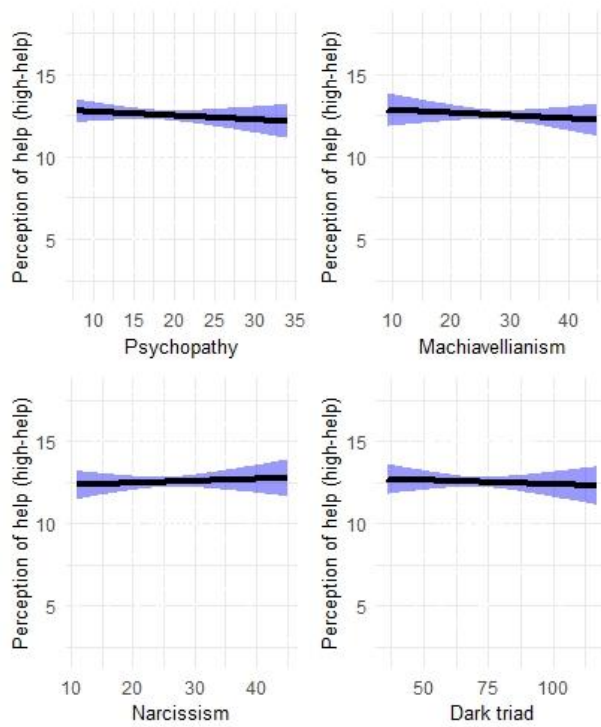


Figure S3

Relationship between dark triad and defection in a low-help condition

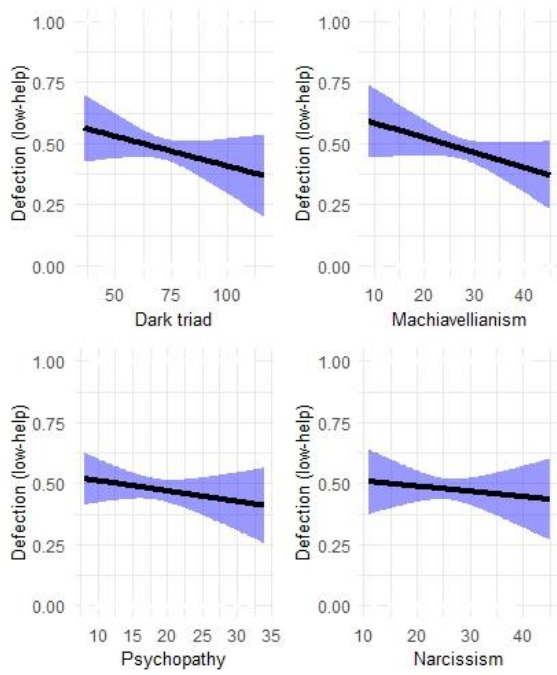


Figure S4

Relationship between dark triad and defection of help in a high-help condition

