Aversive personality and COVID-19: A first review and meta-analysis

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Abstract

The Coronavirus Disease 2019 (COVID-19) has strongly affected individuals and societies worldwide. In this review and meta-analysis, we investigated how aversive personality traits—i.e., relatively stable antisocial personality characteristics—related to how individuals perceived, evaluated, and responded to the COVID-19 pandemic. Across 34 studies with overall 26,780 participants, we found that people with higher scores in aversive personality traits were less likely to perceive guidelines and restrictions to curb the spread of the virus as protective ($\hat{\rho}$ = -.11), to engage in health behaviors related to COVID-19 ($\hat{\rho}$ = -.16), and to engage in non-health related prosocial behavior related to COVID-19 ($\hat{\rho}$ = -.14). We found no consistent relation between aversive personality and negative affect regarding the pandemic. The results thus indicate the importance of aversive personality traits in understanding individual differences with regard to COVID-19.

Keywords: Coronavirus, COVID-19, Honesty-Humility, Dark Triad, Aversive personality

Theoretical Background

The COVID-19 pandemic has posed a critical challenge for individuals and societies. As of May 2021, more than 157 million cases of COVID-19, including over 3.2 million deaths due to the virus, have been reported worldwide (WHO, 2021b). Furthermore, the pandemic has heavily destabilized the global economy (World Bank, 2020), and has disrupted supply chains and agricultural systems, leading to increased hunger in some regions of the world (World Bank, 2020). Given the absence of an effective medication readily available for everyone, authorities have implemented several measures, such as face mask mandates and lockdowns of varying degrees, to mitigate the spread of COVID-19. Most of these measures were implemented—with various adaptations—in most countries (Haug et al., 2020).

Meanwhile, intensive research has been conducted to better understand and fight the virus and its effects. In this regard, social and behavioral scientists have particularly focused on how individuals perceive, evaluate, and, more generally, respond to COVID-19 and measures aiming to mitigate its effects (e.g., Betsch et al., 2020; Gollwitzer et al., 2020; Pfattheicher et al., in press). For example, studies have investigated social and behavioral consequences of face mask policies (Betsch et al., 2020), (in)effective promotion of vaccination intentions (Pfattheicher et al., 2020), or the role of conspiracy theories in controlling the spread of COVID-19 (Romer & Jamieson, 2020).

One stream of research has focused on how personality traits—"relatively enduring patterns of thoughts, feelings, and behaviors that reflect the tendency to respond in certain ways under certain circumstances" (Roberts, 2009, p. 139)—relate to responses to COVID-19. Most corresponding research has considered the "Big Five", that is, Openness/Intellect,

Conscientiousness, Agreeableness, Extraversion, and Neuroticism (McCrae & Costa, 2008). The Big Five traits were linked to, for instance, concerns, precautions, and estimates about the duration of COVID-19 and its effects (Aschwanden et al., 2020), or to global COVID-19 related appraisals (Modersitzki et al., 2020).

Whereas the Big Five traits are the most commonly known personality traits, personality researchers have pointed out that certain anti- and prosocial personality characteristics are not well captured by them (Lee & Ashton, 2014; Paulhus et al., 2018). Most prominently, this is reflected in the literature on aversive (‘dark‘) personality traits—such as the Dark Triad components, that is, Machiavellianism, Narcissism, and Psychopathy (Paulhus & Williams, 2002)—as well as on another widely used model of basic personality structure, the HEXACO Model of Personality, which includes Honesty-Humility as a sixth basic trait (Ashton & Lee, 2007).[1] Specifically, a large body of research has shown that both aversive traits and Honesty-Humility are not well captured by the Big Five (Ashton et al., 2019; Schreiber & Marcus, 2020) and, in turn, show incremental validity concerning a broad range of criteria, particularly in the realm of anti- or prosocial behavior (Heck et al., 2018). Notably, even though Agreeableness from the Big Five does predict anti- and prosocial behavior (Thielmann et al., 2020), multiple studies have found that aversive traits and HEXACO Honesty-Humility were better predictors of anti- and prosocial behaviors than the Big Five Agreeableness (Ashton & Lee, 2008; Hilbig & Zettler, 2015; Moshagen et al., 2020).

Importantly, many responses to COVID-19 can be seen as an act of anti- or prosocial behavior. For example, forgoing physical contacts or wearing a face mask help society at large

[1] For a recent discussion comparing the HEXACO with the Big Five approach, see Ashton and Lee (2020)

by mitigating the spread of the virus (Dehning et al., 2020). In contrast, meeting friends or not following hygiene recommendations puts others at risk and harms society at large. Accordingly, aversive and prosocial traits appear relevant for thoughts, feelings, and behavior in the pandemic (e.g., Kay, 2020; Modersitzki et al., 2020; Zajenkowski et al., 2020; Zettler et al., 2021). In the present contribution, we provide a first review and meta-analysis on respective links; that is, between aversive and prosocial traits on the one hand, and COVID-19 related criteria.

Aversive traits

Stable personality dispositions comprising antagonistic, egoistic, and malevolent tendencies can be subsumed under the umbrella term aversive (or dark) traits (Paulhus & Williams, 2002), which have been investigated intensively in recent years (Muris et al., 2017). The most prominent aversive traits are the components of the Dark Triad (Schreiber & Marcus, 2020), Machiavellianism, Narcissism, and Psychopathy. Although different conceptualizations for these traits exist (Paulhus & Jones, 2015), they might be roughly summarized as follows: Machiavellianism emphasizes characteristics such as distrusting and manipulating others for personal aims (Dahling et al., 2009); narcissism emphasizes strong perceptions of grandiosity, uniqueness, and entitlement (e.g., Back & Morf, 2020); and psychopathy emphasizes characteristics such as impulsivity, boldness, and meanness (e.g., Lilienfeld et al., 2012). Next to the Dark Triad components, other aversive traits such as sadism (together with the Dark Triad making up the Dark Tetrad, e.g., Paulhus et al., 2020) have been introduced (e.g., Marcus & Zeigler-Hill, 2015; Moshagen et al., 2020).

Although aversive traits typically appear distinguishable (but see, e.g., Miller, 2016), a recent stream of research has highlighted that they share a common core representing most of the variance related to outcomes in the realm of malevolent and unethical behavior (Schreiber &

Marcus, 2020; Moshagen et al., 2018). This idea has been comprehensively conceptualized in the Dark Factor of Personality (or simply D), defined as the "tendency to maximize one's individual utility— disregarding, accepting, or malevolently provoking disutility for others—accompanied by beliefs that serve as justifications" (Moshagen et al., 2018, p. 656). In line with these conceptualizations, the dark core (i.e., the large shared variance between dark traits) as well as more specific aversive traits have been linked to various anti- and prosocial outcomes (Jones & Paulhus, 2017; Moshagen et al., 2018; Muris et al., 2017).

Honesty-Humility

Based on (re)analyses of more than a dozen lexical studies, Ashton and Lee (2010) and Ashton et al. (2004) suggested that six basic personality dimensions can be reliably identified across lexical studies. Consequently, they introduced the HEXACO personality model (Ashton & Lee, 2007), comprising the basic personality dimensions of Honesty-Humility, Emotionality (a rotated variant of Big Five Neuroticism), Extraversion, Agreeableness vs Anger (a rotated variant of Big Five Agreeableness), Conscientiousness, and Openness to Experience. The HEXACO model has been used increasingly, with results across several meta-analyses supporting the validity of each dimension (Zettler, Thielmann, et al., 2020).

The key difference between the HEXACO and the Big Five model is the addition of Honesty-Humility in the former. This dimension "represents the tendency to be fair and genuine in dealing with others, in the sense of cooperating with others even when one might exploit them without suffering retaliation" (Ashton & Lee, 2007, p. 156). More specifically, it comprises aspects such as being honest, fair, modest, and sincere vs. being boastful, deceitful, greedy, and sly (Ashton & Lee, 2008). Correspondingly, it has been linked to a variety of anti- and prosocial criteria, including cooperation, cheating, and counterproductive behavior (Zettler, Thielmann, et

al., 2020). Furthermore, it also shows a strong negative link to aversive traits, with a general meta-analytic estimate of $\hat{p}$ = -.69 (k = 93, N = 30,764; Zettler, Thielmann, et al., 2020).

In the remainder of the present study, we subsume (low) Honesty-Humility under the term aversive traits (in this regard, please see Schreiber & Marcus, 2020). It is important to keep in mind, however, that, unlike aversive traits, Honesty-Humility has been conceptualized as a personality dimension in a model of basic personality structure (Ashton & Lee, 2007), and that thus a number of conceptual differences between this dimension and the introduced aversive traits exist (Moshagen et al., 2018).

Aversive traits and COVID-19 related outcomes

Given the importance of aversive traits across areas, research has also linked such traits to COVID-19 related outcomes. The vast majority of such studies has focused on Honesty-Humility as well as the Dark Triad traits[2] (for an overview, see Supplemental Material, pp. 29-32). Regarding the COVID-19 related outcomes, we identified four categories of outcomes most commonly present in studies on the topic (see below), namely, (1) negative affect related to the pandemic; (2) perceptions of guidelines and restrictions to fight the pandemic; (3) health-related behaviors; and (4) non-health related prosocial behavior. In the following sections, we briefly

[2] Honesty-Humility and the Dark Triad are subclinical dispositions, rather than indicators of personality disorders. Some personality disorders, however, have already been associated with negative outcomes arising in response to the COVID-19 pandemic, such as increased risk of emotional instability, social isolation, and developing PTSD symptoms (e.g., Álvaro et al., 2020; Velotti et al., 2021; Wurman et al., 2020).

describe the outcomes included in each one of these categories, and illustrate how aversive traits have been related to them in individual studies.

Negative affect related to the pandemic

The first category of COVID-19 related outcomes focuses on negative affect—broadly conceptualized. Emerging research on negative affect during the COVID-19 pandemic shows that some individuals are particularly challenged by the pandemic and the restrictions (e.g., Zettler, Schild, et al., 2020) and experience stress, anxiety, and other types of negative affect related to the pandemic (e.g., Leder et al., 2020; Modersitzki et al., 2020). Screening across studies does not suggest a clear pattern of how aversive traits are related to pandemic-related negative affect, with some studies showing positive (e.g., Hardin et al., 2020) and some showing negative (e.g., Zajenkowski et al., 2020) relations. Furthermore, previous meta-analytical evidence connecting aversive traits to negative affect (irrespective of the COVID-19 pandemic), such as loneliness, poor well-being, and depression, also points towards a rather inconsistent relation between aversive traits and negative affect (see, for instance, Anglim et al., 2020; Muris et al., 2017). Given these mixed findings, we aim to shed some light on the relation between aversive traits and negative affect related to the pandemic.

Perceptions

The second category of COVID-19 related outcomes focuses on perception of measures aimed at containing the spread of the virus (e.g., Martin, 2020). This category encompasses, among others, perceived protective value of guidelines aimed at reducing the spread of the virus (e.g., Leder et al., 2020) and trust in governmental recommendations (e.g., Modersitzki et al., 2020). Typically, participants with high scores on aversive traits tend to evaluate such measures

rather negatively (e.g., Branovački et al., 2020; Modersitzki et al., 2020), presumably because beliefs in protective value of restrictions are ill-aligned with their lack of motivation to protect others, and/or because they are generally less trusting and cooperative (e.g., Muris et al., 2017; Zettler, Thielman, et al., 2020), also leading to less trust towards the government and guidelines.

Health-related behaviors

In absence of an effective medication readily available to everyone, engaging in health behaviors and adhering to health-related guidelines during the COVID-19 pandemic are one of the most important means in containing the spread of the virus (e.g., Dehning et al., 2020; Feng et al., 2020). Indeed, given that health-related behaviors can be considered a prosocial act by being beneficial for societies at large, studies investigating the relations between aversive traits and COVID-19 related outcomes have often focused on health-related behaviors (e.g., Columbus, 2020; Triberti et al., 2021). Such behaviors include, for instance, adherence to health-related governmental/scientific guidelines (e.g., Modersitzki et al., 2020), social distancing (Zettler, Schild, et al., 2020), and willingness to be vaccinated against COVID-19 (e.g., Martin, 2020; which is especially relevant since the introduction of several safe and effective vaccines; WHO, 2021a). The studies mentioned above often find that people with higher aversive trait levels are less willing to engage in health-related behaviors and to follow guidelines promoted by health authorities (e.g., Leder et al., 2020; Modersitzki et al., 2020). These results are attributed to their tendency to maximize their own benefits and their disregard for other people, which crystalizes in a lower willingness to help reducing the spread of COVID-19 among people in general (for similar meta-analytical findings, see Muris et al., 2017; Zettler, Thielmann, et al., 2020).

Non-health related prosocial behaviors

Given supply shortages during the pandemic as well as increased risk (especially for people from risk groups) when going shopping, individuals have partly relied on the cooperative behavior of others to get products required for day-to-day needs. However, in many countries, some individuals began to hoard goods which left some customers empty handed. More critically, some individuals (e.g., infected or elderly) were actively advised to isolate themselves and to avoid social contact in general and, thus, relied on others to run errands. Most studies on such non-health related prosocial behaviors focused on stockpiling (e.g., Garbe et al., 2020; Nowak et al., 2020) and helping those affected by the pandemic (Hardin et al., 2020). Herein, individuals higher in Honesty-Humility acted more prosocial (e.g., Columbus et al., 2020, Zettler, Schild et al., 2020; which also is in line with previous meta-analytical findings, showing that people high in Honesty-Humility act more prosocial, irrespective of the COVID-19 pandemic; e.g., Thielmann et al., 2020). For the dark trait components, results tended to be more mixed (e.g., Hardin et al., 2020; Nowak et al., 2020).

Present investigation

Herein, we investigate the relations between aversive personality (conceived both as a general tendency and with respect to particular aversive traits) and the four COVID-19-related outcome categories: (1) negative affect related to the pandemic; (2) perceptions of the protective value of guidelines and restrictions; (3) health-related behaviors; and (4) non-health related prosocial behavior. Study materials, analyses scripts, and data are available on the OSF (https://osf.io/z7nk2/). In the reporting of background, methods, results, discussion, and conclusion, we followed MOOSE reporting guidelines (Stroup, 2000).

Methods

Literature search

To identify relevant studies, we conducted a literature search via the database PsycInfo using the following search terms: (corona OR covid OR covid-19 OR coronavirus OR 2019-ncov) AND personality. The search was limited to studies in English language published in 2020 and 2021, and yielded a total of 170 hits. To also include unpublished studies and preprints, we conducted another search using the same search terms on Preprint Archive Search, resulting in 98 hits. The search was conducted on 20th April 2021. For all hits, the title and abstract were screened for relevant content; that is, studies including (i) min. one aversive personality trait and (ii) COVID-19 related criteria. Based on this, a total of 35 documents were extracted for full-text screening. Additionally, we included 15 documents of which the authors got aware via social media (e.g., twitter) and publisher newsletters for full-text screening. The list of excluded studies with justification why said studies were excluded, as well as a flow chart illustrating included and excluded documents are available in the Supplemental Material (Table S9 and S10).

Inclusion and exclusion criteria

All documents extracted for full-text screening had to be journal publications or preprints written in English. If a given document did not include sufficient information to compute effect sizes, we either contacted the authors, or calculated the required effect sizes based on publicly available data. We could thus obtain all required effect sizes, as such not excluding any documents based on insufficient data. We considered all variables of interest included in each study (as apparent from the documents and/or available data), even when the effects in question were not reported in the documents themselves (but were available otherwise, for instance, via

the raw data accessible on the Open Science Framework). Hence, we also included unpublished effect sizes.

We included documents which reported findings on one or more of the following aversive traits: Machiavellianism, Narcissism, Psychopathy, Sadism, the Dark Factor of Personality, (low) Honesty-Humility, and (low) Beneficiary/Observer/Perpetrator Sensitivity (Baumert et al., 2014). We included all findings related to these traits, independent of the measurement used. With regard to Beneficiary/Observer/Perpetrator Sensitivity, the Dark Factor of Personality, and Sadism, there were only four studies that reported findings relevant for our investigation (Fischer et al., 2021; Hardin et al., 2020; Kay, 2020; Zettler, Schild, et al., 2020). We thus do not report results pertaining to these traits separately, but merely include these traits in the aggregated aversive personality score (see below). Regarding COVID-19-related criteria, we excluded outcomes that were not explicitly related to COVID-19, and that did not match any of the four criterion classes. We included all findings related to these criterion classes, independent of the measurement used. We excluded aversive traits and COVID-19-related criteria if they exhibited significant ceiling or floor effects (e.g., Leder et al., 2020). We included results from correlational as well as experimental studies. With regard to the latter, if the experimental studies in question included effective manipulation(s) and between-subject designs, we included results from a neutral control condition only (if such condition was available; e.g., Schiffer et al., 2021; Study 1). If a neutral control condition was not available, we did not include results from such studies. For an overview of included measures, see Tables S4-S7 in the Supplemental Material.

Overall, we included 26 documents (22 journal articles and 4 preprints), with $k = 34$ studies and $N = 26{,}780$ participants in the meta-analysis (with an average of 787.65 participants per study; $SD = 1083.84$; min = 82; max = 6,450). All studies were conducted in the United

States or Europe. The detailed overview of the entire dataset is available in the Supplemental Material (Table S2). Furthermore, we conducted a post-hoc power analysis which revealed that the following meta-analyses have statistical power of approximately .80 to detect small-to-medium effects between $r = .06$ (for the meta-analysis including the largest number of studies and the largest total sample size; $k = 25$; $N = 22{,}018$), $r = .09$ (for the meta-analyses including the smallest number of studies; $k = 3$; $N = 2{,}935$; and $r = .14$ (for the meta-analysis including the smallest total sample size; $k = 6$; $N = 2{,}013$; Griffin, 2020).

Coding and aggregation

C.S. conducted the literature search, K.A.Ś. proposed the exclusion/inclusion criteria as well as the criterion classes, K.A.Ś. coded the identified studies, and assigned the criteria to the criterion classes. To test for reliability of the initial coding, C.S. re-coded five randomly selected studies. The inter-coder reliability of the initial and the subsequent coding equaled 98%. All of the final codings were additionally re-checked by A.S. The proposed exclusion/inclusion criteria, as well as the criterion classes, were discussed among all authors and partly adapted.

The criterion classes were identified based on our subjective evaluation of the most commonly occurring COVID-19-related measures in the literature. In other words, we identified the most frequently occurring COVID-19-related outcomes in the literature to date and grouped them based on their shared characteristics. If a criterion measure consisted of subscales/items that matched more than one of the criterion classes, the subscales/items were coded separately. Otherwise, i.e., if a criterion measure matched exactly one of the criterion classes, a general score for the outcome in question was coded. If a single study provided multiple effect sizes based on one sample, which were relevant for the same meta-analysis, the effects were

aggregated taking into account the inter-correlations between the included criterion variables (Hunter & Schmidt, 2015).

Analytic procedures

The meta-analyses are based on Pearson's *r* correlation coefficients. We conducted the meta-analyses using the *metafor* R package (Viechtbauer, 2010). We report Cochrane's *Q* statistic for assessing heterogeneity in effect sizes. Furthermore, we report I^2 statistic which describes the proportion of the observed variance that results from a true effect-size variance. For each meta-analysis, we report the sample size (*N*), the number of included samples (*k*), the meta-analytic correlation estimate ($\hat{p}$), as well as its 95% confidence intervals (95% CI).

We conducted five meta-analyses for each of the four criterion groups (i.e., 20 meta-analyses in total), namely, testing the relations between each criterion group and (1) the aggregated aversive personality score (i.e., an aggregate of low Honesty-Humility, Machiavellianism, Narcissism, Psychopathy, Sadism, (low) Beneficiary/Observer/Perpetrator Sensitivity, and the Dark Core of Personality), (2) Honesty-Humility, (3) Machiavellianism, (4) Narcissism, and (5) Psychopathy. For the meta-analyses involving Honesty-Humility, Machiavellianism, Narcissism, and Psychopathy, we aggregated different measures and/or 'types' of each aversive trait into one, taking into account inter-correlations between the different measures and/or types (Hunter & Schmidt, 2015). Doing so made it possible to conduct meta-analyses considering rather more general traits than their subtypes. Although we are fully aware that different types of the aversive traits exist (e.g., Back & Morf, 2020), we were unable to include them separately due to an insufficient number of studies for each type (or conceptualization of a trait).

Furthermore, for the meta-analyses testing the relations between the aggregated dark personality score and COVID-19 related criteria, we aggregated all of the included traits, taking into account inter-correlations between them (Hunter & Schmidt, 2015). We decided to aggregate them to test for the relation between generalized aversive personality and COVID-19 criteria, rather than between individual aversive traits and the outcomes in question. Please note that the traits in question are typically highly correlated with each other (for meta-analyses, see Muris et al., 2017; Zettler, et al., 2020), and that research suggests the appropriateness of considering a generalized aversive personality factor (e.g., Moshagen et al., 2018; Schreiber & Marcus, 2020).

We conducted leave-one-out analyses which revealed that nine of the included samples contributed significantly to the heterogeneity of the meta-analyses, and hence were removed from the individual meta-analyses to which heterogeneity they contributed. This allowed us to reduce heterogeneity by 6% on average (for details, see the OSF repository). Furthermore, to test for other potential sources of heterogeneity, we conducted several moderation analyses (including age, gender, and country). However, we did not identify a consistent pattern of results that would explain heterogeneity across the conducted meta-analyses (see, Table S5).

In addition, we followed three strategies in assessing publication bias: Egger's regression test (Egger et al., 1997), Begg and Mazumdar's rank correlation test (Begg & Mazumdar, 1994), and the trim-and-fill method (Duval & Tweedie, 2000). The analyses revealed that the results are not substantially affected by publication bias (see, Table S3).

Results

Aversive personality and COVID-19 related outcomes

We found that the aggregated aversive personality score was not significantly related to COVID-19 related negative affect ($\hat{p}$ = .04, 95% CI [-.01, .10], p = .119; k = 25). Furthermore, we found that the aggregated aversive personality score was negatively related to perceptions of guidelines and restrictions as protective ($\hat{p}$ = -.11, 95% CI [-.16, -.07], p < .001; k = 17), COVID-19 related health behaviors ($\hat{p}$ = -.16, 95% CI [-.20, -.12], p < .001; k = 25), and non-health related prosocial behavior ($\hat{p}$ = -.14, 95% CI [-.20, -.08], p < .001; k = 15; see Figure 1). All of the above-mentioned analyses exhibited significant heterogeneity across studies. Details on heterogeneity analyses and a summary of the results are available in Table S1.

Honesty-Humility and COVID-19-related outcomes

We found that Honesty-Humility was not significantly related to COVID-19 related negative affect ($\hat{p}$ = -.01, 95% CI [-.06, .03], p = .543; k = 12). By contrast, Honesty-Humility was positively related to COVID-19 related perceptions of guidelines and restrictions as protective ($\hat{p}$ = .12, 95% CI [.10, .14], p < .001; k = 10), health behaviors ($\hat{p}$ = .14, 95% CI [.10, .19], p < .001; k = 16), and non-health related prosocial behavior ($\hat{p}$ = .14, 95% CI [.10, .17], p < .001; k = 9; see Figure 1). All of these analyses, except from the analysis on the relation between Honesty-Humility and perceptions of guidelines, exhibited significant heterogeneity across studies (for details, see Table S1).

The Dark Triad traits and COVID-19 related outcomes

We found that none of the Dark Triad traits were significantly related to COVID-19-related negative affect. In contrast, two out of the three Dark Triad traits were significantly

negatively related to perceptions of guidelines and restrictions as protective (Machiavellianism: $\hat{p}$ = -.15, 95% CI [-.26, -.04], p =.009; k = 7, and Psychopathy: $\hat{p}$ = -.24, 95% CI [-.34, -.15], p <.001; k = 6).

Furthermore, the three Dark Triad traits were negatively related to COVID-19-related health behaviors (Machiavellianism: $\hat{p}$ = -.13, 95% CI [-.18, -.08], p <.001; k = 8; Narcissism: $\hat{p}$ = -.09, 95% CI [-.14, -.04], p <.001; k = 10; Psychopathy: $\hat{p}$ = -.15, 95% CI [-.21, -.09], p <.001; k = 8) and non-health related prosocial behaviors (Machiavellianism: $\hat{p}$ = -.22, 95% CI [-.26, -.17], p <.001; k = 3; Narcissism: $\hat{p}$ = -.20, 95% CI [-.28, -.12], p <.001; k = 5; Psychopathy: $\hat{p}$ = -.15, 95% CI [-.20, -.09], p < .001; k = 3). Again, most of the analyses described above exhibited significant heterogeneity across studies (for details, see Table S1).

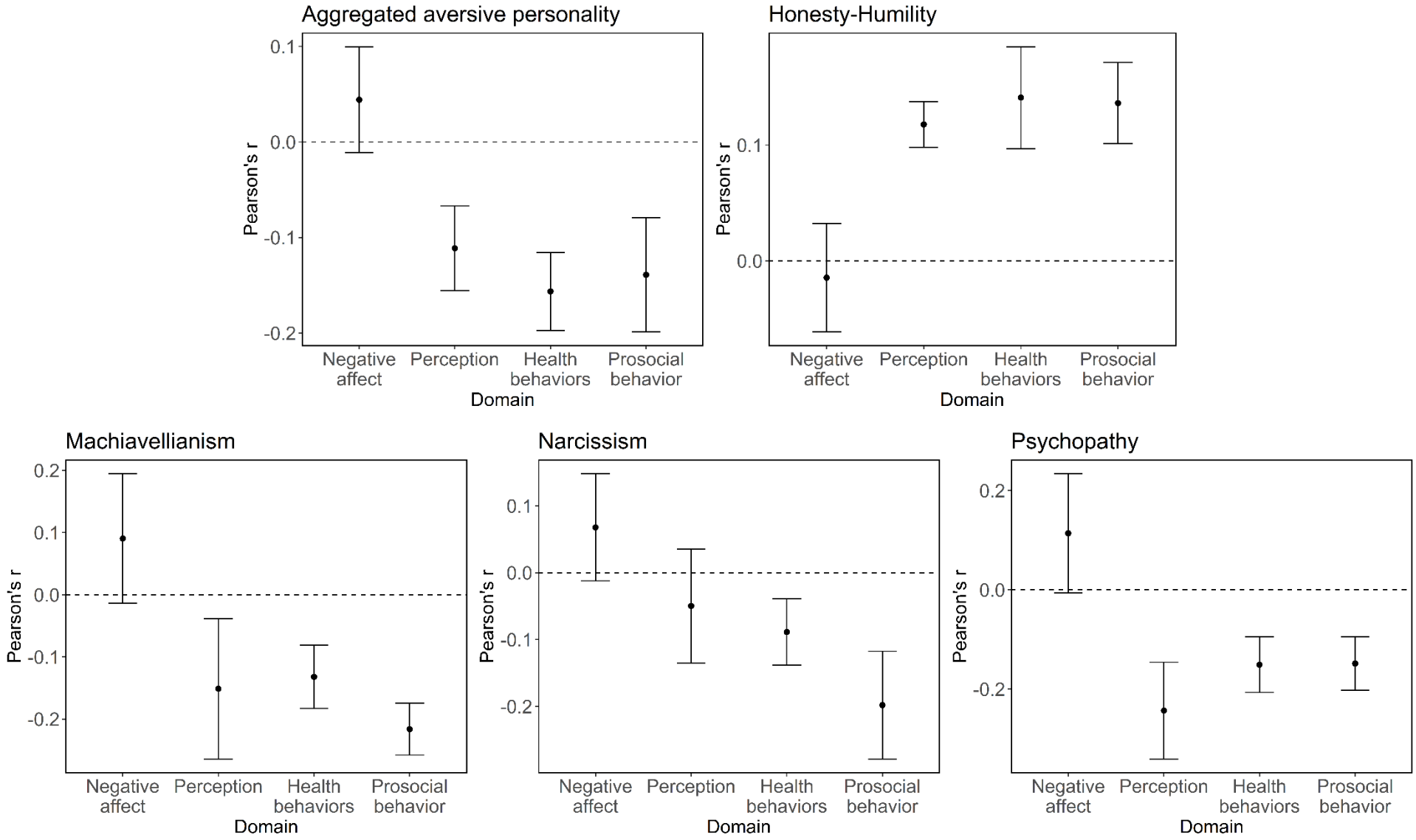

Figure 1. Pearson's r correlations between personality and COVID-19-related outcome categories. The dots indicate correlation coefficients, the vertical lines indicate 95% confidence intervals, and the dashed line indicates correlation of zer

Discussion

The COVID-19 pandemic has demanded substantial behavioral changes to curb the spread of the disease. In the present meta-analysis, we found that aversive personality (as captured by the aggregated aversive personality score) was negatively related to perceptions of guidelines and restrictions as protective (e.g., trust in governmental guidelines), engagement in health behaviors related to COVID-19 (e.g., following guidelines and restrictions), and non-health related prosocial behavior related to COVID-19 (e.g., avoiding hoarding). Furthermore, we did not find a significant relation between aversive personality and negative affect related to the COVID-19 pandemic. In addition, we tested relations between Honesty-Humility (e.g., Ashton & Lee, 2007) as well as the Dark Triad traits (Paulhus & Williams, 2002) and the outcomes in question. In this regard, we found that Honesty-Humility was positively related to perceptions of guidelines and restrictions as protective, engagement in health behaviors, and non-health related prosocial behaviors, and that the Dark Triad components were consistently negatively related to engagement in health behaviors as well as non-health related prosocial behaviors.

In line with previous research showing that aversive traits are linked to anti- and prosocial behavior (e.g., Muris et al., 2017; Zettler, Thielmann, et al., 2020), we found that people higher in aversive traits were less likely to engage in COVID-19-related health behaviors as well as non-health related prosocial behaviors, both of which constitute categories of behaviors that serve other people and society at large, and hence might require certain levels of prosociality to engage in. In line with this, we also found that people with higher scores in aversive personality were less likely to perceive the COVID-19-related guidelines as protective, possibly because such perception is ill-aligned with their lack of motivation to protect others.

Finally, we found no significant relation between the aggregated aversive personality score and negative affect related to the COVID-19 pandemic. It should be noted, however, that even though there is no strong theoretical reason to expect such a relation, the lack of it might have been caused by a large variety of aversive traits and COVID-19 related outcomes included in this category (which is also indicated by high heterogeneity observed, see Table S1).

Limitations and future directions

We want to highlight five limitations of the current research. First, there is a lack of behavioral measures for COVID-19 related criteria (in fact, none of the included studies herein used behavioral measures). At least, although self-reported behavior does not perfectly match actual behavior, it is often the closest proxy available, and has been related to real behavior, also during the pandemic. For example, preliminary evidence shows that self-reported social distancing behavior during the pandemic corresponds to a significant extent to actual social distancing behavior in real life (Gollwitzer et al., 2020).

Second, we collapsed across different measures of the same construct (e.g., negative affect). Although this procedure has the advantage of increasing statistical power, doing so increases the observed heterogeneity of the meta-analyses, which was substantial throughout.

Third, it should be noted that the observed effect sizes show a relatively low variance elucidation. Please note, however, that small-to-medium effect sizes are very commonly found in research predicting various outcomes with aversive personality traits (see, for instance, Thielmann et al., 2020; Zettler et al., 2020).

Fourth, the studies included herein were conducted in 'Western' countries only, and the samples were in most cases not representative for the entire population in these countries. Hence, it might be useful to replicate the present studies' findings using different sampling sources as well as more representative samples.

Fifth, we were able to include only a few moderation analyses in this investigation (i.e., including age, gender, and country, as moderators). Future studies might take into account the role of other moderating variables such as type of dependent variable (i.e., self-report vs. behavioral), as well as type of study design (i.e., longitudinal vs. cross-sectional), in the relations between personality and COVID-19-related outcomes.

Finally, our analysis also did not take the time-scale into account, that is, whether the relations remain robust throughout the course of the pandemic, or whether aversive traits are a stronger predictor in specific situations. In fact, one could expect that aversive traits (or traits more generally) shaped behavior in situations in which there was more individual freedom in choosing one`s behavior, e.g., due to less severe restrictions or only weak social norms being present. For instance, one could expect that aversive traits play a more prominent role (i) when the demanded behavior (e.g., hand washing) is performed in private and cannot be sanctioned, and (ii) in times during the pandemic when rules and recommendations were not clearly communicated and enforced. From this perspective, especially when the threat of a pandemic is very high, policy makers might want to implement situations that strongly guide people's behavior, for instance, by clear communications to the public, the establishment of widely shared social norms, or stricter regulations and sanctions. This might prevent that especially individuals with aversive personality traits adhere less to health-related guidelines. At the same time, however, such situations might also limit individual freedom, which might result in other

(especially long-term) costs. Overall, how different situations during the pandemic have shaped the impact of aversive personality is an intriguing question future studies could and should address.

Conclusion

This review and meta-analysis investigated the relations of aversive personality traits and COVID-19 related criteria. We found that aversive personality traits are consistently positively related to lower perceptions of restrictions and guidelines as protective, as well as to reduced engagement in health behaviors and non-health related prosocial behaviors. Further, we found that aversive traits were not consistently related to negative affect related to the pandemic. These findings point out that considering aversive personality traits when describing and investigating how people perceive, evaluate, and respond to COVID-19 is advisable.

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