



Full Length Article

## Agentic collective narcissism and communal collective narcissism: Do they predict COVID-19 pandemic-related beliefs and behaviors?

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## ABSTRACT

In a multinational study (61 countries;  $N = 15,039$ ), we examined how collective narcissists, both agentic (ACN) and communal (CCN), reacted cognitively (through endorsement of unfounded conspiracy and health beliefs) and behaviorally (via prevention, hoarding, and prosociality) to the pandemic. Higher ACN and CCN predicted greater endorsement of COVID-19 unfounded beliefs and higher likelihood of having recently engaged in pandemic-related prevention, hoarding, and prosociality. The predictive effects of ACN and CCN were independent, suggesting construct separability. Fear positively predicted endorsement of unfounded beliefs and behaviors, but the slope of that relation was flattened when ACN and CCN were particularly high. Finally, the relation between ACN or CCN and outcomes changed across countries varying in collective fear.

The COVID-19 pandemic threatened collective and individual safety (Ahorsu et al., 2022; Fofana et al., 2020). This threat instigated many changes in psychology and behavior, both at the group level (e.g., closing offices) and at the individual level (e.g., physical distancing;

Galea et al., 2020; Sternisko et al., 2023). However, as in most circumstances, despite widespread emergence of such changes, it was also the case that psychological responses and behavioral responses to the pandemic varied across individuals. For example, not everyone wore

masks and not everyone experienced fear of COVID-19. Our research examines reasons underlying such individual differences in responses to the pandemic.

Conceptual and empirical forays (Emmons, 1987; Raskin & Hall, 1979) attributed to narcissism characteristics that included a grandiose sense of importance, lack of empathy, and a belief of uniqueness and entitlement. These characteristics are relevant to the circumstances of the pandemic. They suggest, for example, that, in comparison to those low in narcissism, high narcissists regard the pandemic as an especially potent threat to themselves, perceive themselves as deserving of priority in treatment, and are especially likely to engage in hoarding behaviors.

However, this relatively straightforward picture of narcissists and the pandemic has been complicated by contemporary developments advocating that narcissism comes in different forms (Herman et al., 2018; Sedikides, 2021). Collective narcissism, focusing on the group or national level, is one such form (Golec de Zavala et al., 2009, 2023). The concept was developed as an extension of individual-level agentic narcissism to group-level agentic narcissism (Golec de Zavala, 2023). Collective narcissism, then, reflects group exceptionality in the agentic domain. Items of the Collective Narcissism Scale (Golec de Zavala et al., 2009) express such beliefs as "Not many people seem to fully understand the importance of my group" and "My group deserves special treatment." Due to these beliefs, collective narcissists are especially sensitive to ingroup threat (Marchlewska et al., 2020) and strive to maintain values or practices that protect the ingroup (Eker et al., 2022).

Recently, collective narcissism has been formally subdivided into two forms (Źemojtel-Piotrowska et al., 2023). In this subdivision, the original conceptualization and measurement of collective narcissism (Golec de Zavala et al., 2009), now labeled agentic collective narcissism (ACN), was supplemented by a communal form, communal collective narcissism (CCN). Characteristics of communal collective narcissism are strong ingroup identification, unrealistically positive beliefs about the ingroup's communal contributions, entitlement about the group's communal worth, and experienced grievance for lack of ingroup recognition (Źemojtel-Piotrowska, Piotrowski, Sedikides, et al., 2021). The two forms of collective narcissism are empirically distinguishable. ACN is related to agentic (and not communal) ingroup enhancement and protection, such as overrating the position of own country on economic growth and manifesting stronger reactivity when the ingroup's agency (but not communion) is threatened (Źemojtel-Piotrowska, Piotrowski, Sedikides, et al., 2021). CCN, on the other hand, is related to communal (but not agentic) ingroup enhancement and protection, such as overrating the position of own country on charitable donations and manifesting stronger reactivity when the ingroup's communion (but not agency) is threatened by offensive remarks from outgroup members (Źemojtel-Piotrowska et al., 2021). Moreover, ACN is a better predictor of agentic outcomes (e.g., intergroup threat and hostility; Źemojtel-Piotrowska et al., 2021), whereas CCN is better predictor of communal outcomes (e.g., intergroup trust and prosociality; Źemojtel-Piotrowska et al., 2021). Therefore, ACN and CCN are parallel, albeit distinct, forms of collective narcissism, similar to agentic and communal individual narcissism (Gebauer & Sedikides, 2018; Gebauer et al., 2012).

## 1. Variables predicted by collective narcissism

We examined whether and how each collective narcissism form predicted several pandemic-related outcomes. We selected outcome variables that would allow us to replicate and extend past research on responses to the pandemic and collective narcissism. These variables were: (a) endorsement of both COVID-related conspiracy beliefs and unfounded COVID-related health beliefs (Brzóska et al., 2024; Imhoff & Lamberty, 2020; Pennycook et al., 2022), and (b) enactment of COVID-related behaviors, such as prevention (e.g., handwashing), hoarding (Baddeley, 2020; Dinic & Bodroza, 2020), and prosociality (i.e., helping others; Nowak et al., 2020; Źemojtel-Piotrowska, Piotrowski, Sawicki, et al., 2021).

In one set of analyses, we tested the extent to which the two narcissism forms independently predicted the target thoughts or behaviors, and whether these predictive effects varied across forms. We preregistered two hypotheses. First, we hypothesized that ACN would be more strongly related to prevention than CCN. Put otherwise, agentic collective narcissists would likely over-engage in prevention, as they hold beliefs about its usefulness. Although we initially hypothesized additional moderation of this effect by country policy, in this manuscript we focus only on national level of fear, which we explain in further sections. Second, we hypothesized that CCN would be more strongly related to prosociality than ACN. Put otherwise, communal collective narcissists would likely over-engage in prosociality, as they hold beliefs about being exceptional in it. Additionally, we explored relations of collective narcissism with other responses, like unfounded beliefs and hoarding, because these responses were broadly studied at the onset of the pandemic and were relevant to collective narcissism (Nowak et al., 2020; Sternisko et al., 2021).

## 2. Possible novel contributions of our research

As mentioned above, these outcomes would replicate prior findings (for examples, see Federico et al., 2021; Nowak et al., 2020; Sternisko et al., 2023; Źemojtel-Piotrowska, Piotrowski, Sawicki, et al., 2021). However, our research also has the potential for novel contributions.

One such contribution would be made if results obtained for participants high on CAN were duplicated by those high on CCN. Given that communal collective narcissists present themselves as trustworthy and cooperative (Źemojtel-Piotrowska et al., 2021), we could detect paradoxal effects of communal collective narcissists acting in selfish (anti-communal) way. Moreover, if their utility in explaining different outcomes differed, such results would further indicate that ACN and CCN are both conceptually distinct forms of collective narcissism, replicating findings on the distinction between agentic narcissism and communal narcissism at the individual level (Sedikides, 2021).

Another potentially novel contribution lies in the nature of the sample: The sample size was large and contained participants from many countries. Thus, significant results ought to be thought of as highly trustworthy and highly generalizable. Moreover, such multinational sample provides an opportunity to distinguish between intraindividual and intergroup differences.

Intraindividual differences could be examined by testing how the relation between an individual's fear level and the outcome variables depends on the individual's level of collective narcissism. There are at least two possible forms that this moderation might take. First, assuming that high collective narcissists already have a strong self-protection system in place (Cichocka et al., 2022; Golec de Zavala et al., 2020), their reactions to specific (COVID-related) fear would be attenuated compared to those of low collective narcissists. As such, the relation between fear level and endorsement of unfounded beliefs about COVID would evince less elasticity (i.e., a flatter slope) for those high (vs. low) on collective narcissism. Second, assuming that high collective narcissists have a weak self-protection system in place (Cichocka et al., 2022), they would be particularly susceptible to situational threats such as the pandemic. Fear might intensify their susceptibility. As such, the relation between fear level and endorsement of unfounded beliefs about COVID-19 would evince more elasticity (i.e., a steeper slope) for those high (vs. low) on collective narcissism.

Intragroup differences could be examined by testing how fear level in the country in which an individual resides might be linked to relations between the individual's collective narcissism and the outcome variables. There are several possibilities. First, let us assume that high fear contributes to increased shared reality (e.g., ingroup values or beliefs) in the populace (Sternisko et al., 2023). If collective narcissists are insensitive to such shared reality, then we would observe no differences between low-fear and high-fear countries in regard to the relation between collective narcissism and responses to the pandemic. However, if high

(vs. low) collective narcissists are highly sensitive to shared reality, then we would observe a stronger relation between collective narcissism and responses to the pandemic in high-fear than low-fear countries. Further, if high (vs. low) collective narcissists are less sensitive to shared reality, we would observe the reverse results pattern, that is, a more stripped slope in low-fear than high-fear countries. Lastly, there are possible differences between agentic collective narcissists and communal collective narcissists in terms of their sensitivity to shared reality. We explore these differences.

### 3. Assorted project details

The authors have no conflict of interest to disclose. The project received ethical approval from the first author's institution (KEiB – 32/2020). We follow the Declaration of Helsinki rules for studies involving humans. We report all relevant measures and all data exclusions, and we follow Journal article reporting standards (Kazak, 2018). The authors declare that, following the national law of several countries, there was no direct collaboration between researchers from conflicting countries (where applicable). Datasets, codes, and [Supplementary Material](#) (which includes the research protocol) can be found at [https://osf.io/m9atn/?view\\_only=8363457afcfe40fe93d6df2f5c2711b6](https://osf.io/m9atn/?view_only=8363457afcfe40fe93d6df2f5c2711b6).

## 4. Method

### 4.1. Participants

As part of the international project [MASKED<sup>1</sup>] spanning 61 countries, we collected all data online in 2020 between April 24th and November 20th. We recruited participants via email or posts on Facebook forums devoted to pandemic-related topics. These forums included a link to the project's website. We recruited in each country's official language. Most participants ( $M = 96.17\%$ ,  $SD = 6.46\%$ ) selected their country's official language as their preferred mode of communication (e.g., Italians selected Italian). Latvians were the exception: Only 64.90% selected Latvian. We did not offer remuneration except to participants from either the Republic of South Africa or the United Kingdom (2GBP/~2.5USD).<sup>2</sup>

We included in the final data set only responses from participants over the age of 18 and only from those who responded to all measures and who answered correctly all three attention-check items (e.g., "This item aims to check your attention. Please mark 2"). As we were interested in exploring country-level effects, we included a given country in our dataset only if more than 40 residents of that country responded (Snijders, 2005).

Characteristics of the final sample, presented by country, appear in [Supplementary Material, Table S1](#). The sample comprised 15,039 participants (65.66% women, 34.34% men) ranging in age from 18 to 87 years ( $M = 31.68$ ,  $SD = 12.35$ ). Their highest education levels varied: Primary school = 0.80%, Secondary school = 30.53%, Bachelor's degree = 38.97%, Master's degree = 23.32%, Ph.D. = 6.39%. We also assessed socioeconomic status ("How would you describe the economic status of your family?": 1 = *much lower than average*, 4 = *average*, 7 = *much higher than average*;  $M = 4.32$ ,  $SD = 1.15$ ).

### 5. Procedure and measures

Participants responded to several questionnaires online. They were invited (in their local language) to engage in the study via either email or an announcement on Facebook forums devoted to COVID-related topics

that included a link to the project's website, where they could select the link to the survey in their preferred language (out of 35 options).<sup>3</sup> Therefore, all information was presented in the participant's preferred language.

Whenever possible, we used existing translations. When a new translation was needed, team members who spoke the needed language translated the questionnaire from the original language to the desired language using a back-translation procedure (Brislin, 1970). The questionnaires appeared in a random order, separately determined for each participant.

### 5.1. Collective narcissism: agentic and communal

We worded all collective narcissism items such that the participant's nation was the target group. We assessed agentic collective narcissism using the 8-item Collective Narcissism Scale (Golec de Zavala et al., 2009; 1 = *strongly disagree*, 7 = *strongly agree*; e.g., "I wish other would more quickly recognize authority of my nation";  $\alpha = 0.89$ ).<sup>4</sup> We assessed communal collective narcissism with the 7-item Communal Collective Narcissism Inventory (Žemojtel-Piotrowska, Piotrowski, Sedikides, et al., 2021; 1 = *strongly disagree*, 7 = *strongly agree*; e.g., "Very few other nations are as moral as my nation";  $\alpha = 0.87$ ).

### 5.2. Fear of COVID-19

We assessed fear of COVID-19 with the 7-item Fear of COVID-19 Scale (FCV-19S, Ahorsu et al., 2022; Sawicki et al., 2022). Sample items are "I am most afraid of Coronavirus-19" and "I am afraid of losing my life because of Coronavirus-19" (1 = *strongly disagree*, 7 = *strongly agree*;  $\alpha = 0.90$ ).

### 5.3. Endorsement of unfounded beliefs about COVID-19

We assessed the endorsement of unfounded beliefs about COVID-19 with the 8-item COVID-19 misperceptions scale (Brzójska et al., 2024; Pennycook et al., 2022; 1 = *strongly disagree*, 7 = *strongly agree*). Four items refer to conspiracy (e.g., "Coronavirus was created to be a bio-weapon";  $\alpha = 0.85$ ) and four to health (e.g., "Eating garlic cures the coronavirus";  $\alpha = 0.86$ ). We treated these sets of four in analyses as separate subscales, each of which referred to a different construct.

### 5.4. Likelihood of having enacted pandemic-linked behaviors

We assessed the likelihood with which people enacted pandemic-linked behaviors during COVID-19 with the modified 10-item Nowak et al. (2020) scale. Participants indicated whether they enacted these behaviors within the week preceding data collection (1 = *definitely not*, 4 = *definitely yes*). Four behaviors reflected prevention (e.g., "more frequent washing of hands";  $\alpha = 0.73$ ), three reflected hoarding (e.g., "buying food products, like rice, flour, milk, canned goods";  $\alpha = 0.72$ ), and three reflected prosociality (e.g., "provide emotional help to those in need";  $\alpha = 0.59$ ). We treated in analyses these three sets of items as separate subscales, referring to different constructs.

<sup>3</sup> Most participants in each country ( $M = 96.17\%$ ,  $SD = 6.46\%$ ) selected the country's official language (e.g., Italians selected Italian). Latvians were the exception: Only 64.90% of them selected Latvian. We distributed invitations and announcements in official languages.

<sup>4</sup> We deleted the item "If my group had a major say in the world, the world would be a much better place," as per prior practice (Sternisko et al. 2022; Žemojtel-Piotrowska et al., 2023; Žemojtel-Piotrowska, Piotrowski, Sedikides, et al., 2021): This item overlaps, at least partially, with communal collective narcissism.

<sup>1</sup> The project was preregistered at <https://osf.io/fdgwt>

<sup>2</sup> We lacked funding for data collection. We successfully relied on volunteers in all countries, except for the Republic of South Africa and United Kingdom where local collaborators secured fundings from their home institutions.

## 6. Data Handling and Analysis Evaluation Notes

We employed R software in all analyses. We inspected the data via simple descriptive statistics and then conducted factor analyses via the “lavaan” package (Roseell, 2012) and multilevel modeling via the “lme4” package (Bates et al., 2015). In the factor analyses, we used the Robust Maximum Likelihood estimator to account for deviations from normality (Yuan & Bentler, 2000) and relied on the following thresholds of fit indices: CFI > 0.90, RMSEA < 0.08, SRMR < 0.08 (Brown, 2015; Byrne, 1994). In the cross-cultural Multigroup Confirmatory Factor Analysis, we relied on the following thresholds to test metric invariance:  $\Delta\text{CFI} < -0.02$ ,  $\Delta\text{RMSEA} < 0.03$  (Rutkowski & Svetina, 2004). We compared the effect sizes of multilevel models by comparing their confidence intervals, with lack of overlap between them as indicator of significant difference.

## 7. Results

### 7.1. Confirming factor structures of measures across countries

One step in our analyses was establishing the cross-country comparability of the assessed constructs. First, to test whether the measures provided structurally valid data, we conducted Confirmatory Factor Analyses on the data from those 50 countries in which  $n > 100$  (Sawicki et al., 2022). Second, to establish the level of measurement invariance (and, by extension, the potential range of our inferences) in the data, we conducted Multigroup Confirmatory Factor Analyses. Given that at least a metric level of invariance was necessary to test our hypotheses, we allowed for partial metric invariance and, in some cases, excluded items.

Our factor analytic examinations and occasional measure alterations (via item deletions) led us to decide that the measures we collected were usable in subsequent analyses. For a more detailed description see the Factor Analyses section in [Supplementary Material](#). We report descriptive statistics for all measures in [Table S2](#).

### 7.2. The multilevel modeling analyses

We tested our hypotheses about relations between collective narcissism (ACN, CCN) and the outcome variables via multilevel model

(MLM) analyses, which took into account cross-country variability in effects observed and controlled for country-level variables in effects obtained. We carried out the analyses in a series of steps in which we consecutively added predictive variables to each model. We constructed these additional steps to facilitate the examination of the issues of interest. We present results in Tables S3 through S8. We summarize the results from the final step of each model in [Table 1](#).

#### **Issue #1: Do Agentic Collective Narcissism and Communal Collective Narcissism Predict Endorsement of Unfounded Beliefs About COVID-19 and COVID-Linked Behavior Likelihood?**

Our analytic approach allowed testing of whether ACN and CCN independently predicted an individual's thoughts and behaviors, and whether these predictive effects varied across the two collective narcissism forms. We obtained initial insight by examining correlations among the various measures (for correlations across all measures, see [Table S2](#)). Both ACN and CCN predicted: (a) endorsement of COVID-19 conspiracy beliefs and (b) unfounded COVID-19 health beliefs, as well as likelihood of recently enacting COVID-19 pandemic-linked (c) prevention, (d) hoarding, and (e) prosociality.

The tests of whether the predictive effects of ACN and CCN on these outcome variables were independent of each other come from MLM analyses. The relevant results appear in the Model 2 column of Tables S3 through S8, Supplemental material. In Model 2, we simultaneously entered ACN and CCN into the last step of the model. The results are clear: ACN and CCN always positively predicted each outcome variable. Sizes of their effects differed, however. Specifically, ACN was more strongly related than CCN to unfounded beliefs, and CCN was more strongly related than ACN to prosociality. Moreover, those differences were robust and remained significant after controlling for fear of COVID-19 in the model.

Thus, not only do increases in each form of collective narcissism significantly predict increases in each outcome variable, but the predictive effects of the two collective narcissism forms are independent of each other. Moreover, their relative predictive strength is congruent with expectations derived from prior research.

#### **Issue #2: Narcissism Level as a Moderator of Fear of COVID-19-Outcome Variable Relations**

In the next step we explore the possibility that fear moderated the relation between an individual's narcissism level and each of the

**Table 1**  
Standardized Coefficients of Multilevel Models.

Predictors	Beliefs About COVID-19				Behaviors in Response to COVID-19				
	Conspiracy		Health		Prevention		Hoarding		Prosociality
<b>Fixed Effects</b>									
Intercept	0.01	0.01	0.04	0.04	0.01	0.01	0.00	0.00	0.03
Gender (men)	-0.01	-0.01	0.02	0.02	-0.16***	-0.16***	0.02	0.02	-0.04*
Age	-0.05***	-0.05***	0.03	0.03**	0.01	0.01	-0.00	-0.00	0.10**
Education level	-0.09***	-0.09***	-0.04**	-0.04***	0.04***	0.05***	0.02*	0.02*	0.03***
SES	-0.05***	-0.05***	-0.03***	-0.03***	0.03***	0.03***	0.04***	0.04***	0.03***
ACN	0.24***	0.24***	0.16***	0.16***	-0.00	0.00	0.05***	0.05***	0.05***
CCN	0.03**	0.03**	0.11***	0.11***	0.06***	0.05***	0.06***	0.06***	0.12***
GDP	-0.24***	-0.23***	-0.30***	-0.30***	-0.08	-0.08	-0.11***	-0.11***	-0.16***
Fear of Covid (L1)	0.06***	0.06***	0.09***	0.09***	0.18***	0.18***	0.16***	0.16***	0.10***
Fear of Covid (L2)	-0.03	-0.03	0.08	0.08	0.39***	0.39***	0.25***	0.25***	0.11**
ACN x Fear (L1)	0.01		0.02*		-0.04**		-0.02*		-0.00
ACN x Fear (L2)	-0.06***		-0.01		0.02*		0.01		0.04***
CCN x Fear (L1)		0.01		0.02**		-0.04***		-0.01	
CCN x Fear (L2)		-0.04***		0.01		0.00		0.02	
<b>Random Effects</b>									
ICC	0.11	0.11	0.15	0.15	0.18	0.18	0.06	0.06	0.07
Country: intercept	0.12	0.13	0.16	0.16	0.08	0.08	0.04	0.04	0.04
Residual	0.99	0.99	0.91	0.91	0.35	0.35	0.63	0.63	0.51
Marginal R <sup>2</sup>	0.209	0.206	0.235	0.236	0.209	0.208	0.133	0.133	0.096
Conditional R <sup>2</sup>	0.296	0.296	0.352	0.353	0.353	0.352	0.189	0.189	0.162

Note. N = 15,039; Number of countries = 61; SES = socioeconomical status; ACN = agentic collective narcissism, CCN = communal collective narcissism;

\*  $p < 0.05$ . \*\*  $p < 0.01$ . \*\*\*  $p < 0.001$ .

remaining belief and/or behavior outcome variables.

Results appear in the Model 4a (ACN interaction examined) and Model 4b (CCN interaction examined) columns of Tables S4 through S8. The fear effects of relevance are the Level 1 (L1) interaction effects in each column; in the multilevel model, these are the fear effects as they are modeled at the level of the individual participant. The standardized coefficients for the two final model runs for each variable, one examining the interaction with ACN and the other examining the interaction with CCN, appear in Table 1. To clarify our terminology, in Table 1, by “individual level of fear” we refer to participants’ results relative to the average score in their country (group-mean centered scores); by “national level of fear” we refer to the nation’s average relative to the average score of all countries (grand-mean centered scores).

As expected, both simple correlations (Table S2) and the MLM results (Table S4 through S8) showed that individual fear of COVID-19 was positively associated to all the outcome variables. However, the MLM results produced evidence that this association was, indeed, sometimes moderated by an individual’s level of ACN or CCN. For example, the results depicted in Fig. 1 (see Table 1 for coefficients) illustrate that the association between fear of COVID-19 and endorsement of unfounded conspiracy beliefs about COVID-19 was not moderated either by an individual’s level of ACN or by their level of CCN. In contrast, Fig. 2 depicts significant moderation of the association between individual fear of COVID-19 and endorsement of unfounded health beliefs by both an individual’s level of ACN and their level of CCN (see Table 1 for coefficients; see Table S9, for slopes). For both ACN and CCN, the higher the level of collective narcissism, the steeper the slope of the relation between individual fear of COVID-19 and endorsement of unfounded health beliefs.

This inconsistency of moderation also emerged across the behavioral responses. Fig. 3 depicts significant moderation of the relation between individual fear of COVID-19 and the reported COVID-19 prevention by an individual’s level of ACN or CCN (see Table 1 for coefficients; see Table S9, Supplemental Material, for slopes). The moderation effect was significant for both ACN and CCN. Fig. 3 shows that the slope of the relation between an individual’s level of COVID-19-related fear and the reported COVID-19 prevention flattened as an individual’s ACN level or CCN level increased.

Fig. 4 depicts the relation between individual fear of COVID-19 and reported hoarding by an individual’s level of ACN or CCN (see Table 1 for coefficients; see Table S9 for slopes). The interaction depicted for ACN was significant, but the interaction depicted for CCN was not. Fig. 4, depicting the significant ACN interaction, shows that the slope of the relation between an individual’s level of COVID-19 related fear and reported hoarding flattened as an individual’s ACN level increased.

Fig. 5 portrays the relation between individual fear of COVID-19 and reported prosociality by an individual’s level of ACN or CCN (see Table 1 for coefficients; see Table S9 for slopes). The interaction was not significant for either ACN or CCN.

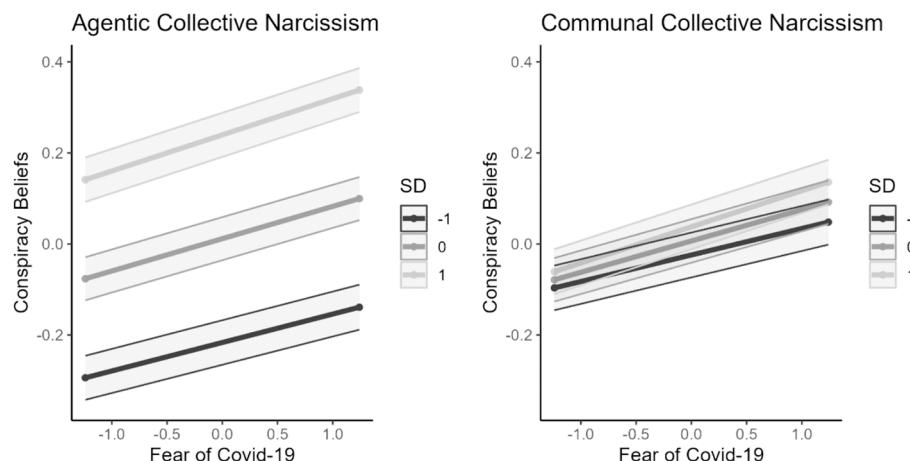
#### Issue #3: Fear Level in a Country as a Possible Moderator of Collective Narcissism-Outcome Variable Relations

This issue is novel in that it refers to how associations among COVID-19-related responses might be altered by societal context. Here, the context is the fear level in the country in which an individual resides. The MLM analyses used participants’ country of residence to estimate the fear of COVID-19 level associated with each country (high fear always positively predicted the outcome variables: see Table S2 for simple correlations, and Tables S4 through S8 for MLM results). The estimate of country-level COVID-19 fear could be used as a group-level variable in multilevel modeling to test whether the relations between an individual’s collective narcissism level and the outcome variables are moderated by the fear level characterizing one’s country of residence. The results appear in Table 1 and in Tables S4 through S8 (see interaction results that include the label “Fear [L2].”

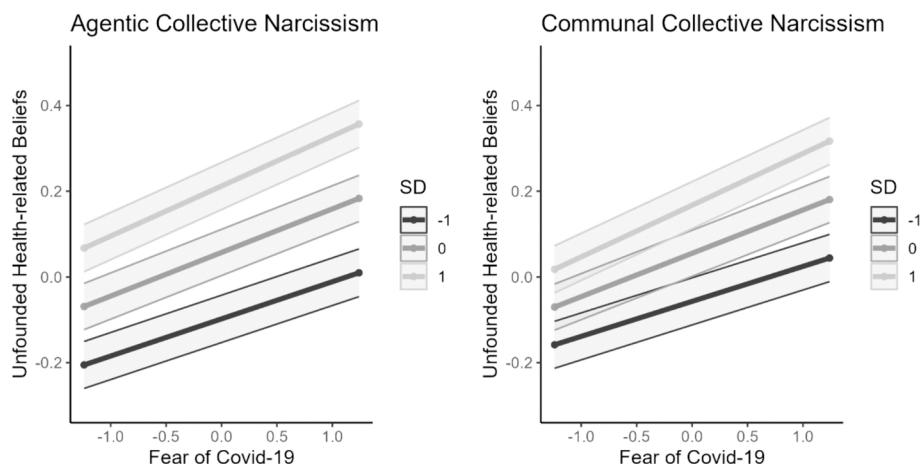
First, we consider the relation between individual collective narcissism levels and the endorsement of unfounded COVID-19 conspiracy beliefs. The results of the multilevel modeling analyses showed that this relation was, indeed, moderated by fear levels in a country. The results in Fig. 6 depict the moderation effects for both ACN and CCN. The ACN moderation effect shows that the relation between ACN and endorsement of COVID-19 conspiracy beliefs flattens out as fear levels in a country increase. The patterning for CCN is similar, but the slope of the relation between ACN and endorsement of COVID-19 conspiracy beliefs reverses (i.e., higher CCN predicts lower endorsement) in high fear countries.

However, this moderation effect did not emerge for the other kind of beliefs. The country-level fear of COVID-19 did not moderate the relation between collective narcissism level (either ACN or CCN) and endorsement of unfounded COVID-19 health beliefs (Fig. 7). In contrast, a moderation effect occurred for preventive behaviors. However, this moderation effect occurred only for ACN, not CCN (Fig. 8). The results showed that ACN only predicted preventive behaviors when there was a high level of fear in countries. In contrast, CCN always predicted the likelihood of having engaged in preventive behaviors, regardless of level of fear on countries. Thus, in these results, the patterns of the predictive relations between ACN and outcome variables and CCN and outcome variables manifested substantial differences.

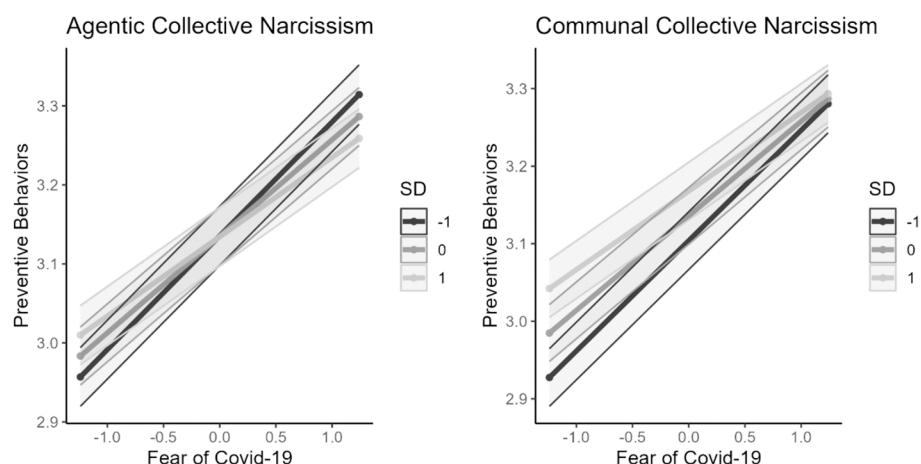
The absence of the moderation effects extended to one of the behavioral responses, as well. The country-level variable of fear of COVID-19 did not moderate the relation between collective narcissism



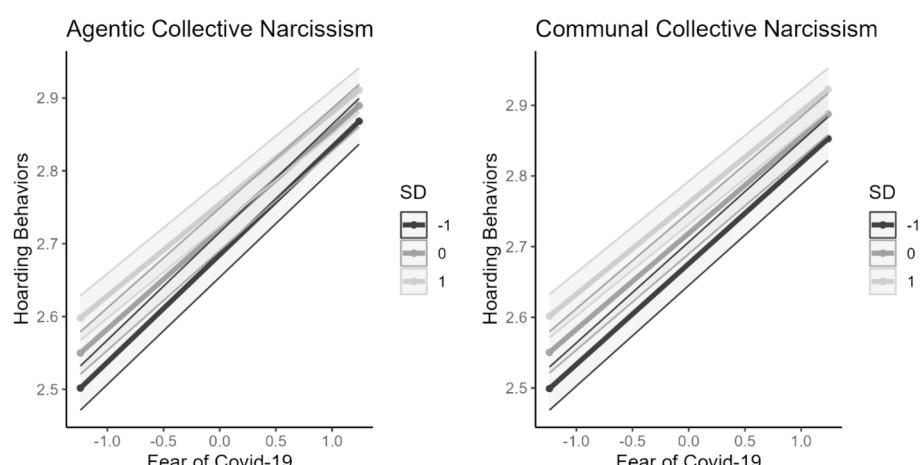
**Fig. 1.** Illustrating Non-Significant Moderation of the Link Between Individual Fear of COVID-19 and Endorsement of Conspiracy Beliefs for Both Agentic Collective Narcissism and Communal Collective Narcissism. Note. All simple slopes are significant,  $p < 0.05$ .



**Fig. 2.** Illustrating Significant Moderation of the Link Between Individual Fear of COVID-19 and Endorsement of Unfounded Health Beliefs for Both Agentic Collective Narcissism and Communal Collective Narcissism. Note. All simple slopes are significant,  $p < 0.05$ .



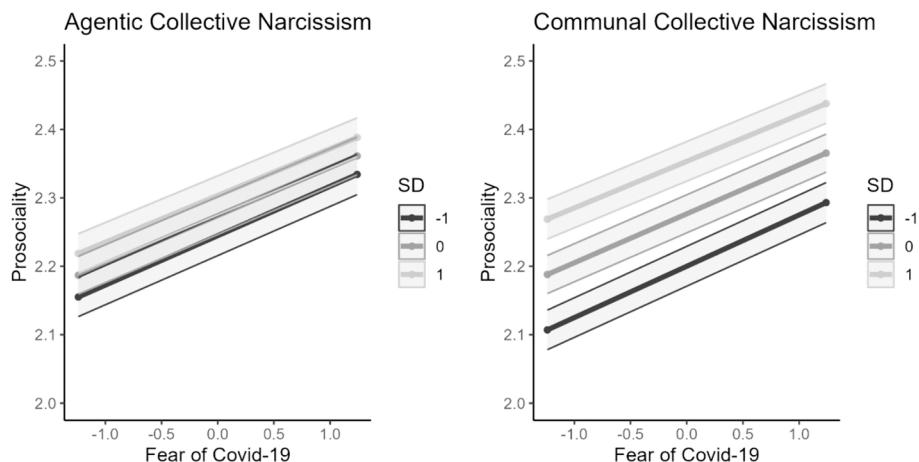
**Fig. 3.** Illustrating Significant Moderation of the Link Between Individual Fear of COVID-19 and Preventive Behaviors for Both Agentic Collective Narcissism and Communal Collective Narcissism. Note. All simple slopes are significant,  $p < 0.01$ .



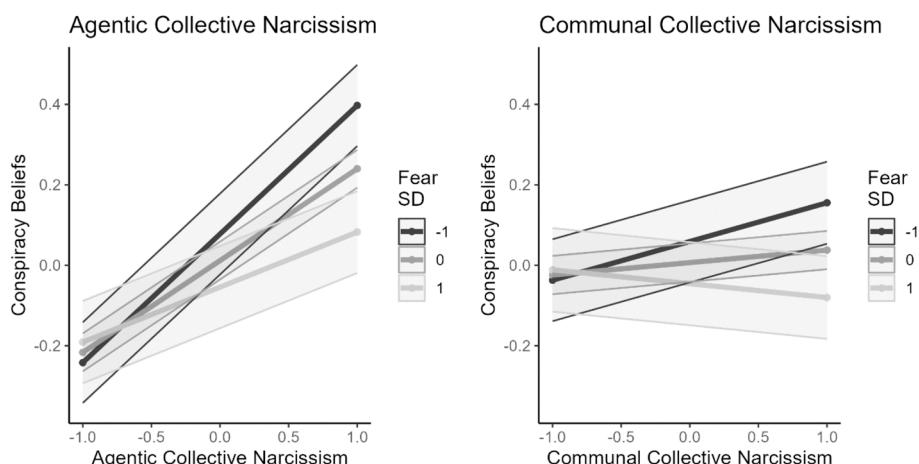
**Fig. 4.** Illustrating Moderation of the Link Between Individual Fear of COVID-19 and Hoarding Behaviors for Both Agentic Collective Narcissism (Interaction Significant) and Communal Collective Narcissism (Interaction Not Significant). Note. All simple slopes are significant,  $p < 0.05$ .

level (either ACN or CCN) and the likelihood of having enacted hoarding behaviors (Fig. 9). In contrast, moderation effects for both ACN and CCN emerged for one of the other behavior (Fig. 10). Fear level in a country altered the form of the predictive relation between collective narcissism

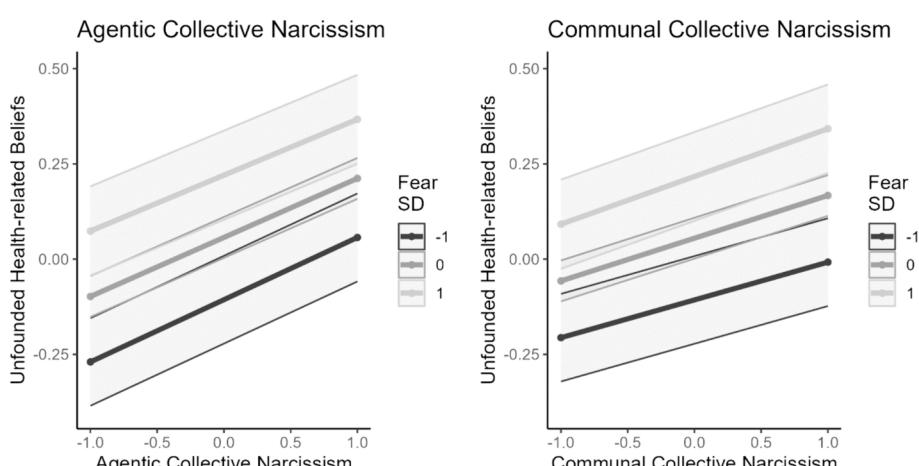
levels and prosociality, such that the slope of the relation steepened with increases in collective narcissism levels.



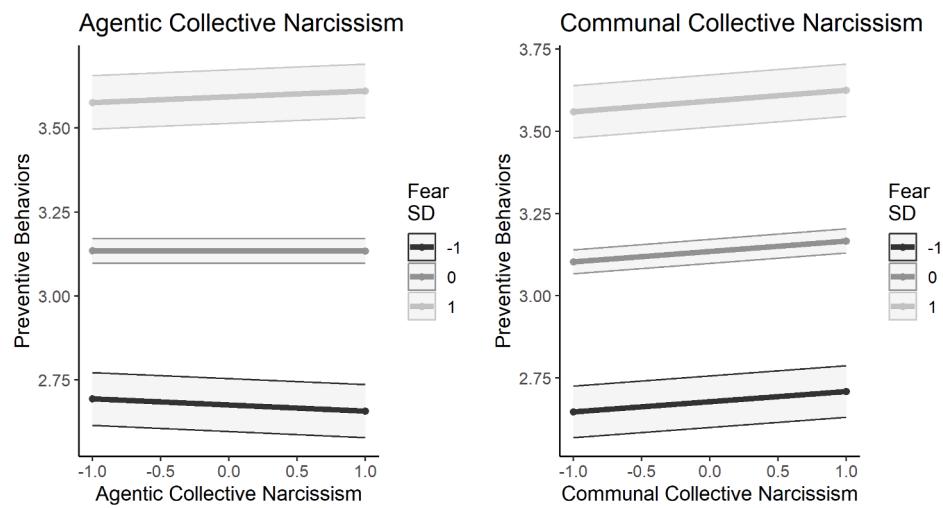
**Fig. 5.** Illustrating Non-Significant Moderation of the Link Between Individual Fear of COVID-19 and Prosociality for Both Agentic Collective Narcissism and Communal Collective Narcissism. Note. All simple slopes are significant,  $p < 0.05$ .



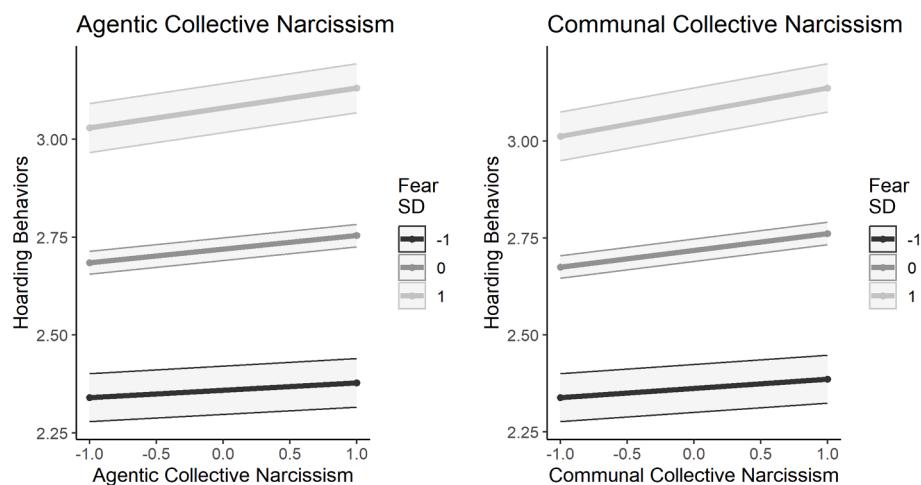
**Fig. 6.** Illustrating Significant Moderation by Country Fear Level of the Link Between Individual Collective Narcissism Levels (Both Agentic Collective Narcissism and Communal Collective Narcissism) and Endorsement of Unfounded Conspiracy Beliefs. Note. All simple slopes are significant,  $p < 0.05$ .



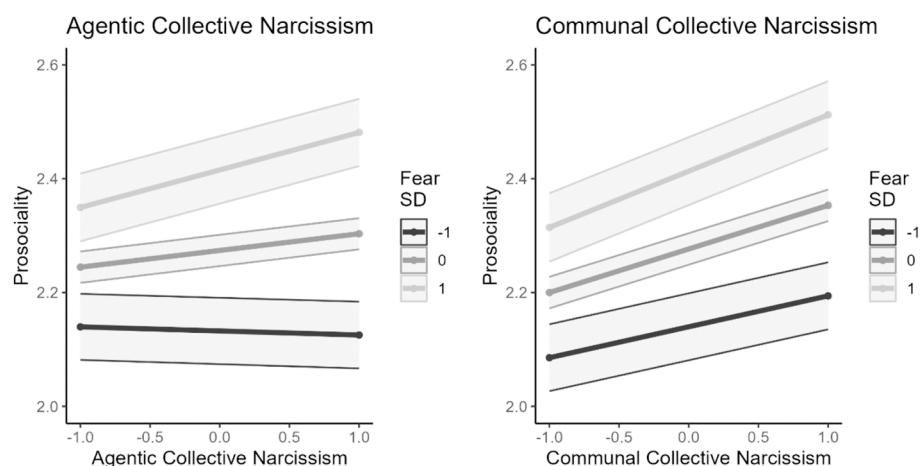
**Fig. 7.** Illustrating Non-Significant Moderation by Country Fear Level of the Link Between Individual Collective Narcissism Levels (Both Agentic Collective Narcissism and Communal Collective Narcissism) and Endorsement of Unfounded Health Beliefs. Note. All simple slopes are significant,  $p < 0.001$ .



**Fig. 8.** Moderation By Country-Level Fear of COVID-19 of the Link Between Collective Narcissisms and Preventive Behaviors. Note. All simple slopes for communal collective narcissism are significant,  $p < 0.05$ . Simple slopes for agentic collective narcissism are not significant with the exception of countries low in fear.



**Fig. 9.** Illustrating Non-Significant Moderation by County Fear Level of the Link Between Individual Collective Narcissism Levels (Both Agentic Collective Narcissism and Communal Collective Narcissism) and Hoarding. Note. All simple slopes, but agentic collective narcissism among countries low in fear of COVID-19, are significant at  $p < 0.05$ .



**Fig. 10.** Illustrating Significant Moderation by Country Fear Level of the Link Between Individual Collective Narcissism Levels (Both Agentic Collective Narcissism and Communal Collective Narcissism) and Prosociality. Note. All simple slopes, except agentic collective narcissism among countries low in fear of COVID-19, are significant at  $p < 0.05$ .

## 8. Discussion

### 8.1. Summary of Findings and Implications

Higher ACN and CCN independently predicted greater endorsement of (a) unfounded COVID-19 conspiracy beliefs, (b) unfounded COVID-19 health beliefs, and likelihood of recently enacting COVID-19 pandemic-linked (c) prevention, (d) hoarding behaviors, and (e) prosociality. We highlight the utility of these findings below.

The findings attest to the discriminant validity of ACN and CCN in a specific social context, that is, in countries coping with the COVID-19 disaster. Such validity adds momentum to claims of different forms of collective narcissism. These points are especially notable given the relatively large sample size and the cross-country character of the data.

An additional implication of the findings belies the simplistic notion that high narcissists will behave in ways that are largely selfish and anti-social. Rather, whether collective narcissists will behave in an anti-social or pro-social manner depends on where a researcher looks. Participants high in ACN and CCN, indeed, reported that they were more likely to have engaged in hoarding, but they both also reported that they were more likely to have engaged in COVID-19 prevention and prosociality (though the effects were observed more strongly among communal collective narcissists). Obviously, the latter two behavior tendencies are desirable in that they can help ward off the spread of the pandemic and/or ease the burdens of others who are confronted with it. Moreover, these findings fit our theoretical expectations. We expected that the predictive power of ACN and CCN would be especially likely to differ for communal behaviors, with CCN being the more powerful predictor for such behaviors. Of note, we expected that prevention would also be associated with ACN, as agentic narcissists hold beliefs about its utility, being prone to effectively dealing with the pandemic (Nowak et al., 2020). Prosociality was targeted to the ingroup. Although we expected that only communal collective narcissists would report higher prosociality, agentic communal narcissists reported it as well. Higher prosociality toward the ingroup on the part of agentic communal narcissists has also been found in other studies (Federico et al., 2021; Žemojtel-Piotrowska et al., 2021).

However, these moderation effects did not consistently emerge, which could reflect an alternative idea. It has been argued that acceptance of pandemic-related conspiracy beliefs involve the denying of the existence of the virus, whereas acceptance of unfounded health beliefs aims at controlling the threat posed by the pandemic (Brzóska et al., 2024; Pennycock et al., 2023). Given these proposals, it makes sense that unfounded health-related beliefs would be especially endorsed by ACNs, as such collective narcissists are especially likely to feel the need to effectively combat the threats posed by the pandemic (Žemojtel-Piotrowska, Piotrowski, Sawicki et al., 2021; Žemojtel-Piotrowska, Piotrowski, Sedikides, et al., 2021).

Also, we observed significant moderation by an individual's level of both ACN and CCN on the relation between individual fear of COVID-19 and (a) endorsement of unfounded COVID-19 health beliefs, (b) reported COVID-19 prevention, and (c) reported COVID-19-linked hoarding (but only for ACN, not for CCN). These findings make theoretical sense if one assumes that, because collective narcissists employ strong self-protective systems, those systems will be relatively inelastic to further changes induced by high fear. Instead, participants low in ACN or CCN, who do not have strong self-protective systems, will be the ones manifesting thoughts and behaviors especially responsive to different levels of fear. The emerging moderation effects fit these ideas.

Moreover, we explored how individual responses to the COVID-19 pandemic are related to the fear level characterizing an individual's country of residence. One explanation for such a relation lies in the notion that high fear in a country produces strong self-protective systems in the residents of that country. Hence, in this high fear context (e.g., a country evincing high chronic fear levels), individuals' self-protective systems will be relatively inelastic to other variables, such

as an individual's ACN and CCN levels, that might also be expected to influence the production and use of self-protective systems. In contrast, the self-protective systems of those living in low-fear countries will manifest more elasticity. However, there is an alternative view. Collective narcissists could be especially sensitive to the beliefs and responses that are popular in their group. This tendency could be especially strong when fear levels are high. This reasoning suggests stronger relations between collective narcissism and responses to the pandemic in countries with higher levels of fear.

Some of our findings fit the first explanation. For example, the relation between ACN and endorsement of COVID-19 conspiracy beliefs flattened out as fear levels in a country increased. The patterning for CCN was similar, but the slope of the relation between ACN and endorsement of COVID-19 conspiracy beliefs reversed (i.e., higher CCN predicted lower endorsement) in high-fear countries. This last finding may be congruent with the prediction that communal (but not agentic) CNs are more sensitive to the collective interpretation of reality. Given that in the countries with greater fear it was hard to deny the existence of coronavirus, communal CNs adopted beliefs congruent with the official narrative of their governments, which could be explained by the CCN's greater trust (Žemojtel-Piotrowska et al., 2021).

Country-level moderation effects for both ACN and CCN also emerged for two of the behaviors, but these effects fit the second (popular responding) explanation. For example, fear levels in a country altered the form of the predictive relation between collective narcissism levels and prosociality such that the slope of the relation steepened with increases in collective narcissism levels. A similar moderation effect also occurred (but only for ACN, not CCN) for reported COVID-19 preventive behaviors. ACN only predicted this variable in the case of high levels of fear in countries.

Why do fear levels in a country moderated differently pandemic-related beliefs and pandemic-related behaviors? Observability of the outcome variable is an explanation. Overt behaviors may be relatively uninfluenced by a country's fear level, which would allow considerable freedom for other variables that influence behaviors (e.g., an individual's communal narcissism level) to act. In contrast, responding in the less observable belief domain may be driven largely by the shared beliefs and emotions prompted by a country's fear level, which would allow less freedom for other variables that influence beliefs (communal narcissism) to act.

### 8.2. Limitations and Additional Empirical Pathways

We used convenience samples, and participants were mostly well-educated and relatively affluent. These practices may cause a concern about generalizability across participant types. Also, sample sizes differed across countries. Small sample sizes in a given category can limit the power of the analyses conducted, even when a study overall evinces a large sample size, especially when the categories are used as a variable in the analyses (Keppel, 1993; Rusticus & Lovato, 2019).

Moreover, we relied on retrospective self-reported behaviors. Yet, self-reports were suitable and informative for our research objectives, while not necessarily lacking in validity (Short et al., 2009). Further, retrospective reports are valid (Skowronski et al., 2014). In addition, there is no compelling evidence that narcissists are affected by social desirability (Raskin & Terry, 1988; Sedikides et al., 2004). More to the point, narcissists have insight into their own behavior and comfortable with being arrogant (Carlson et al., 2011). Nevertheless, future research ought to assess social desirability concurrently with the two forms of narcissism. This research could also involve other techniques, such as momentary ecological assessment, to record immediate instances of behavior.

Further, many studies on collective narcissism partial out secure identity (Golec de Zavala, 2023; Sternisko et al., 2023). We did not do so. We purposely excluded this variable from our research program after results from extensive pilot studies in Poland and single-country findings

that employ two forms of collective narcissism (Nowak et al., 2023; Žemojtel-Piotrowska et al., 2021, 2023) suggested that partialling out secure identity would not alter our results.

Another possible concern lies in the fact that we assessed fear of COVID-19 with the FCV-19S (Ahorsu et al., 2022; Sawicki et al., 2022). This measurement instrument relies on general items referring to physical symptoms of fear due to COVID-19 or general death anxiety due to COVID-19. These items pose a potential concern, because they do not disentangle, but may even co-mingle, some of the alternative sources of threat (Guerra et al., 2021; Kachanoff et al., 2021; Žemojtel-Piotrowska, Piotrowski, Sawicki, et al., 2021). For example, people can be afraid of COVID-19 because of the extent to which it threatens them personally, or they can be afraid of COVID-19 because of the extent to which it threatens their group (e.g., family). This possible co-mingling is of obvious special concern in studies that try to separate the effects of collective thought (e.g., in collective narcissists) from the effects of individual thought (e.g., agentic narcissists). This concern can be rectified in future research by separately assessing self-focused fear and collectively-focused fear.

Furthermore, the effects of social norms may differ (Drury, 2018) among individuals evincing different forms of narcissism. The tendency of collective narcissists to engage in undesirable COVID-19 pandemic-related thoughts and actions depends on the extent to which these thoughts and actions reflect consensually accepted social norms (as opposed to legal restrictions). For example, communal collective narcissists may be especially likely to adopt beliefs and behaviors that reflect their social context. These can be a double-edged sword. Unfounded beliefs may be more likely to be rejected when they reflect the cultural context, but they may also be more likely to be accepted when they reflect belief in the cultural context. Similarly, collective communal narcissists may be especially likely to be prosocial in countries where prosociality is of particular value, as in highly religious or interdependent ones. We did not consider such possibilities here, as they do not directly fit into the scope of our paper. We suggest that this issue be examined in follow-up investigations.

Lastly, the pandemic required collective responses to threats experienced both individually and collectively. Many other threats, like climate change, war, terrorism, or possible future pandemics, pose similar threats. Yet, we emphasize that our findings are limited to the pandemic context. Given potential differences across emergencies, one needs to be cautious about extending our findings to other contexts.

## 9. Conclusion

We examined and found out that, across cultures, ACN and CCN largely responded differently to the pandemic emotionally, cognitively, and behaviorally. Also, we showed that collective narcissists can behave both anti-socially and pro-socially, depending on the assessed outcome variable. We look forward to replications and extensions of our findings, advancing our understanding of why individuals differ in their responses to events such as the COVID-19 pandemic.

## CRediT authorship contribution statement

**Magdalena Žemojtel-Piotrowska:** Writing – review & editing, Writing – original draft, Validation, Supervision, Project administration, Methodology, Investigation, Funding acquisition, Conceptualization. **Artur Sawicki:** Writing – review & editing, Writing – original draft, Visualization, Methodology, Formal analysis, Data curation. **Jarosław Piotrowski:** Writing – review & editing, Supervision, Project administration, Methodology. **Uri Lifshin:** Writing – review & editing, Investigation, Conceptualization. **Mabelle Kretchner:** Writing – review & editing, Investigation, Conceptualization. **John J. Skowronski:** Writing – review & editing, Writing – original draft, Supervision, Conceptualization. **Constantine Sedikides:** Writing – review & editing, Writing – original draft, Supervision, Conceptualization. **Peter K. Jonason:**

Writing – review & editing, Investigation, Conceptualization. **Mladen Adamovic:** Writing – review & editing, Investigation, Funding acquisition. **Attiso M.G. Agada:** Writing – review & editing, Investigation, Funding acquisition. **Oli Ahmed:** Writing – review & editing, Investigation, Funding acquisition. **Laith Al-Shawaf:** Writing – review & editing, Investigation, Funding acquisition. **Seth Christopher Yaw Appiah:** Writing – review & editing, Investigation, Funding acquisition. **Rahkman Ardi:** Writing – review & editing, Investigation, Funding acquisition. **Uzma Azam:** Writing – review & editing, Investigation, Funding acquisition. **Zana Babakr:** Writing – review & editing, Investigation, Funding acquisition. **Einar Baldwin Baldursson:** Writing – review & editing, Investigation, Funding acquisition. **Sergiu Băltătescu:** Writing – review & editing, Investigation, Funding acquisition. **Tomasz Baran:** Software. **Konstantin Bochaver:** Writing – review & editing, Investigation, Funding acquisition. **Aidos Bolatov:** Writing – review & editing, Investigation, Funding acquisition. **Mario Bonato:** Writing – review & editing, Investigation, Funding acquisition. **Harshalini Y. Bundhoo:** Writing – review & editing, Investigation, Funding acquisition. **Trawin Chaleeraktragoon:** Writing – review & editing, Investigation, Funding acquisition. **Phatthanakit Chobthamkit:** Writing – review & editing, Investigation, Funding acquisition. **Richard G. Cowden:** Writing – review & editing, Investigation, Funding acquisition. **Victor Counted:** Writing – review & editing, Investigation, Funding acquisition. **Gisela de Clunie:** Writing – review & editing, Investigation, Funding acquisition. **Sonya Dragova-Koleva:** Writing – review & editing, Investigation, Funding acquisition. **Carla Sofia Esteves:** Writing – review & editing, Investigation, Funding acquisition. **Valdiney V. Gouveia:** Writing – review & editing, Investigation, Funding acquisition, Conceptualization. **Katherine Gundolf:** Writing – review & editing, Investigation, Funding acquisition. **Salima Hamouda:** Writing – review & editing, Investigation, Funding acquisition. **Carmen Haretche:** Writing – review & editing, Investigation, Funding acquisition. **Evelyn Hye Kyung Jeong:** Writing – review & editing, Investigation, Funding acquisition. **Dzintra Iliško:** Writing – review & editing, Investigation, Funding acquisition. **Najma Iqbal Malik:** Writing – review & editing, Investigation, Funding acquisition. **John Jamir Benzon Aruta:** Writing – review & editing, Investigation, Funding acquisition. **Fanli Jia:** Writing – review & editing, Investigation, Funding acquisition. **Veljko Jovanović:** Writing – review & editing, Investigation, Funding acquisition. **Tomislav Jukić:** Writing – review & editing, Investigation, Funding acquisition. **Doroteja Pavan Jukić:** Writing – review & editing, Investigation, Funding acquisition. **Shanmukh V. Kamble:** Writing – review & editing, Investigation, Funding acquisition. **Narine Khachatryan:** Writing – review & editing, Investigation, Funding acquisition. **Martina Klicperova-Baker:** Writing – review & editing, Investigation, Funding acquisition. **Christoph Kogler:** Writing – review & editing, Investigation, Funding acquisition. **Emil Knežević:** Writing – review & editing, Investigation, Funding acquisition. **Metodi Koralov:** Writing – review & editing, Investigation, Funding acquisition. **Monika Kovacs:** Writing – review & editing, Investigation, Funding acquisition. **Walaa Labib M. Eldesoki:** Writing – review & editing, Investigation, Funding acquisition. **Aitor Larzabal Fernandez:** Writing – review & editing, Investigation, Funding acquisition. **Kadi Liik:** Writing – review & editing, Investigation, Funding acquisition. **Sadia Malik:** Writing – review & editing, Investigation, Funding acquisition. **Karine Malysheva:** Writing – review & editing, Investigation, Funding acquisition. **John Maltby:** Writing – review & editing, Investigation, Funding acquisition. **Agim Mamuti:** Writing – review & editing, Investigation, Funding acquisition. **Jasmina Mangafic:** Writing – review & editing, Investigation, Funding acquisition. **Chanki Moon:** Writing – review & editing, Investigation, Funding acquisition. **Taciano Milfont:** Writing – review & editing, Investigation, Funding acquisition. **Stephan Muehlbacher:** Writing – review & editing, Investigation, Funding acquisition. **Reza Najafi:** Writing – review & editing, Investigation, Funding acquisition. **Emrah Özsoy:** Writing – review & editing, Investigation, Funding acquisition. **Joonha Park:** Writing – review &

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### Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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### Data availability statement

The manuscript is part of the project: COVID-19, Personality and Quality of life: Self-enhancement in the Time of the Pandemic (preregistered at: <https://osf.io/hpwbj/>). Datasets, codes, and **Supplementary Material**, can be found at [https://osf.io/m9atn/?view\\_only=8363457afcfe40fe93d6df2f5c2711b6](https://osf.io/m9atn/?view_only=8363457afcfe40fe93d6df2f5c2711b6).

### Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.jrp.2024.104542>.

### References

- Ahorsu, D. K., Lin, C. Y., Imani, V., Saffari, M., Griffiths, M. D., & Pakpour, A. H. (2022). The fear of COVID-19 scale: Development and initial validation. *International Journal of Mental Health and Addiction*, 20(3), 1537–1545. <https://doi.org/10.1007/s11469-020-00270-8>
- Baddeley, M. (2020). Hoarding in the age of COVID-19. *Journal of Behavioral Economics for Policy*, 4, 69–75.
- Bates, D., Mächler, M., Bolker, B., & Walker, S. (2015). Fitting linear mixed-effects models using lme4. *Journal of Statistical Software*, 67(1), 1–48. <https://10.18637/jss.v067.i01>
- Brislin, R. W. (1970). Back-translation for cross-cultural research. *Journal of Cross-Cultural Psychology*, 1(3), 185–216. <https://doi.org/10.1177/135910457000100301>
- Brown, T. A. (2015). *Confirmatory factor analysis for applied research*. Guilford Press.
- Brzóska, P., Žemojtel-Piotrowska, M., Piotrowski, J., Nowak, B., Jonason, P. K., Sedikides, C., Adamovic, M., Atitsogbe, K. A., Ahmed, O., Azam, U., Băltătescu, S., Bochaver, K., Bonato, M., Counted, V., Chaleerakrakoon, T., Ramos-Diaz, J., Dragova-Koleva, S., Eldesoki, W. L. M., Esteves, C. S., & Yahiaiev, I. (2024). Testing the underlying structure of unfounded beliefs about COVID-19 around the world. *Thinking & Reasoning*, 30(2), 301–326. <https://doi.org/10.1080/13546783.2023.2259539>
- Byrne, B. M. (1994). Structural equation modeling with EQS and EQS/Windows. Sage Publications.
- Carlson, E. N., Vazire, S., & Oltmanns, T. F. (2011). You probably think this paper's about you: Narcissists' perceptions of their personality and reputation. *Journal of Personality and Social Psychology*, 101(1), 185–201. <https://doi.org/10.1037/a002378>
- Cichocka, A., Marchlewska, M., & Briddlestone, M. (2022). Why do narcissists find conspiracy theories so appealing? *Current Opinion in Psychology*, 47, Article 101386. <https://doi.org/10.1016/j.copsyc.2022.101386>
- Dinic, B., & Bodroza, B. (2020). “My precious... toilet paper”: Stockpiling during the COVID-19 pandemic is related to selfishness, but not to fear. *Primenjena Psihologija*, 13(4), 489–504. <https://doi.org/10.19090/pp.20.4.489-504>
- Drury, J. (2018). The role of social identity processes in mass emergency behaviour: An integrative review. *European Review of Social Psychology*, 29(1), 38–81. <https://doi.org/10.1080/10463283.2018.1471948>
- Eker, I., Cichocka, A., & Cislak, A. (2022). Collective narcissism: How being narcissistic about your groups shapes politics, group processes and intergroup relations. In D. Osborne, & C. G. Sibley (Eds.), *The Cambridge handbook of political psychology* (pp. 214–227). Cambridge University Press. <https://doi.org/10.1017/9781108779104.015>
- Emmons, R. A. (1987). Narcissism: Theory and measurement. *Journal of Personality and Social Psychology*, 52(1), 11–17. <https://doi.org/10.1037/0022-3514.52.1.11>
- Federico, C. M., Golec de Zavala, A., & Baran, T. (2021). Collective narcissism, ingroup satisfaction, and solidarity in the face of COVID-19. *Social Psychological and Personality Science*, 12(6), 1071–1081. <https://doi.org/10.1177/1948550620963655>
- Fofana, N. K., Latif, F., Sarfraz, S., Bashir, M. F., & Komal, B. (2020). Fear and agony of the pandemic leading to stress and mental illness: An emerging crisis in the novel coronavirus (COVID-19) outbreak. *Psychiatry Research*, 291, Article 113230. <https://doi.org/10.1016/j.psychres.2020.113230>
- Galea, S., Merchant, R. M., & Lurie, N. (2020). The mental health consequences of COVID-19 and physical distancing: The need for prevention and early intervention. *JAMA Internal Medicine*, 180(6), 817–818. <https://doi.org/10.1001/jamainternmed.2020.1562>
- Gebauer, J. E., & Sedikides, C. (2018). Communal narcissism: Theoretical and empirical support. In A. D. Herman, A. B. Brunell, & J. D. Foster (Eds.), *Handbook of trait narcissism: Key advances, research methods, and controversies* (pp. 69–78). Springer. <https://doi.org/10.1007/978-3-319-92171-6-7>
- Gebauer, J. E., Sedikides, C., Verplanken, B., & Maio, G. R. (2012). Communal narcissism. *Journal of personality and social psychology*, 103(5), 854–878. <https://doi.org/10.1037/a0029629>
- Golec de Zavala, A. (2024). *The psychology of collective narcissism: Insights from social identity theory*. Routledge Press.
- Golec de Zavala, A., Cichocka, A., Eidelson, R., & Jayawickreme, N. (2009). Collective narcissism and its social consequences. *Journal of Personality and Social Psychology*, 97(6), 1074–1096. <https://doi.org/10.1037/a0016904>
- Golec de Zavala, A., & Lantos, D. (2020). Collective narcissism and its social consequences: The bad and the ugly. *Current Directions in Psychological Science*, 29(3), 273–278. <https://doi.org/10.1177/0963721420917703>
- Herman, A. D., Brunell, A. B., & Foster, J. D. (Eds.). (2018). *Handbook of trait narcissism: Key advances, research methods, and controversies*. Springer.
- Imhoff, R., & Lamberty, P. (2020). A bioweapon or a hoax?: The link between distinct conspiracy beliefs about the Coronavirus disease (COVID-19) outbreak and pandemic behavior. *Social Psychological and Personality Science*, 11(8), 1110–1118. <https://doi.org/10.1177/1948550620934692>
- Kachanoff, F. J., Bigman, Y. E., Kapsakis, K., & Gray, K. (2021). Measuring realistic and symbolic threats of COVID-19 and their unique impacts on well-being and adherence to public health behaviors. *Social Psychological and Personality Science*, 12(5), 603–616. <https://doi.org/10.1177/1948550620931634>
- Kazak, A. E. (2018). Editorial: Journal article reporting standards. *American Psychologist*, 73(1), 1–2. <https://doi.org/10.1037/amp0000263>
- Keppel, G. (1993). *Design and analysis: A researcher's handbook*. Pearson.
- Marchlewska, M., Cichocka, A., Jaworska, M., Golec de Zavala, A., & Bilewicz, M. (2020). Superficial ingroup love? Collective narcissism predicts ingroup image defense, outgroup prejudice, and lower ingroup loyalty. *British Journal of Social Psychology*, 59(4), 857–875. <https://doi.org/10.1111/bjso.12367>

- Nowak, B., Brzóska, P., Piotrowski, J., Sedikides, C., Žemojtel-Piotrowska, M., & Jonason, P. K. (2020). Adaptive and maladaptive behavior during the COVID-19 pandemic: The roles of Dark Triad traits, collective narcissism, and health beliefs. *Personality and Individual Differences*, 167, Article 110232. <https://doi.org/10.1016/j.paid.2020.110232>
- Pennycook, G., McPhetres, J., Bago, B., & Rand, D. G. (2022). Beliefs about COVID-19 in Canada, the United Kingdom, and the United States: A novel test of political polarization and motivated reasoning. *Personality and Social Psychology Bulletin*, 48 (5), 750–765. <https://doi.org/10.1177/01461672211023652>
- Raskin, R. N., & Hall, C. S. (1979). A narcissistic personality inventory. *Psychological Reports*, 45(2), 590. <https://doi.org/10.2466/pr0.1979.45.2.590>
- 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), 890–902. <https://doi.org/10.1037/0022-3514.54.5.890>
- Rusticus, S. A., & Lovato, C. Y. (2019). Impact of sample size and variability on the power and type I error rates of equivalence tests: A simulation study. *Practical Assessment, Research & Evaluation*, 19, Article 11. <https://doi.org/10.7275/4s9m-4e81>
- Rutkowski, L., & Svetina, D. (2004). Assessing the hypothesis of measurement invariance in the context of large-scale international surveys. *Educational and Psychological Measurement*, 74(1), 31–57. <https://doi.org/10.1177/0013164413498257>
- Sawicki, A. J., Žemojtel-Piotrowska, M., Balcerowska, J. M., Sawicka, M. J., Piotrowski, J., Sedikides, C., Sawicki, A. J., Žemojtel-Piotrowska, M., Balcerowska, J. M., Sawicka, M. J., Piotrowski, J., Sedikides, C., Jonason, P. K., Malby, J., Adamovic, M., Agada, A. M. D., Ahmed, O., Al-Shawaf, L., Appiah, S. C. Y., Ardi, R., Babakr, Z. H., Bălătescu, S., Bonato, M., Cowden, R. G., Chobthamkit, P., & Zand, S. (2022). The fear of COVID-19 scale: Its structure and measurement invariance across 48 countries. *Psychological Assessment*, 34(3), 294–310. <https://doi.org/10.1037/pas0001102>
- Sedikides, C. (2021). In search of Narcissus. *Trends in Cognitive Sciences*, 25(1), 67–80. <https://doi.org/10.1016/j.tics.2020.10.010>
- Sedikides, C., Rudich, E. A., Gregg, A. P., Kumashiro, M., & Rusbult, C. (2004). Are normal narcissists psychologically healthy? Self-esteem matters. *Journal of Personality and Social Psychology*, 87(3), 400–416. <https://doi.org/10.1037/0022-3514.87.3.400>
- Short, M. E., Goetzel, R. Z., Pei, X., Tabrizi, M. J., Ozminkowski, R. J., Gibson, T. B., Dejoy, D. M., & Wilson, M. G. (2009). How accurate are self-reports? Analysis of self-reported health care utilization and absence when compared with administrative data. *Journal of Occupational and Environmental Medicine*, 51(7), 786–796. <https://doi.org/10.1097/JOM.0b013e3181a86671>
- Skowronski, J. J., Walker, W. R., Henderson, D. X., & Bond, G. D. (2014). The fading affect bias: Its history, its implications, and its future. *Advances in Experimental Social Psychology*, 49, 163–218. <https://doi.org/10.1016/B978-0-12-800052-6.00003-2>
- Snijders, T. A. (2005). Power and sample size in multilevel modeling. *Encyclopedia of statistics in behavioral science*, 3(157), 1573.
- Sternisko, A., Cichocka, A., Cisłak, A., & Van Bavel, J. J. (2023). National narcissism predicts the belief in and the dissemination of conspiracy theories during the COVID-19 pandemic: Evidence from 56 countries. *Personality and Social Psychological Bulletin*, 49(1), 48–65. <https://doi.org/10.1177/01461672211054947>
- Yuan, K. H., & Bentler, P. M. (2000). Three likelihood-based methods for mean and covariance structure analysis with nonnormal missing data. *Sociological Methodology*, 30(1), 165–200. <https://doi.org/10.1111/0081-1750.00078>
- Žemojtel-Piotrowska, M., Piotrowski, J., Sawicki, A., & Jonason, P. K. (2021). We will rescue Italy, but we dislike the European Union: Collective narcissism and the COVID-19 threat. *Group Processes & Intergroup Relations*, 25(4), 892–901. <https://doi.org/10.1177/13684302211002923>
- Žemojtel-Piotrowska, M., Piotrowski, J., Sedikides, C., Sawicki, A., Czarna, A. Z., Fatfouta, R., & Baran, T. (2021). Communal collective narcissism. *Journal of Personality*, 89(5), 1062–1080. <https://doi.org/10.1111/jopy.12636>
- Žemojtel-Piotrowska, M., Piotrowski, J., & Sedikides, C. (2023). Communal collective narcissism and agentic collective narcissism. In P. K. Jonason (Ed.), *Shining light on the dark side of personality: Measurement properties and theoretical advances* (pp. 63–74). Hogrefe.