

# Dark Triad personality traits and realistic and symbolic COVID-19 threat: The role of conspiracy mentality

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# Dark Triad personality traits and realistic and symbolic COVID-19 threat: The role of conspiracy mentality

**Introduction:** The COVID-19 pandemic has profoundly altered global social dynamics through extensive containment measures. Understanding how individuals perceive the virus, distinguishing between realistic and symbolic threats, and considering the influence of personality traits is essential for effective public health messaging and interventions. This study explores the linkage between personality traits and perceived COVID-19 threats, mediated by conspiracy mentality, across diverse international contexts.

**Methods:** Online survey data were collected in June 2021 from 13,645 participants across seven European countries, the U.S., and Colombia. The study explores how individuals with different Dark Triad traits perceive the threat of COVID-19, and whether conspiracy mentality mediates these perceptions.

**Results:** The findings reveal distinct associations. Machiavellianism and narcissism were linked to lower perceived COVID-19 threat, while psychopathy was associated with greater perceived threat. Additionally, individuals with higher conspiracy mentality endorsed greater perceived threat related to COVID-19.

**Conclusion:** This study highlights the influence of Dark Triad personality traits on how individuals perceive the threats posed by COVID-19, with conspiracy mentality mediating this relationship. Understanding these associations provides valuable insights into psychological factors affecting COVID-19 perception, informing future research and public health strategies.

**Key words:** COVID-19; pandemic; Dark Triad; Personality; Perceived threat; Conspiracy mentality

## Introduction

Following the outbreak of the novel coronavirus in December 2019, governments worldwide adopted a number of initiatives to combat the disease through a variety of strict containment measures. These measures have included lockdowns, mask and vaccine mandates, and social distancing requirements. As a result, we have witnessed a reshaping of social life that is unprecedented in recent times (Van Bavel et al., 2020). Although a variety of studies have emerged in social psychology to facilitate an understanding of these changes, a growing number of studies have also emerged to contribute to our understanding of how people perceive the threat posed by the virus (Flake et al., 2017; Kachanoff et al., 2021). Within integrated threat theory, two main types of threat are conceptualized: realistic and symbolic threat (Stephan et al., 1999). Realistic threats relate to fears regarding one's physical or material well-being, whereas symbolic threats concern the group's sociocultural identity (Kachanoff et al., 2021; Stephan et al., 2009). It is important to distinguish not only between different types of perceived threat towards this virus, but also how levels of perceived threat vary between individuals. For example, recent studies have shown that different Big Five personality traits are linked with individuals' fears of becoming ill during the pandemic (De Coninck et al., 2020). Making this distinction matters because understanding the different types of perceived threat towards the virus can help inform public health messages and interventions. For example, if people are primarily concerned about the threat to their financial stability, public health messages that emphasize the economic benefits of getting vaccinated may be more effective in motivating vaccination than messages that focus solely on the threat to physical health.

Due to strict lockdowns in many countries, access to reliable information to reduce fears among the public is essential. A recent – but rapidly growing – line of research examines the impact of misinformation on this process: does people's belief in conspiracy theories contribute to perceived COVID-19-threats (Hughes & Machan, 2021; Sternisko et al., 2021)? It is therefore important to advance theory development related to COVID-19 (mis)information as a way of providing individuals, policy makers, and health care practitioners with vital insights on how to mitigate the potential mental health impact of the current and potential future pandemics. The present study addresses this need by offering insights into the link between personality traits and the perceived threats of COVID-19, with

conspiracy mentality as a mediating variable, in 7 European countries, the United States, and Colombia.

### *Perceived COVID-19 threats and personality traits*

Most infectious diseases, including COVID-19, pose realistic threats to an individual's or group's physical health (i.e., through illness and disability) and economic well-being (i.e., spikes in unemployment rates due to weeks-long societal lockdowns). However, symbolic threats, which are perceived as endangering the integrity of a group's culture or symbols, such as religion, belief system, ideology, or morality, are equally important (Stephan et al., 2009). Governmental reactions to the novel coronavirus, such as implementation of so-called social distancing requirements as well as also debates regarding mandatory vaccination, may suggest to some people that their freedoms are under threat due to measures to stop the spread of COVID-19. To a growing number of individuals, values such as freedom of speech or the right of self-determination appear under threat due to governmental decisions to (re)implement measures to curb the spread of the virus, such as lockdowns and/or mandatory vaccine passports. In 2021 and 2022, this resulted in a growing number of protests against such measures (Paterlini, 2021).

Most studies on the link between personality and perceived threats of disease have focused on "socially desirable aspects of personality" (Nowak et al., 2020, p. 1) such as the Big Five traits (i.e., extraversion, agreeableness, openness, conscientiousness, and neuroticism). Although the pandemic has spurred feelings of solidarity and openness among the public, there have also been instances in which other darker personality traits have become prevalent. Although there are many so-called dark traits that can be considered (Zeigler-Hill & Marcus, 2016), as a rule, these traits represent manifestations of extreme self-interest – either individual- or group-based; that is, the traits refer to maximizing one's own benefit or one's in-group benefit, even at the expense of other people or groups (Nowak et al., 2020). In this context, the Dark Triad of Machiavellianism (manipulativeness, cynicism), psychopathy (impulsivity, callousness), and narcissism (sense of entitlement, grandiose self-perception) may be a key construct vis-à-vis how people perceive the threat of COVID-19 and how levels of perceived threat vary between individuals. Paulhus and Williams (2002, p. 557) emphasize that "[t]o varying degrees, all three entail a socially malevolent character with behavior tendencies toward self-promotion, emotional coldness, duplicity, and

aggressiveness”.

Studies have indicated that these traits are linked with behaviors that affect individuals' health (e.g., engaging in risky behaviors such as substance abuse) (Gott & Hetzel-Riggin, 2018; Hardin et al., 2021; Nowak et al., 2020), which suggests that they may help to understand responses to the COVID-19 pandemic as well. In their study of Polish adults, Zajenkowski et al. (2020) found that Dark Triad traits were linked with lower compliance with restrictive COVID-19 measures. They argue that the antisocial, selfish, and cynical views of those with a dark personality mostly appear in the context of interpersonal relationships (with family, friends, coworkers) rather than in reactions to macro-level events (such as the COVID-19 pandemic). Additionally, it is also possible that individuals with dark personality traits may perceive the pandemic as less risky and believe heavy restrictions to be excessive – in short, they may underestimate the pandemic (Hardin et al., 2021). Following these findings, and keeping in mind that dark traits tend to stimulate risky behavior (Maneiro et al., 2020), we expect individuals who score high on dark traits to report low perceived COVID-19 threat (Hypothesis 1).

#### *Conspiracy mentality as a mediator*

Throughout 2021 and into 2022, the role of conspiracy beliefs vis-à-vis COVID-19-related health outcomes and behaviors has received a great deal of attention from academics, policy makers, and the public. Although the link between dark personality traits and general conspiracy beliefs was well-established prior to COVID-19 (Bertin & Delouée, 2021), little research has investigated this link since the start of the pandemic (for exceptions, see Hughes & Machan, 2021; Sternisko et al., 2021). Most studies conducted in this direction have found that Dark Triad traits were linked to greater conspiracy beliefs and dissemination of these beliefs (Sternisko et al., 2021). The reasons for this may differ depending on the trait under consideration. For example, those with a greater sense of in-group superiority (i.e., collective narcissism) may believe “that public health crises reveal in-group failings and perceive such pandemics as a threat to their national image, and use conspiracies to reduce, deny or provide alternative explanations to manage heightened hypersensitivity to these in-group threats” (Hughes & Machan, 2021, p. 1; Sternisko et al., 2021). Those high in Machiavellianism and psychopathy tend to lead manipulative and exploitative lifestyles. Among such individuals, a greater belief in conspiracy beliefs tends to result from their cynical views and propensity to

manipulate others (Hughes & Machan, 2021; March & Springer, 2019).

At the same time, conspiracy beliefs may also be linked with people's health perceptions and behaviors related to COVID-19, such as rejection of medical recommendations and public health guidelines to contain the pandemic (van Prooijen, Etienne, Kutiyski, & Krouwel, 2021), as well as with lower vaccination intentions (Hughes & Machan, 2021). Heiss et al. (2021) also found that conspiracy thinking was linked with high levels of threat perceptions and lower levels of knowledge about COVID-19. Taken together, these studies suggest that (a) individuals with dark personality traits may be more likely to endorse conspiracy beliefs about COVID-19 (Hughes & Machan, 2021; Sternisko et al., 2021), which (b) in turn may lead to lower perceived threat of the virus and less engagement in behaviors to mitigate its spread (Heiss et al., 2021; van Prooijen et al., 2021). These findings signal a potential indirect effect of dark personality traits, through conspiracy beliefs, on perceived COVID-19 threat. As such, we would expect that the effect of dark personality traits on perceived COVID-19 related threats would be mediated by conspiracy beliefs (Sternisko et al., 2021) (Hypothesis 2). More specifically, we believe that dark traits will be linked to greater conspiracy beliefs (H2a), and that these conspiracy beliefs are in turn linked with greater perceived COVID-19 related threats (Heiss et al., 2021) (H2b).

## **Data and Methodology**

### ***Data***

Data were collected through an online questionnaire in adults aged 25 to 65 in seven European countries (Austria, Belgium, Germany, Hungary, Italy, Spain, Sweden), and adults over 18 in the United States and Colombia. The survey was distributed for four weeks in May and June 2021, at which point a sample size of 13,645 respondents (about 1,500 per country) was reached. Bilendi, the survey firm that collected the data, has a strong presence in the various countries under study, allowing us to limit the cost of the study and still gather a large dataset. The polling agency drew a quota sample out of its available panels, with heterogeneity in terms of age and gender. The response rate ranged from 12% to 31% across countries. Respondents were contacted through email with the request to participate in a study. The survey itself was distributed through Bilendi's own survey tool, and in the official language of the country or region where respondents resided. Translations of the survey were

carried out by professional translators, ensuring that the terminology used in the questions is considered ‘everyday language’ by the respondents. Respondents were unable to skip questions, but some did have a ‘no answer’ option. For more information on the dataset, see De Coninck, Duque, Schwartz and d’Haenens (2021). The study was approved by the KU Leuven Social and Societal Ethics Committee (case number G-2020-2590).

## **Measures**

### *Perceived COVID-19 threat*

We used the COVID-19 threat scale developed and validated by Kachanoff et al. (2021). This scale uses 10 items to assess realistic (related to physical well-being) and symbolic (related to sociocultural identity) COVID-19 threat on a 5-point scale (1 = low perceived threat, 5 = high perceived threat). This block of items was preceded by the statement ‘How much of a threat, if any, is the coronavirus outbreak for...?’. Examples of items are ‘The rights and freedoms of the *country* population as a whole’ and ‘Your personal health’. Each threat type was assessed through 5 items (for more information, see Kachanoff et al., 2021). Cronbach’s alpha values for scores on realistic (.81) and symbolic threat (.85) indicated high internal reliability for both subscales. See Appendix A for an overview of the full items.

### *Dark Triad personality traits*

Using the Dirty Dozen concise measure of Dark Triad personality traits (Jonason & Webster, 2010), we assessed respondents’ degree of Machiavellianism, psychopathy, and narcissism using 4 items apiece. Sample items include ‘I tend to exploit others towards my own end’ and ‘I tend to expect special favors from others’, measured on a 5-point scale (1 = do not agree at all, 5 = fully agree). Scores for each subtype of the Dark Triad were characterized by high internal reliability (Machiavellianism = .89, psychopathy = .79, narcissism = .86). See Appendix A for an overview of the full items.

### *Conspiracy mentality*

Respondents’ general mentality towards conspiracies was assessed through Bruder et al.’s (2013) Conspiracy Mentality Questionnaire. This scale includes 5 items such as ‘I think that there are secret organizations that greatly influence political decisions’, with answer options

ranging from 1 (certainly not) to 11 (certainly). These items form a one-dimensional construct with high internal reliability (Cronbach's alpha = .87). See Appendix A for an overview of the full items.

### *Socio-demographic characteristics*

Respondents were asked to indicate their sex (0 = male, 1 = female); age (recoded into four categories: under 30 years old, from 30 to 45 years old, from 46 to 60 years old, over 60 years old); religious denomination (Roman Catholic, Protestant, Muslim, Jewish, Agnostic/atheist, Other); full-time employment (0 = not employed full-time, 1 = employed full-time); educational attainment was measured by the highest level of education (no or primary education, lower secondary, higher secondary, tertiary – short form or college, tertiary – long form or university), and political ideology (0 = extreme left, 10 = extreme right). An overview of the sample per country can be found in Table 1.

### ***Analytic strategy***

To investigate the links among the Dark Triad, conspiracy mentality, and perceived COVID-19 threat, we estimated a multi-group structural equation model. In the overall model, we included the Dark Triad traits (narcissism, psychopathy, Machiavellianism) as the main independent variables, conspiracy mentality as a mediator, and perceived realistic and symbolic COVID-19 threat as the primary dependent variables. This study utilized Chin's (2004) recommended multi-group analysis method. Given that the scales were translated into different languages for this study, we verified measurement invariance for conspiracy beliefs, Dark Triad traits, and perceived COVID-19 threat. Metric invariance was established for conspiracy beliefs and perceived COVID-19 threats, and scalar invariance was established for the Dark Triad traits (see Appendix B, Table A1 for more information). The sample was divided into nine subgroups based on country. Fit indices were reported to assess whether the model was invariant across groups. These results, which can be found in Table A2, show that the hypothesized model provided a good to excellent fit across all groups. Path coefficients were calculated to determine the significance of the relationships in each subgroup (Table A3) (Velayutham et al., 2012). In what follows, we reported the results of the overall model. In the country-specific and overall model, we controlled for age, sex, education, religious



denomination, job status, and political ideology. In the overall model, we also included country fixed effects to control for country differences through dummy-coded variables for each country, with Austria designated the reference country.

Table 1. Descriptive overview of the sample ( $N = 13,645$ )

	Austria	Belgium	Colombia	Germany	Hungary	Italy	Spain	Sweden	U.S.
In %									
<b>Sex</b>									
Male	50.6	48.1	43.3	49.0	46.5	48.8	50.5	50.3	51.8
Female	49.4	51.9	56.7	51.0	53.5	51.2	49.5	49.7	48.2
<b>Age</b>									
Under 30 years	12.2	9.0	33.8	9.7	8.9	6.6	8.7	10.1	13.1
Between 30 and 45 years	42.1	39.0	41.3	41.2	45.8	40.6	44.6	41.9	43.3
Between 45 and 60 years	35.7	40.4	19.8	38.4	34.4	42.2	37.2	38.7	22.0
Over 60 years	10.0	11.6	5.1	10.7	10.9	10.6	9.5	9.4	21.6
<b>Religious denomination</b>									
Roman Catholic	57.9	45.3	61.8	27.2	48.3	72.4	51.7	6.5	34.8
Protestant	5.7	2.1	7.9	27.9	6.9	1.0	1.2	27.4	22.3
Muslim	2.5	1.3	0.4	2.0	0.2	0.7	0.4	3.8	6.1
Jewish	0.5	0.4	0.9	0.5	0.4	0.1	0.1	0.2	5.1
Agnostic/Atheist	25.7	46.5	4.9	36.8	24.9	20.1	39.2	51.5	10.0
Other	7.7	4.5	24.0	5.6	19.2	5.6	7.1	10.7	21.6
<b>Full-time job</b>	56.8	63.5	45.9	58.6	65.6	55.5	62.2	63.7	59.7
Mean scores (standard error in brackets)	Austria	Belgium	Colombia	Germany	Hungary	Italy	Spain	Sweden	U.S.
<b>Educational attainment (1–5)</b>	3.37 (0.85)	3.81 (1.01)	3.09 (1.15)	3.24 (1.05)	3.52 (0.76)	3.53 (1.00)	3.56 (1.12)	3.53 (0.84)	4.09 (1.30)

<b>Political ideology (0–10)</b>	4.79 (2.11)	5.32 (2.21)	5.10 (1.81)	4.77 (1.97)	5.39 (2.35)	5.21 (2.53)	4.47 (2.24)	5.37 (2.59)	6.46 (2.87)
<b>Realistic COVID-19 threat (1–5)</b>	3.16 (0.86)	3.39 (0.75)	4.12 (0.82)	3.20 (0.84)	3.26 (0.96)	3.54 (0.87)	3.69 (0.86)	3.25 (0.88)	3.51 (0.95)
<b>Symbolic COVID-19 threat (1–5)</b>	2.93 (1.06)	2.90 (0.90)	3.23 (1.00)	2.81 (1.02)	2.74 (1.01)	2.97 (0.98)	2.81 (1.00)	2.66 (1.02)	3.28 (1.11)
<b>Conspiracy mentality (1–11)</b>	6.47 (2.08)	5.72 (2.01)	7.38 (1.75)	5.61 (2.22)	7.04 (1.88)	6.75 (1.99)	7.04 (1.76)	5.59 (2.10)	6.70 (2.28)
<b>Dark Triad (1–5)</b>									
Machiavellianism	1.70 (0.82)	1.70 (0.85)	1.75 (0.87)	1.74 (0.87)	1.84 (0.89)	1.83 (0.99)	1.81 (0.90)	1.85 (0.94)	2.59 (1.33)
Psychopathy	1.97 (0.83)	2.22 (0.84)	1.86 (0.85)	2.00 (0.88)	1.87 (0.85)	2.11 (0.96)	1.92 (0.86)	2.00 (0.90)	2.68 (1.26)
Narcissism	2.01 (0.92)	1.93 (0.86)	2.20 (0.98)	1.99 (0.94)	2.10 (0.89)	2.17 (0.96)	2.13 (0.92)	1.99 (0.94)	2.75 (1.29)
<i>N</i>	<i>1,520</i>	<i>1,505</i>	<i>1,543</i>	<i>1,521</i>	<i>1,514</i>	<i>1,510</i>	<i>1,512</i>	<i>1,517</i>	<i>1,503</i>
<i>Cooperation rate (in %)</i>	<i>23</i>	<i>22</i>	<i>19</i>	<i>22</i>	<i>31</i>	<i>19</i>	<i>16</i>	<i>12</i>	<i>17</i>

## Results

The SEM presented in Table 2 fit the data well, indicated by a Root Mean Square Error of Approximation (RMSEA) value of .082, a Comparative Fit Index (CFI) value of .984, a Goodness of Fit Index (GFI) value of .991, and a Standardized Root Mean Squared Residual (SRMR) value of .031. The results indicate that the Dark Triad traits were clearly and negatively linked with perceived COVID-19 threat in the current sample. Of the three dark traits, we found that Machiavellianism was most strongly linked with lower perceived realistic ( $\beta = -.15, p < .001$ ) and perceived symbolic threat ( $\beta = -.14, p < .001$ ). Narcissism was also negatively related to both threat types ( $\beta_{\text{realistic threat}} = -.06, p < .001$ ;  $\beta_{\text{symbolic threat}} = -.07, p < .001$ ), albeit to a lesser extent. Somewhat surprisingly, psychopathy was positively linked with perceived realistic ( $\beta = .05, p < .01$ ) and perceived symbolic threat ( $\beta = .06, p < .001$ ). Fisher's z-tests indicated that the Dark Triad traits correlated differently from one another vis-à-vis perceived realistic and symbolic threat ( $p$ -values below .001). These results partially support H1, in which we expected dark traits to be linked to lower perceived COVID-19 threat. Whereas this is the case for narcissism and Machiavellianism, we found the opposite association for psychopathy. When we considered the direct effect of conspiracy mentality, we found that a high belief in conspiracies was strongly associated with greater perceived realistic threat ( $\beta = .17, p < .001$ ) and, to a lesser extent, with greater perceived symbolic threat ( $\beta = .06, p < .001$ ) – supporting H2b. When we examined the association between dark personality traits and conspiracy mentality, we found a positive link with narcissism ( $\beta = .06, p < .001$ ), but no statistically significant link with either Machiavellianism ( $\beta = .00, p = .10$ ) or psychopathy ( $\beta = .00, p = .09$ ). Indirect effects also indicate a small positive link from narcissism (through conspiracy mentality) to greater realistic threat ( $\beta = .01, p < .01$ ) – thus partially supporting H2a in which we anticipated a positive link between the dark traits and conspiracy mentality. Given the statistically significant indirect effect of narcissism on perceived COVID-19 threat, we can conclude that conspiracy beliefs function as a partial mediator for this trait. However, the effect size is very small and there is no indication for mediation of either Machiavellianism or psychopathy. As such, we do not want to overstate the limited mediating role of conspiracy beliefs.

When we considered the control variables, we found that older, lower educated, and more conservative respondents reported greater perceived realistic and perceived symbolic

COVID-19 threat compared to respondents who were under 30 years of age, highly educated, or more liberal. With Austria as a reference country, we found that perceived threats were lower in nearly all countries in our dataset: respondents from the United States reported the lowest levels of perceived realistic and perceived symbolic threat.

Table 2. Standardized direct and indirect effects of Dark Triad and conspiracy mentality on threat perceptions ( $N = 13,645$ )

Direct effects	Conspiracy mentality	Realistic threat	Symbolic threat
<b>Dark Triad</b>			
Machiavellianism	.00 (.02)	-.15*** (.02)	-.14*** (.02)
Psychopathy	.01 (.01)	.05** (.01)	.06*** (.01)
Narcissism	.06*** (.01)	-.06*** (.01)	-.07*** (.01)
<b>Conspiracy mentality</b>	-	.17*** (.01)	.06*** (.01)
<b>Gender (ref: male)</b>			
Female	.02 (.01)	.02 (.01)	.00 (.01)
<b>Age (ref: under 30 years)</b>			
Between 30 and 45 years	.06*** (.01)	.05*** (.01)	.02 (.01)
Between 45 and 60 years	.06*** (.01)	.08*** (.01)	.05*** (.01)
Over 60 years	.04*** (.01)	.05*** (.01)	.04* (.01)
<b>Religious denomination (ref: Catholic)</b>			
Protestant	-.02 (.01)	-.00 (.01)	-.01 (.01)
Muslim	.05*** (.01)	-.08*** (.01)	-.09*** (.01)
Jewish	.01 (.01)	-.04*** (.01)	-.04*** (.01)
Agnostic/Atheist	-.06*** (.01)	-.00 (.01)	-.02* (.01)
Other	.02 (.01)	-.02 (.01)	-.02 (.01)
<b>Full-time job</b>	.00 (.01)	.01 (.01)	.01 (.01)
<b>Educational attainment</b>	-.08*** (.01)	-.11*** (.01)	-.10*** (.01)
<b>Political ideology (conservative)</b>	.17*** (.01)	.27*** (.01)	.23*** (.01)

**Country (ref: Austria)**

Belgium	-.11*** (.01)	-.03* (.01)	-.02 (.01)
Colombia	.12*** (.01)	-.00 (.01)	-.06*** (.01)
Germany	-.13*** (.01)	-.04** (.01)	-.04** (.01)
Hungary	.08*** (.01)	-.02* (.01)	.07*** (.01)
Italy	.04*** (.01)	-.09*** (.01)	-.07*** (.01)
Spain	.10*** (.01)	-.11*** (.01)	-.09*** (.01)
Sweden	-.13*** (.01)	.05** (.01)	.02 (.01)
United States	.02 (.01)	-.18*** (.01)	-.20*** (.01)

**Indirect effects**

Conspiracy mentality

Realistic threat

Symbolic threat

**Dark Triad**

Machiavellianism

-

.00 (.00)

.00 (.00)

Psychopathy

-

.00 (.00)

.00 (.00)

Narcissism

-

.01\*\* (.00)

.00 (.00)

*RMSEA = .082; CFI = .984; GFI = .991; SRMR = .031;  $\chi^2 = 1868.162$*

Note: \*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$ .

## Discussion

The primary aim of this study was to examine the role of Dark Triad personality traits in predicting perceived realistic (or health-related) and perceived symbolic (or cultural) threats posed by COVID-19 in a 9-country sample. We also investigated the mediating role of individuals' conspiracy mentality. Narcissism and Machiavellianism were linked with lower perceived realistic and symbolic COVID-19 threat, whereas psychopathy was related to greater perceived threat. Conspiracy beliefs were strongly linked with greater perceived threats. In terms of indirect effects, only the association of narcissism with realistic threat was significantly mediated by conspiracy beliefs, but the effect size was very small (.01). We might therefore conclude that the associations of Dark Triad personality traits with perceived COVID-19 threats are almost entirely direct. It is possible that the nonsignificant associations of conspiracy beliefs in our results could be attributed to the way we measured these beliefs. Alternatively, had we used a measure tailored specifically to pandemic-related conspiracy beliefs, our results might have been different. For example, Heiss et al. (2021) found that greater belief in COVID-19 conspiracies was linked to greater perceived threat.

Based on earlier research (Hardin et al., 2021; Zajenkowski et al., 2020), we expected dark personality traits to be linked with lower perceived threat because these selfish and generally antisocial traits reduce group-related concerns about the local community or about the country's well-being and values. Furthermore, those with darker personalities tend to engage in more risky behavior, which may cause them to underestimate the dangers that COVID-19 poses to their personal, mental, and/or physical well-being (Paiva et al., 2021). For Machiavellianism and narcissism, our results point in this direction. Hardin et al. (2021) provide potential explanations for these effects. Narcissists, who often have a grandiose self-concept and tend to devalue others, may be unlikely to believe that COVID-19 will seriously compromise their health (Zajenkowski et al., 2020), and may not be concerned about the impact that the virus might exert on the local or national population. Moreover, individuals with high Machiavellianism and/or narcissism "may perceive the pandemic as a threat to the social stability that they rely on to exploit others and support their sense of superiority" (Hardin et al., 2021, p. 2). Thus, not viewing the pandemic as a physical or cultural threat fits the risk-taking views and behavior that are common among those high in dark personality traits (Nowak et al., 2020).



Psychopathy was, somewhat surprisingly, related to greater perceived threat. Psychopathy is not strongly related to concerns about social (in)stability but is rather characterized by strong antisocial tendencies. Although some studies (e.g., Noser et al., 2014) have found that all dark traits relate to COVID perceptions in similar ways, there is evidence (Hughes, & Machan, 2021) that individuals high only in psychopathy are more sensitive to anxiety and stress than are those high in narcissism and Machiavellianism. Given the increase in anxiety and stress that has been reported among many populations throughout the pandemic (for an example, see Génèreux et al., 2021), the positive link between psychopathy and perceived threat may reflect this general trend. However, we should note that we lack the necessary data to test these explanations. Specifically, we were unable to examine whether individuals high in psychopathy tend to experience higher levels of anxiety or whether individuals high in narcissism/Machiavellianism strongly rely on social stability. These indicators were not included in our study, limiting our ability to explore these specific aspects of dark personality traits and their potential effects on threat perceptions.

In line with prior literature (Heiss et al., 2021; van Mulukom et al., 2022), we also found that conspiracy beliefs were linked with greater perceived threat. Various studies have found that belief in conspiracy theories is linked with adverse mental health outcomes, such as higher feelings of threat, anxiety, depression, and stress, in the context of the current pandemic and in previous times of crisis (De Coninck, Frissen, Matthijs, d'Haenens et al., 2021; van Mulukom et al., 2022; van Prooijen & Douglas, 2017). Conversely, some studies have found that conspiracy beliefs may be linked with lower feelings of threat (Romer & Jamieson, 2020), as most conspiracies neglect or deny the health dangers posed by COVID-19. In the present study, the specific items used to assess perceived threat reflect the types of fears endorsed by those high in conspiracy beliefs. Realistic threat is assessed using a number of items regarding health threats – which may not play a large role for those high in conspiracy beliefs – but also items that consider economic threats. Symbolic threat is assessed by asking about the pandemic's threat to one's culture or symbols including one's political beliefs (i.e., individual freedoms and country's democracy). Such concerns represent two key elements of various conspiracy beliefs (van Mulukom et al., 2022), hence its positive link with perceived threats in the current results. The mediating role of conspiracy mentality was very limited, in that narcissism was the only dark trait that was significantly mediated by conspiracy beliefs to a small extent.

## **Limitations and Future Directions**

The present findings should be interpreted in light of some limitations. First, gauging such socially undesirable dark traits may be subject to social desirability bias, and the use of self-report questionnaire methods may be somewhat problematic. Additionally, despite our using a validated measure of the Dark Triad with good psychometric properties (Jonason & Webster, 2010), such measure has been criticized in the past for its limited convergent validity with some longer Dark Triad measures (Miller et al., 2011). Thus, future studies would perhaps benefit from using other measures to assess these dark traits. Furthermore, current literature distinguishes between grandiose and vulnerable narcissism, with the latter referring to insecure grandiosity associated with feelings of inadequacy, incompetence, and low self-esteem (e.g., Miller et al., 2011; 2021; Pincus et al., 2014). Although both aspects reflect antagonism and entitlement, vulnerable narcissism is linked with neuroticism (whereas grandiose narcissism is linked with extraversion). This distinction may be important vis-à-vis the literature on conspiratory mindset and perceived threat, and our inability to distinguish between the two types of narcissism may somewhat limit our contribution to the literature on narcissism (Kay, 2021).

Second, the use of a cross-sectional design to test predictive hypotheses is a limitation. Indeed, predictive relationships are most effectively tested when earlier levels of mediating and outcome variables can be statistically controlled (Maxwell & Cole, 2007). A third potential limitation involves the inclusion of primarily Western countries in our sample. We do not know whether similar findings would have emerged from respondents in Africa, the Middle East, or Asia.

## **Conclusion**

The present study provides new insights into the link between dark personality traits and the perceived realistic and symbolic threats posed by COVID-19, with conspiracy mentality as a mediating variable, in seven European countries, the United States, and Colombia. We found that narcissism and Machiavellianism were directly linked with lower perceived threats, whereas psychopathy and conspiracy mentality were linked with greater perceived threat. Additionally, narcissism had a positive indirect effect (through conspiracy mentality) on perceived realistic threat. These results suggest that perceived threats are differentially linked

with dark personality traits, and suggest a need for distinct approaches for combating false information and conspiracy theories regarding the origins of, and threats posed by, COVID-19 and future pandemics. These approaches might need to be tailored to the specific characteristics of individuals with dark personality traits, such as their tendency to prioritize their own interests over those of others or their tendency to be less trusting of others. Effective strategies may involve providing accurate information in a clear and concise manner, using trusted sources and experts, and addressing common misconceptions or beliefs that could contribute to the spread of false information. It might also be important to address the underlying motivations or biases that may be driving belief in false information, such as a desire for control or a distrust of authority.

### **Declaration of interest**

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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### **CRedit authorship contribution statement**

David De Coninck: Conceptualization, Methodology, Investigation, Formal analysis, Writing - original draft, Writing - review & editing. Maria Duque: Conceptualization, Writing - review & editing. Seth J. Schwartz: Conceptualization, Investigation, Formal analysis, Writing - review & editing, Funding acquisition.

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