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The Peaks and Valleys of Narcissism: The Factor Structure of Narcissistic States and Their Relations to Trait Measures

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Although interindividual differences in narcissism are well studied, little is known about assessing narcissism at the within-person level. To fill this research gap, we investigated whether the narcissism construct is represented in the same way at the between- and within-person levels. We analyzed four established narcissism measures across multiple studies. In each of the studies, participants completed narcissism measures in ecological momentary assessment or daily diary studies. Equivalent construct representation across between- and within-person narcissism (i.e., cross-level measurement invariance) was found. State narcissism measures showed convergent validities for the trait narcissism scales. Moreover, we also found that antagonistic narcissism was most strongly related to within-person variability in narcissism. Our investigation sheds new light on the structure and assessment of narcissism on the within-person level by providing a comprehensive examination of its measurement.

Public Significance Statement
This article investigates the within-person psychometric properties of the different measures of state narcissism. We report on factorial structure, cross-level invariance, convergent validity, and relations to narcissistic states and their variability.

Keywords: narcissism, assessment, within-person, variability

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Radosław Rogoza and Georg Krammer share first authorship of this publication and contributed equally to this article.

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Structure of Trait Narcissism

The key characteristic of trait narcissism is an entitled sense of self-importance (Krizan & Herlache, 2018). Narcissism is a hierarchical construct with two dimensions, which can be further decomposed into three separate facets (Miller et al., 2021). The existing literature frequently refers to the dimensions as grandiose and vulnerable narcissism (Krizan & Herlache, 2018). Grandiose narcissism reflects an inflated self-image associated with beliefs of superiority, while vulnerable narcissism refers to an excessive preoccupation about being hurt by others, associated with unrealistic expectations toward others and hostile attitudes (Miller et al., 2018). The facets of narcissism,[1] referred to as agentic (i.e., self-promoting self-enhancement), antagonistic (i.e., reactive and hostile self-defense), and neurotic (i.e., hypersensitivity and social withdrawal), are located at the lower level of the hierarchy (Miller et al., 2021). While agentic and neurotic facets are specific markers of grandiose and vulnerable narcissism, respectively, the antagonistic facet is central in the narcissism structure and is common to both superordinate dimensions (Ackerman et al., 2019; Back, 2018; Krizan & Herlache, 2018; Miller et al., 2016; Rogoza et al., 2019, 2022; Wright & Edershile, 2018).

While the dimensions of grandiose and vulnerable narcissism are usually uncorrelated to one another in the general population (Jauk et al., 2022; Kałowski et al., 2021), clinicians frequently note that it is possible to temporarily switch (i.e., fluctuate) from grandiose to vulnerable narcissism states (Gore & Widiger, 2016; Oltmanns & Widiger, 2018). Existing empirical studies continue assessing fluctuations from grandiosity to vulnerability (Edershile & Wright, 2021), however, disentangling facets of narcissism (agentic, antagonistic, and neurotic) might provide a more nuanced view on this fluctuation process (Miller et al., 2021). In fact, agentic and neurotic narcissism are both positively related to antagonistic narcissism (M. L. Crowe et al., 2019; Krizan & Herlache, 2018). The role of antagonistic narcissism is further emphasized by the fact that within the structural organization of narcissistic personality, antagonistic narcissism acts like a bridge connecting agentic and neurotic narcissism (Di Pierro et al., 2023; Rogoza et al., 2022). Thus, adoption of the facet approach might offer additional insights in understanding the process of fluctuations in narcissism. To understand such processes, it is necessary to adopt a more dynamic perspective by examining how narcissistic states may vary within individuals (Mielniczuk et al., 2023). Although narcissism is usually measured as a relatively stable construct (Chopik & Grimm, 2019), a large body of evidence suggests within-person variability in narcissism states (Gore & Widiger, 2016; Pincus et al., 2014). For instance, clinically oriented conceptualizations of narcissism stress that vulnerable states in seemingly grandiose presentations (but not vice versa) are one of the defining features of pathological narcissism (Edershile & Wright, 2022; Gore & Widiger, 2016; Jauk et al., 2022; Kealy & Rasmussen, 2012; Oltmanns & Widiger, 2018; Pincus & Lukowitsky, 2010; E. F. Ronningstam, 2005). Although research on trait narcissism reached a broad consensus on its structure (Miller et al., 2021), research on state narcissism still operates on dimensions (i.e., grandiose vs. vulnerable narcissism) rather than facets (i.e., agentic, antagonistic, and neurotic). Moreover, while there are comprehensive psychometric evaluations of trait narcissism measures (e.g., Wetzel et al., 2021), similar evaluations of state narcissism measures are rare (for an exception, see, e.g., Edershile et al., 2019). A central and thus far unanswered question is whether the three-factor model (i.e., agentic, neurotic, and antagonistic facets of narcissism) found in research on trait narcissism (M. L. Crowe et al., 2019; Miller et al., 2021; Rogoza et al., 2022) would reproduce at the state level. This uncertainty in assessing state narcissism severely impairs research on the dynamic aspects of narcissism (e.g., variability and fluctuations in narcissistic states). With the preceding issues in mind, the goal of the current work was to apply the facet approach to state narcissism as well as to scrutinize the psychometric properties of different state narcissism measures.

The Dynamics of State Narcissism

Back (2018) proposed a within-person self-regulatory dynamic model of narcissism presented in Figure 1. It assumes that a process of shifts in narcissism (i.e., between narcissistic states) may occur not necessarily on the dimension level (i.e., from grandiose to vulnerable narcissism) but mainly on the facet level of narcissism (i.e., from agentic, through antagonistic, to neurotic narcissism). In this sense, agentic narcissism would be the "default mode," focused on self-promotion (Wetzel et al., 2016). This default mode assumes that *if* one is receiving admiration, the goal of maintaining a grandiose self is fulfilled, and no change in narcissistic states occurs (Back et al., 2013). However, when facing ego or status threats, a switch to an antagonistic mode focused on self-defense may occur (Gignac & Zajenkowski, 2021; Grapsas et al., 2020). This mode aims to restore narcissistic esteem through derogation, arrogance, and/or aggressiveness (Back et al., 2013). If this mode fails to restore narcissistic esteem, a shift to a neurotic narcissism mode may occur (Back, 2018). This mode can be seen as an "exit strategy," in which the individual uses self-devaluation as self-protection (cf. Ackerman et al., 2019; Back, 2018). Existing research on trait narcissism partially supports this model by reporting that antagonistic narcissism plays a central role in the structure of narcissism (Rogoza et al., 2022). In other words, antagonistic narcissism mediates the relations occurring between agentic and neurotic narcissism. Thus, according to this theoretical model, antagonistic narcissism should also be the strongest correlate of variability in narcissism. However, to date, this assumption has not been examined empirically.

[1] Although Miller et al. (2021) use the term "factor" to describe agentic, antagonistic, and neurotic narcissism, we argue that "facet "better captures their nature. While all facets are specific domains of narcissism, none of them alone should be equated as narcissism per se (Krizan & Herlache, 2018).

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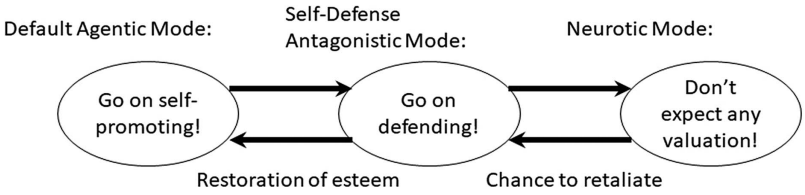
Figure 1

Back's (2018) Within-Person Self-Regulatory Dynamics Model of Narcissism



Measuring State Narcissism

Most research conceptualized narcissism as a trait and assessed the between-person structure of existing trait narcissism measures (Wetzel et al., 2021). While this approach can be regarded as successful in realizing its goals, it cannot be assumed that the results hold for state narcissism. In fact, research on state narcissism is still largely focused on the two dimensions of narcissism (Edershile & Wright, 2021), even though the facet structure of trait narcissism is well known (Miller et al., 2021). However, a challenge for researchers assessing state narcissism is that psychometric investigations of state narcissism scales are limited, as narcissistic states are mostly interpreted in terms of dimensions, not facets (Edershile et al., 2019). While studies focusing on the dynamics and consequences of state narcissism are flourishing (Di Pierro et al., 2022; Di Sarno et al., 2020; Giacomin & Jordan, 2016; Mota et al., 2023; Rentzsch et al., 2021), most of these studies did not aim at evaluating the psychometric properties of state narcissism measures. Hence, insights into the theory of narcissism dynamics may not be substantial but driven by issues of measurement.

So far, only Edershile et al. (2019) have investigated the psychometric properties of state narcissism measures in ecological momentary assessment (EMA) research. Across three studies, multilevel exploratory factor analysis provided evidence for a within- and between-person two-factor structure of the *Narcissistic Grandiosity and Vulnerability Scales* (NGS and NVS, respectively; M. Crowe et al., 2016, 2018). The reported results show that state NGS was most strongly positively correlated to positive affectivity, dominance, and self-esteem; state NVS was negatively related to positive affectivity, warmth, and self-esteem, congruent with conclusions regarding trait narcissism (e.g., Grove et al., 2019; Mota et al., 2020). Although these findings contributed to the evaluation of state narcissism measures, they were limited in three fundamental ways. First, although antagonistic narcissism plays a pivotal role in the structure of trait narcissism (Miller et al., 2021), Edershile et al. (2019) did not investigate the antagonistic facet of narcissism. Second, to date, no cross-level equivalence across between- and within-person structure of narcissism has been reported. Demonstration of invariant cross-level structure would facilitate transferring knowledge from the literature on trait narcissism to the state level, allowing to evaluate whether switching between narcissistic states makes sense. Finally, the adopted approach was exploratory in nature, though the existing literature now allows for the adoption of a confirmatory approach (Miller et al., 2021; Wetzel et al., 2021). Within the current research, we attempted to address these limitations.

The Current Research

As changes in narcissistic states occur more dynamically (Back, 2018; Gore & Widiger, 2016), within the current work, we focus on moment-to-moment and day-to-day changes, not necessarily on the long-term development of narcissism. The goal of the current research was to provide a comprehensive evaluation of state narcissism measures: the six- and four-item variants of the NGS and NVS (M. Crowe et al., 2016, 2018; Edershile et al., 2019), the *Super-Brief Pathological Narcissism Inventory* (SB-PNI; Pincus et al., 2009; Schoenleber et al., 2015), and the *Five-Factor Narcissism Inventory–Super Short Form* (FFNI-SSF; Packer West et al., 2021). For this purpose, we used a multilevel structural equation modeling approach (Lüdtke et al., 2007; Muthén & Satorra, 1995) to model the between-person and within-person structure of state narcissism across four studies. In each study, state narcissism was either assessed on a daily basis or using EMA. We test the same hypotheses outlined below across all studies. A summary of all tested hypotheses is presented in Table 1. We provide Open Data and Open Code for each study at https://osf.io/juq8v/.

First, we aimed to replicate the previous findings on the structure of trait narcissism. We hypothesized that NGS and NVS (Hypothesis 1.1)[2] and PNI (Hypothesis 1.2) would be best described by two-factor models (agentic and neurotic; grandiose and vulnerable, respectively) at the between-person level. Although this has not been previously tested, we further hypothesized a three-factor model for the FFNI at the between-person level, as this measure is intended to capture all facets of narcissism (Hypothesis 1.3; i.e., agentic, antagonistic, and neurotic). Second, we hypothesized equality of factor structure (Hypothesis 2.1) and equality of factor loadings (Hypothesis 2.2) across between-person and within-person narcissism (i.e., cross-level measurement invariance: Jak, 2019; Stapleton et al., 2016). That is, we expected to find that the models tested between-person will be as well found and be invariant with the models tested at the within-person level. We based these hypotheses on the notion that even though between-person comparisons have driven the majority of empirical evidence on narcissism, the theoretical underpinning should not be limited to between-person comparisons. Along this line, the exploratory findings of Edershile et al. (2019) on narcissism on the within-person level closely resembled what is now established on the between-person level. Demonstration of cross-level invariance is also crucial in terms of supporting the existing theoretical models of within-person narcissism and

[2] We refer to NVS and NGS ratings as assessments of the neurotic and agentic facet. In fact, despite their names, the two scales mostly measure neurotic- and agentic-related content, with lower relations to antagonistic narcissism (M. L. Crowe et al., 2019; Wright & Edershile, 2018).

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Table 1
Summary of the Formulated Hypotheses

No.	Hypothesis
Hypothesis 1	Between-person factorial structure of narcissism states
Hypothesis 1.1	A two-factor model for NVS and NGS
Hypothesis 1.2	A two-factor model for PNI
Hypothesis 1.3	A three-factor model for FFNI
Hypothesis 2	Cross-level invariance
Hypothesis 2.1	Equal factor structures across between- and within-person levels for all measures
Hypothesis 2.2	Equal factor loadings across between- and within-person levels for all measures
Hypothesis 3	Convergent validity
Hypothesis 3.1	A positive relation between trait narcissism to respective state narcissism
Hypothesis 3.2	A positive relation between trait and state antagonistic narcissism to state agentic/neurotic narcissism
Hypothesis 4	Variability in narcissism states
Hypothesis 4.1	A positive relation between trait antagonistic narcissism and variability in states of agentic/antagonistic/neurotic narcissism
Hypothesis 4.2	A positive relation between trait agentic narcissism and variability in states of antagonistic narcissism

Note. NVS = Narcissistic Vulnerability Scales; NGS = Narcissistic Grandiosity Scales; PNI = Pathological Narcissism Inventory; FFNI = Five-Factor Narcissism Inventory.

understanding the fluctuations in narcissism (Back, 2018; Gore & Widiger, 2016; Pincus et al., 2014). That is, successful verification of the same factorial structure on the between- and within-person level would not only allow to apply the knowledge of trait narcissism to state narcissism, but it would also provide evidence of the complex and dynamic interplay between state and trait expressions of narcissism.

Third, we hypothesized that the self-reported trait narcissism scores (i.e., assessed with conventional trait questionnaires) would be positively related to the respective state narcissism scores (Hypothesis 3.1). For instance, we expected that trait neurotic or grandiose narcissism would be positively related to state neurotic or grandiose narcissism, respectively. This hypothesis is based on the prior studies (Mota et al., 2023) and the notion that a trait can be considered the mean of its states (Fleeson & Gallagher, 2009). Moreover, given the central role of antagonistic narcissism within the structure of narcissistic personality (Di Pierro et al., 2023; Rogoza et al., 2022), we expected trait and state antagonistic narcissism to be positively related to both trait and state agentic and neurotic narcissism (Hypothesis 3.2).

After the psychometric evaluation of the factorial structure of state narcissism, we examined whether antagonistic narcissism also aligns with the predictions of the within-person self-regulatory model of narcissism, which describes antagonistic narcissism as a reactive strategy (Back, 2018). In particular, we hypothesized that trait antagonistic narcissism would be related to the within-person variability of state agentic, antagonistic, and state neurotic narcissism (Hypothesis 4.1). Also, given that agentic narcissism is expected to precipitate into an antagonistic mode under certain circumstances (Back, 2018; Back et al., 2013), we expected trait agentic narcissism to be positively related to the variability in state antagonistic narcissism (Hypothesis 4.2).

Method

Procedure

Study 1

The psychometric assessment battery was administered online and included different measures of personality and psychological adjustment. The EMA was performed on an in-house smartphone application. Participants received time-based prompts six times a day for a period of 14 days. Prompts were delivered in a 12-hr window starting either at 8, 9, or 10 a.m. (depending on participants' preferences). On average, participants received a prompt every 2 hr. The exact time interval was jittered to prevent predictability. Participants received a phone call from a research assistant after the first days of the study to ensure study fidelity. Participants took part in a larger research project on narcissism (Self and Interpersonal Study of Narcissism; SINA; see also Hildebrandt et al., 2021; Jauk et al., in press), were prescreened for grandiose and vulnerable narcissism, and selected to maximize variance in these traits in the study sample. The procedure was approved by the ethics committee of the Technische Universität Dresden (EK 133042018).

Study 2

The survey consisted of an initial assessment and brief daily diary assessments on ten consecutive days. Participants provided their email addresses to receive daily invitations, including the daily diary assessment links. They were instructed to complete the daily assessments each evening. In case they forgot to fill in an assessment, they were reminded via email on the same day. The procedure was approved by the ethics committee of the University of Graz (39/74/63 ex 2017/2018).

Study 3a and Study 3b

Study 3a and Study 3b were part of one overarching data collection, wherein different narcissism measures (i.e., SB-PNI and FFNI-SSF) were administered. This data collection was consequently parsed into Study 3a and Study 3b. Overall, the study comprised two stages of trait and state measurement. After providing informed consent, participants completed an online set of measures as a part of a more extensive study protocol. After completing this trait report, each participant received within 48 hr an individual invitation to take part in the state measurement part of the study through the smartphone application. Precisely at 6 p.m., participants received a notification inviting them to complete the daily set of state measures. The procedure was approved by the ethics committee of the Cardinal Stefan Wyszyński University in Warsaw [decision number 02/2021].

Participants

Study 1

The data set comprised $N = 169$ German-speaking respondents (85 female, 84 male) aged between 18 and 57 years ($M = 25.71$; $SD = 6.60$) who provided on average 64.08 responses each ($SD = 13.92$; range: 21–83), yielding a total of 10,830 observations over 14 days. The sample was a community sample of individuals (oversampled for grandiose and vulnerable narcissism; see below)

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with various backgrounds and professions. Most participants (90%) had at least a high school education or a similar professional education (educational information was unavailable for 7.70%). Participants received monetary compensation of € 120 for taking part in the study. Data of one participant from an initial sample of 170 participants could not be analyzed because EMA data were missing. Trait data were missing in one case, but this individual was kept in the main analyses.

Study 2

The data set comprised $N = 108$ (41 female, 66 male, one diverse) English-speaking respondents aged between 19 and 71 years ($M = 35.83$; $SD = 10.61$). Each participant provided 10 responses, yielding 1,080 in total. Participants were recruited via Amazon's Mechanical Turk. The majority were residents of the United States (89%). All participants had at least a high school education or a similar professional education, and approximately half of them had completed a bachelor's degree (54%). Participants received monetary compensation of approximately € 7.5 for the full completion of the study. We excluded 40 participants from an initial sample of 148 individuals to obtain this final sample. Of those 40 excluded participants, 16 failed on at least one of two attention check items, and 32 had a native language other than English (excluding those increases data quality in online research; Buhrmester et al., 2011; Feitosa et al., 2015).

Study 3a and Study 3b

The sample comprised $N = 176$ Polish-speaking volunteer participants aged 18–61 years ($M = 28.47$; $SD = 9.42$; 84% females; one diverse). Most participants declared secondary (66.5%) or higher (33%) levels of education. On average, these participants responded 22.37 times ($SD = 4.76$; range 6–28) for Study 3a and 22.59 times ($SD = 4.62$; range: 7–28) for Study 3b. This yielded 3,937 responses for Study 3a and 3,979 for Study 3b. A more detailed description of the sample is provided in Rogoza et al. (in press). Each participant was remunerated with a voucher of approximately € 7.5 upon completion of at least 60% of daily measurements. Participants who provided at least 80% of responses were also entered into a draw of six vouchers worth approximately € 110.

Materials

Study 1

To assess state agentic and neurotic narcissism, participants completed German six-item variants of the NGS and NVS (M. Crowe et al., 2016, 2018; Rosenthal et al., 2020). The items of both scales were presented intermixed. Participants responded with a horizontal slider (visual analog scale) with values ranging from 0 to 100. For the trait assessment of narcissism, participants completed the full length FFNI (Glover et al., 2012; German version by Jauk et al., 2023). Participants were asked to rate their agreement with all statements using 5-point Likert-type scale ranging from 1 = *disagree strongly* to 5 = *agree strongly*. Using the revised scoring (Rogoza et al., 2021), the trait assessment was scored to yield agentic (40 items; α = .94), antagonistic (39 items; α = .92), and neurotic narcissism (40 items; α = .95).

Study 2

We assessed state agentic and neurotic narcissism using the NGS (16 items) and NVS (11 items). Participants rated both constructs on a 7-point scale. We selected those four adjectives for each scale that have previously been used by Edershile and Wright (2021; NGS: Brilliant, Glorious, Powerful, Prestigious; NVS: Ignored, Resentful, Misunderstood, Underappreciated). For the trait assessment of narcissism, participants completed the full length FFNI (Glover et al., 2012) using the same response scale and scoring as in Study 1. The trait assessment was scored to yield agentic (40 items; α = .95), antagonistic (39 items; α = .94), and neurotic narcissism (40 items; α = .94).

Study 3a and 3b

In Study 3a, we measured state grandiose and vulnerable narcissism with the SB-PNI, which comprises 12 items on which participants respond on a 6-point scale (Pincus et al., 2009; Schoenleber et al., 2015). For Study 3b, we used the FFNI-SSF (Packer West et al., 2021), which comprises 15 items, each referencing the subscales of the FFNI (Glover et al., 2012). Participants responded on a 5-point scale. As trait measures, we used in Study 3a the regular PNI (Pincus et al., 2009; Polish translation: Rutkowska et al., 2019). Participants rated the degree of similarity of each of the 52 statements using a 6-point scale. Items were averaged to create indices of grandiose (18 items; α = .89) and vulnerable narcissism (34 items; α = .96; Wright et al., 2010). In Study 3b, we used the FFNI-SF (Sherman et al., 2015; Polish adaptation: Rogoza et al., 2021), on which participants rated their agreement with 60 statements using a 5-point Likert-type scale and scoring as in the previous studies. Items were averaged to create indices for three facets of narcissism: agentic (16 items; α = .91), neurotic (16 items; α = .89), and antagonistic (16 items; α = .89).

Statistical Analyses

In all studies, data were collected in a repeated-measures design over several days. This resulted in a two-level data structure. Level 1 represents the responses of all participants across all days. These responses are nested in the respective participants on Level 2. In this nomenclature, Level 1 corresponds to the within-person level, and Level 2 corresponds to the between-person level. Given such a two-level data structure, we analyzed the data with multilevel structural equation models (Lüdtke et al., 2007; Mehta & Neale, 2005; B. O. Muthén & Satorra, 1995). These models can account for multiple levels of data within one structural equation model and also allow comparisons between the levels (e.g., cross-level measurement invariance: Jak, 2019; Stapleton et al., 2016).

We first tested whether state narcissism measures exhibited the expected factor structure on the between-person level (Hypothesis 1). To this end, we modeled the expected factor structure on the between-person level. At the same time, we assumed no latent factors on the within-person level and allowed free estimation of all possible covariances on the within-person level. Doing so allowed us to test the factor structure on the between-person level without the interference of the within-person level because, in such models, any model misfit can only stem from the between-person level. In

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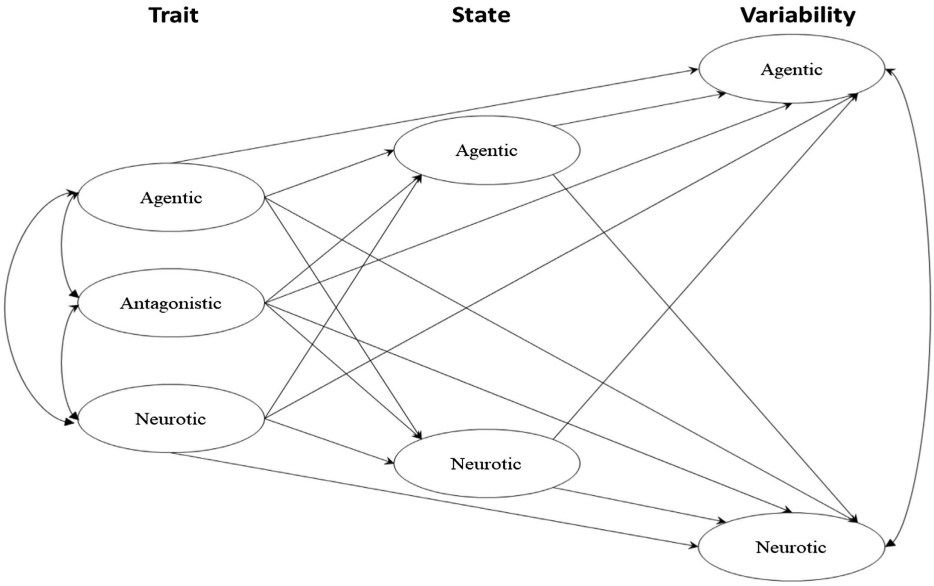
Figure 2
Conceptual Model Analyzed in Studies 1 and 2



Note. This model corresponds to the Narcissistic Grandiosity and Vulnerability Scales.

the next step, we tested whether the within-person level factor structure corresponded to the between-person level factor structure (Hypothesis 2.1). We extended the prior model to reflect the latent structure of the between-person level on the within-person level. Then, we tested the equality of factor loadings across the two levels (Hypothesis 2.2). To this end, we added to the prior model cross-level equality constraints on the factor loadings.

We assessed model fit using RMSEA, CFI, and SRMR (which is reported for both levels as in contrast to RMSEA and CFI, it is not driven by the overall model fit and its χ^2-statistic). To interpret fit indices, we relied on the following recommended guidelines: CFI >.90; RMSEA <.08; and SRMR <.10 (Byrne, 2010; Schermelleh-Engel et al., 2003). Please note, however, that these cutoffs were originally developed and validated for nonnested (vs. multilevel) factorial models. Thus, we used these cutoffs as general suggestions and interpreted the results with caution. We also inspected the χ^2-statistic but refrained from emphasizing their p values due to the extensive number of data points used in our multilevel structural equation models (Study 1: 10,830 data points; Study 2: 1,080; Study 3a: 3,979; Study 3b: 3,937). For model comparison, we relied on the $\Delta\chi^2$-statistic and an assumed equal model fit with $p > .05$. Please note that we do not report the $\Delta\chi^2$-statistic when introducing the latent factor structure on the within-person level (cf. Hypothesis 2.1). This was due to the fact that this corresponds to a comparison to a saturated model (i.e., all covariances free) and would therefore be too strict.

Next, we analyzed the correlations between trait and state narcissism measures (Hypothesis 3), and the relation between trait narcissism and variability in state narcissism (conceptualized as participant's standard deviation across all responses; Hypothesis 4). For this purpose, we used the dynamic structural equation modeling approach (DSEM; Asparouhov et al., 2018; McNeish, 2021), which integrates features of multilevel models (e.g., adjusting for time and different numbers of observations per participant) within the structural equation modeling framework. For each study, we tested a separate DSEM model in which trait narcissism predicted both state narcissism and its variability. The models also evaluated the within-person associations in state narcissism included in each model. Furthermore, these models allowed to control for the corresponding state narcissism scale when investigating if its variability was predicted by trait narcissism scores: This is an important adjustment to be made, since the estimates of person variability and person mean are usually artificially correlated and therefore—redundant (Baird et al., 2006; Wendt et al., 2020). For this reason, when investigating the link between trait narcissism and indices of variability, we controlled for the state narcissism. Note that the advantage of the DSEM as compared to computing a person mean score is that state narcissism scales were modeled out of the within-person data, accounting for the different numbers of observations per participant and adjusting for time. The conceptual diagram of the model analyzed for Studies 1 and 2 is presented in Figure 2, the model analyzed in Study 3a is presented in Figure 3, and the model analyzed in Study 3b is presented in Figure 4. Thus, the paths from trait narcissism to state narcissism answer Hypothesis 3, while the paths from trait narcissism to variability in state narcissism (controlling for state narcissism) answer Hypothesis 4. Analyses regarding Hypotheses 1 and 2 were performed in R with the *lavaan* package (R Core Team, 2021; Rosseel, 2012) using a maximum likelihood estimator with robust standard errors (MLR),[3] while the analyses regarding Hypotheses 3 and 4 were conducted in Mplus v. 8.3 using

[3] Prior inspection of the item distributions indicated a partial lack of normality (skewness and kurtosis >|1|; cf. supplement at OSF) due to unbalanced data (Yuan & Bentler, 1998). The used estimator has been shown to perform well for multilevel structural equation models under similar conditions (Hox et al., 2010).

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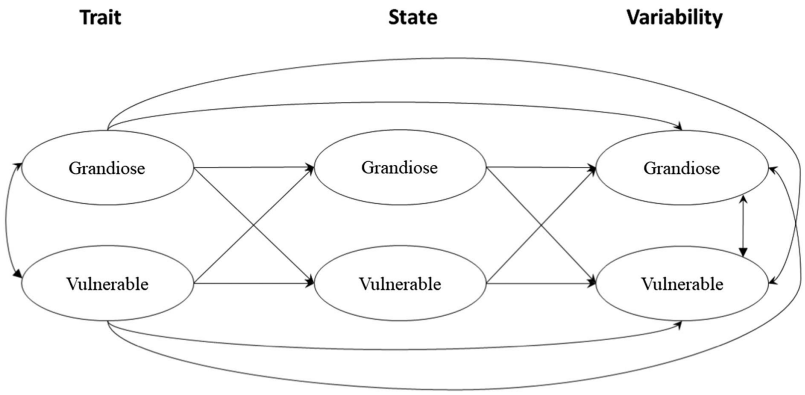
Figure 3
Conceptual Model Analyzed in Study 3a



Note. This model corresponds to the Pathological Narcissism Inventory.

the Bayes estimator (McNeish & Hamaker, 2020; L. K. Muthén & Muthén, 2017).

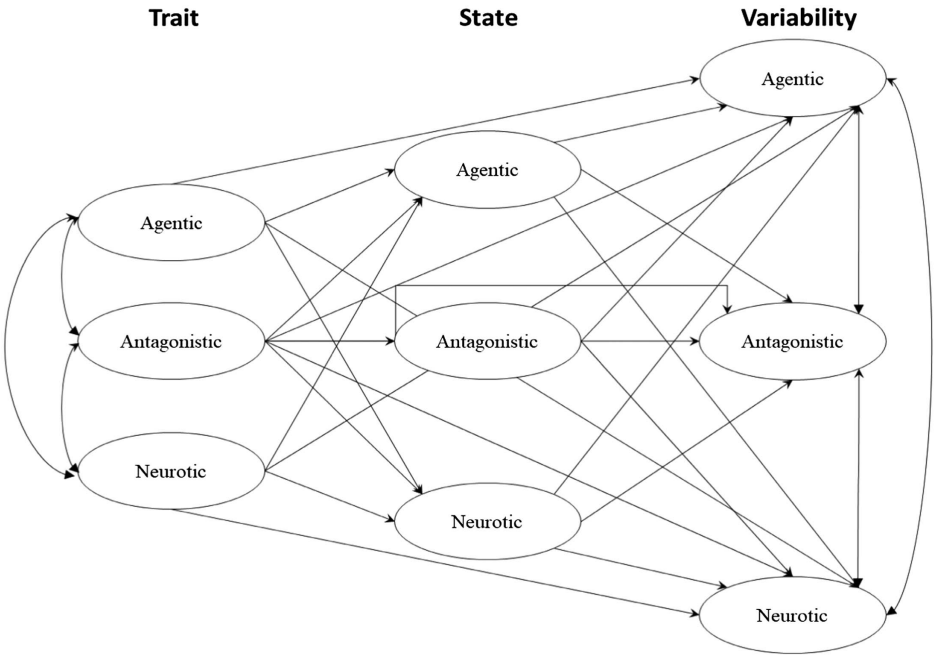
Results

Factor Structure on the Between-Person Level (Hypothesis 1) and Cross-Level Measurement Invariance (Hypotheses 2.1 and 2.2)

Study 1 (Six-Item NGS and NVS EMA Study)

All model fit indices are provided in Table 2 (see Table S1 in the additional online material at https://osf.io/juq8v/ for all descriptive statistics on the item level). Model No. 1 showed an acceptable fit. However, closer inspection revealed that the χ^2 statistic could be improved notably by allowing two residual covariances within agentic narcissism on the between-person level, $\Delta\chi^2(2) = 52.180$, $p < .001$; partial support for Hypothesis 1. The residual covariances were between the items (a) *acclaimed* and *glorious* as well as between (b) *prestigious* and *prominent*. Mirroring the latent factor structure of the between-person level to the within-person level (Model No. 3) resulted in a good model fit (supporting Hypothesis 2.1). Next, we introduced the equality constraints on the factor loadings across the levels (Model No. 4). This model fitted worse than its predecessor, $\Delta\chi^2(10) = 20.84$, $p = .022$. Releasing the equality constraints for

Figure 4
Conceptual Model Analyzed in Study 3b



Note. This model corresponds to the Five-Factor Narcissism Inventory. The square line represents the direct connection from trait antagonistic narcissism to variability in antagonistic narcissism states.

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Table 2
Model Fit and Model Comparison of the Multilevel Structural Equation Models for the NVS and NGS (Study 1)

	Model fit							Model comparison			
No.	χ^2	*df*	*p*	RMSEA	CFI	SRMR-within	SRMR-between	versus	Δ*df*	$\Delta\chi^2$	$p(\Delta\chi^2)$
1	208.03	53	<.001	.020	.994	.004	.063				
2	100.88	51	<.001	.011	.998	.003	.057	1	2	52.18	<.001
3	789.91	102	<.001	.036	.964	.042	.067				
4	782.89	112	<.001	.035	.963	.042	.076	3	10	20.84	.022
5	**769.25**	**111**	**<.001**	**.034**	**.964**	**.042**	**.066**	**3**	**9**	**7.15**	**.621**

Note. The final model is bold. NVS = Narcissistic Vulnerability Scales; NGS = Narcissistic Grandiosity Scales. Model No. 1: two-factor model on the between-person level, all covariances freely estimated on the within-person level with no latent variables. Model No. 2: Model No. 1, plus two residual covariances on the between-person level. Model No. 3: Model No. 2, plus the between-person level structural model on the within-person level. Model No. 4: Model No. 3, plus constraining factor loadings to be equal across the levels. Model No. 5: Model No. 4, with relaxing the equality constraint of one-factor loadings. RMSEA = root-mean-square error of approximation; CFI = comparative fit index; SRMR = standardized root-mean-squared residual.

one item of the neurotic narcissism (i.e., *ignored*) facet resulted in similar model fit, $\Delta\chi^2(9) = 7.15$, $p = .621$; Model No. 5. Thus, the results yield equal factor loadings across levels for agentic narcissism (supporting Hypothesis 2.2), and partially equal factor loadings across levels for neurotic narcissism (partially supporting Hypothesis 2.2).

Study 2 (Four-Item NGS and NVS Daily Diary Study)

All model fit indices are given in Table 3 (see Table S2 in additional online material, for all descriptive statistics on the item level). Model No. 1 showed good model fit (supporting Hypothesis 1). Mirroring the latent factor structure of the between-person level to the within-person level (Model No. 2) resulted in a good model fit (supporting Hypothesis 2.1). Next, we introduced the equality constraints on the factor loadings across the levels (Model No. 3). This model with weak cross-level measurement invariance fitted worse than its predecessor, $\Delta\chi^2(6) = 17.34$, $p = .008$. Releasing the equality constraints for the *prestigious* item resulted in no worse model fit, $\Delta\chi^2(5) = 5.99$, $p = .307$; Model No. 4. Thus, the analyses yield partially equal factor loadings across levels for agentic narcissism (partially supporting Hypothesis 2.2), and equal factor loadings for neurotic narcissism (supporting Hypothesis 2.2).

Study 3a (SB-PNI Daily Diary Study)

All model fit indices are given in Table 4 (see Table S3 in additional online material, for all descriptive statistics on the item level). Model No. 1 did not fit well on the between-person level (SRMR = .124). Adding one residual covariance (Model No. 2) improved the model fit notably, $\Delta\chi^2(1) = 18.58$, $p < .001$; partial support for Hypothesis 1. The residual covariance was between the two items measuring the dimension of self-sacrificing self-enhancement (items PNI1 and PNI7). Mirroring the latent factor structure of the between-person level to the within-person level (Model No. 3) resulted in a good model fit (supporting Hypothesis 2.1). Last, imposing cross-level equality constraints on the factor loadings (Model No. 4) did not worsen the model fit, $\Delta\chi^2(10) = 14.02$, $p = .172$; supporting Hypothesis 2.2.

Study 3b (FFNI-SSF Daily Diary Study)

All model fit indices are given in Table 5 (see Table S4 in additional online material for all descriptive statistics on the item level). The Model No. 1 was poorly fitted to the data. Removing the only reverse-coded item in neurotic narcissism (regarding indifference) further improved model fit. To maintain item to scale balance in the other two scales, we also removed one item whose factor allocation was inconsistent within the literature (regarding manipulativeness) and one having consistently low factor loadings (regarding distrust; Miller et al., 2016; Rogoza et al., 2021; Model No. 2). The tested model revealed suboptimal fit to the data (partial support for Hypothesis 1). Mirroring the latent factor structure of the between-person level to the within-person level (Model No. 3) resulted in an acceptable model fit (supporting Hypothesis 2.1). Last, imposing cross-level equality constraints on the factor loadings (Model No. 4)

Table 3
Model Fit and Model Comparison of the Multilevel Structural Equation Models for the NVS and NGS (Study 2)

	Model fit							Model comparison			
No.	χ^2	*df*	*p*	RMSEA	CFI	SRMR-within	SRMR-between	versus	Δ*df*	$\Delta\chi^2$	$p(\Delta\chi^2)$
1	36.10	19	.010	.029	.991	.001	.063				
2	45.40	38	.191	.015	.995	.019	.063				
3	64.27	44	.025	.023	.986	.025	.062	2	6	17.34	.008
4	**51.39**	**43**	**.178**	**.015**	**.994**	**.022**	**.060**	**2**	**5**	**5.99**	**.307**

Note. The final model is bold. NVS = Narcissistic Vulnerability Scales; NGS = Narcissistic Grandiosity Scales. Model No. 1: two-factor model on the between-person level, all covariances freely estimated on the within-person level with no latent variables. Model No. 2: Model No. 1, plus the between-person level structural model on the within-person level. Model No. 3: Model No. 2, plus constraining factor loadings to be equal across the levels. Model No. 4: Model No. 3, with relaxing the equality constraint of one-factor loadings. RMSEA = root-mean-square error of approximation; CFI = comparative fit index; SRMR = standardized root-mean-squared residual.

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Table 4
Model Fit and Model Comparison of the Multilevel Structural Equation Models for the SB-PNI (Study 3a)

	Model fit							Model comparison			
No.	χ^2	*df*	*p*	RMSEA	CFI	SRMR-within	SRMR -between	versus	Δ*df*	$\Delta\chi^2$	$p(\Delta\chi^2)$
1	302.44	53	<.001	.042	.953	.000	.124				
2	141.91	52	<.001	.023	.986	.000	.089	1	1	18.58	<.001
3	247.22	104	<.001	.026	.965	.032	.089				
4	**262.02**	**114**	**<.001**	**.025**	**.964**	**.033**	**.085**	**3**	**10**	**14.02**	**.172**

Note. The final model is bold. SB-PNI = Super-Brief Pathological Narcissism Inventory. Model No. 1: two-factor model on the between-person level, all covariances freely estimated on the within-person level with no latent variables. Model No. 2: Model No. 1, plus one residual covariance on the between-person level. Model No. 3: Model No. 2, plus the between-person level structural model on the within-person level. Model No. 4: Model No. 3, plus constraining factor loadings to be equal across the levels. RMSEA = root-mean-square error of approximation; CFI = comparative fit index; SRMR = standardized root-mean-squared residual.

did not worsen the model fit, $\Delta\chi^2(6) = 10.83$, $p = .094$; supporting Hypothesis 2.2.

Trait Narcissism and the Relation to State Narcissism and Its Variability (Hypotheses 3 and 4)

Next, using DSEM, we examined how trait narcissism is related to state narcissism (Hypothesis 3) and its variability above and beyond state narcissism (Hypothesis 4). The intercorrelations between the scales of the traits and state measures are presented as additional online materials at https://osf.io/juq8v/ separately. Within Table 6, we present the interrelations of trait and state measures (Hypothesis 3) and the unique relation of trait narcissism to variability in state narcissism (Hypothesis 4).

The results confirmed the hypothesized pattern of relations in full (Hypothesis 3.1: trait scores are positively related to respective state scores): trait agentic, antagonistic, and neurotic narcissism were all positively related to state agentic and neurotic narcissism, respectively, and in all studies. However, we found mixed support regarding the expected relations to antagonistic narcissism (Hypothesis 3.2: trait and state antagonistic narcissism is positively related to state agentic and neurotic narcissism). Specifically, trait antagonistic narcissism was not related to state agentic narcissism in Studies 1 and 2, and contrary to our expectations, the relation was negative in Study 3b. Trait antagonistic narcissism was positively related to state neurotic narcissism only in Study 2. While the relation of state antagonistic narcissism (Study 3b only) to trait agentic was positive, as expected, the relation to trait neurotic narcissism was nonsignificant. Interestingly, at the within-person level, we observed that state antagonistic narcissism was positively related to both agentic ($r = .23$ [.21, .26]; $p < .001$) and neurotic ($r = .08$ [.04, .11]; $p < .001$) narcissism, providing full support for Hypothesis 3.2. at the within-person level.[4]

With regard to Hypothesis 4.1 (trait antagonistic narcissism is related to variability in state agentic, antagonistic, and neurotic narcissism), we failed to find support in Studies 1 and 2 (i.e., nonsignificant relations), simultaneously finding strong support for this hypothesis in Study 3b. Indeed, in this study, trait antagonistic narcissism was related to variability in agentic and antagonistic narcissism states while marginally related to variability in neurotic narcissism states ($p = .064$). Nevertheless, we did not find support for Hypothesis 4.2 (trait agentic narcissism is positively related to variability in state antagonistic narcissism) as the effect was nonsignificant. Unexpectedly, we observed that trait neurotic narcissism was related to variability in state agentic narcissism (and at the $p = .081$ to variability in antagonistic narcissism) in Study 3b.

Discussion

Although theoretical and psychometrical investigations of trait narcissism are flourishing (e.g., Di Pierro et al., 2023; Miller et al., 2021; Wetzel et al., 2021), less is known about the measurement of state narcissism (Edershile et al., 2019), which is a major drawback as shifts from one narcissistic state to another are sometimes considered central features of narcissistic functioning (Gore & Widiger, 2016; Jauk et al., 2022; Kealy & Rasmussen, 2012; Pincus & Lukowitsky, 2010). Understanding the consequences of state narcissism and having appropriate tools to assess it might therefore have broad implications for theoretical advancements in narcissism. While there is an agreement in clinical and personality conceptualizations of narcissism, which have always stressed the relevance of within-person variability in narcissistic states (Back, 2018; Edershile & Wright, 2022; Oltmanns & Widiger, 2018; E. F. Ronningstam, 2005) evidence tackling these concerns are scarce. Against this backdrop, we provided a comprehensive psychometric evaluation of four established measures of narcissism in EMA and daily diary designs and also provided insights into the relations between trait narcissism and variability in narcissistic states.

Between-Person Structure of State Narcissism (Hypothesis 1)

We first analyzed whether the factor structure reported on trait narcissism (e.g., Wetzel et al., 2021) also emerges when investigations rely on state assessments of narcissism. On the whole, the results on the between-person structure of state narcissism indeed largely matched those observed on the trait level both when using EMA and daily diary study protocols. By adopting an exploratory approach, Edershile et al. (2019) showed similar results. However, it is of note that our findings could be considered more robust as we used a more strict confirmatory approach. As such, we have generally found support for the two-factor structure of the NVS and NGS. In Study 3a,

[4] The correlations between the FFNI scales for Study 1, 2, and 3b at the trait level were as follows: antagonistic and agentic ($r = .54$; $p < .001$; $r = .61$; $p < .001$; $r = .33$; $p < .001$), antagonistic and neurotic ($r = .15$; $p < .05$; $r = -.06$; $p = .546$; $r = .11$; $p = .135$), agentic and neurotic ($r = -.12$; $p = .125$; $r = -.19$; $p < .05$; $r = -.09$; $p = .223$).

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Table 5
Model Fit and Model Comparison of the Multilevel Structural Equation Models for the FFNI-SSF (Study 3b)

	Model fit							Model comparison			
No.	χ^2	*df*	*p*	RMSEA	CFI	SRMR-within	SRMR-between	versus	Δ*df*	$\Delta\chi^2$	$p(\Delta\chi^2)$
1	268.23	51	<.001	.034	.913	.000	.151				
2	107.27	24	<.001	.030	.953	.000	.109				
3	141.56	48	<.001	.032	.892	.031	.109				
4	**150.99**	**54**	**<.001**	**.031**	**.886**	**.032**	**.104**	**3**	**6**	**10.83**	**.094**

Note. The final model is bold. FFNI-SSF = Five-Factor Narcissism Inventory–Super Short Form. Model No. 1: three-factor model on the between-person level with $k = 12$, all covariances freely estimated on the within-person level with no latent variables. Model No. 2: three-factor model on the between-person level with k = 9, all covariances freely estimated on the within-person level with no latent variables. Model No. 3: Model No. 2, plus the between-person level structural model on the within-person level. Model No. 4: Model No. 3, plus constraining factor loadings to be equal across the levels. RMSEA = root-mean-square error of approximation; CFI = comparative fit index; SRMR = standardized root-mean-squared residual.

we also provided support for the two-factor model using the SB-PNI in a daily diary design. Of interest, the best-fitting model included a covariance between the only two items of the PNI self-sacrificing self-enhancement subscale (Pincus et al., 2009). This specific subscale is the only PNI scale capturing qualitatively different and more covert elements of grandiosity (i.e., realizing agentic goals hidden in communal self-enhancement; Rogoza & Fatfouta, 2019; Wright et al., 2013). In Study 3b, we analyzed the three-factor measurement model of the FFNI-SSF. Past research indicated that the initially proposed scoring is suboptimal (Rogoza et al., 2021). To achieve a satisfactory model fit, we further discarded one item per factor. Specifically, we removed the single reversed-scored item from neurotic narcissism, as such items tend to produce method bias (e.g., Podsakoff et al., 2012). To maintain item-to-scale balance, we also removed one item regarding manipulativeness, as it was ambiguous, with some studies arguing it as an indicator of antagonistic (Miller et al., 2016) or agentic narcissism (Rogoza et al., 2021). Finally, we removed the item concerning distrust, as it has been suggested to be the least reliable indicator of antagonistic narcissism (Miller et al., 2016; Rogoza et al., 2021). All these modifications within the FFNI-SSF measurement model resulted in a good model fit. These changes imply that the nine-item version of the FFNI derived by our study may not be suitable for assessing state grandiose and vulnerable narcissism. Although the FFNI was initially developed to these constructs (Glover et al., 2012), existing investigations of its factorial structure support the three-factor model over a two-factor one (Jauk et al., 2023), which is congruent with our findings. Existing research, however, still tends to compute scores of grandiose and vulnerable narcissism (e.g., Packer West et al., 2021). Thus, given the lack of evidence for the two-factor model of the FFNI, future research might consider different approaches to computing grandiose and vulnerable narcissism, which may better correspond to the hierarchical structure of narcissism (Miller et al., 2021). For instance, it might be possible to compute grandiose narcissism as a function of agentic and antagonistic facets, and vulnerable narcissism as a function of neurotic and antagonistic facets. Taken together, we were able to propose a well-working version capturing the facets of narcissism that might be used in daily diary studies (which is available at the OSF project site).

Table 6
Path Estimates of Trait Narcissism Predicting State Narcissism and Its Variability

Path	Trait → state (Hypothesis 3)	Trait → variability (Hypothesis 4)
Study 1		
Agentic → agentic	.23 [−.02, .45]*	.18 [−.03, .39]
Antagonistic → agentic	−.01 [−.25, .23]	−.05 [−.26, .18]
Neurotic → agentic	−.15 [−.30, .01]*	.06 [−.08, .20]
Agentic → neurotic	−.01 [−.24, .23]	.06 [−.11, .23]
Antagonistic → neurotic	.14 [−.11, .38]	.01 [−.17, .19]
Neurotic → neurotic	.21 [.06, .36]**	.28 [.16, .39]***
Study 2		
Agentic → agentic	.40 [.14, .63]**	.15 [−.12, .41]
Antagonistic → agentic	.16 [−.10, .40]	−.03 [−.29, .23]
Neurotic → agentic	.07 [−.10, .25]	−.07 [−.24, .10]
Agentic → neurotic	−.19 [−.46, .07]	.17 [−.11, .45]
Antagonistic → neurotic	.46 [.19, .71]***	−.02 [−.30, .25]
Neurotic → neurotic	.32 [.15, .49]***	.07 [−.12, .26]
Study 3a		
Grandiose → grandiose	.63 [.50, .73]***	.20 [−.03, .42]*
Vulnerable → grandiose	.07 [−.08, .19]	.29 [.05, .53]**
Grandiose → vulnerable	−.04 [−.17, .08]	.19 [−.04, .40]
Vulnerable → vulnerable	.75 [.64, .84]***	.19 [−.05, .42]
Study 3b		
Agentic → agentic	.81 [.74, .88]***	−.03 [−.25, .18]
Antagonistic → agentic	−.16 [−.27, −.06]**	.20 [.02, .40]*
Neurotic → agentic	.06 [−.05, .16]	.19 [−.02, .41]*
Agentic → antagonistic	.21 [.08, .33]**	−.11 [−.30, .09]
Antagonistic → antagonistic	.53 [.41, .63]***	.22 [.05, .37]**
Neurotic → antagonistic	.05 [−.07, .16]	.13 [−.06, .31]
Agentic → neurotic	−.07 [−.17, .04]	−.02 [−.25, .21]
Antagonistic → neurotic	.07 [−.03, .19]	.16 [−.04, .35]
Neurotic → neurotic	.76 [.68, .82]***	.13 [−.10, .35]

Note. In Study 1 and Study 2, antagonistic narcissism was only assessed as a trait variable.
* $p < .05$. ** $p < .01$. *** $p < .001$.

Within-Person Structure of State Narcissism and Its Invariance With the Between-Person Structure (Hypothesis 2)

Our results showed that the within-person factorial structure of all state narcissism measures was consistently measurement invariant with the between-person structure in all our studies. The factor loadings were measurement invariant for the nonadjective measures (SB-PNI and FFNI-SSF) and partially measurement invariant for the adjective measures (NVS and NGS). Having said that, we would like to note that the noninvariant factor loadings should not be

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overemphasized, as in Study 1 and Study 2, this noninvariance pertained to one out of 12- and eight-factor loadings, respectively. Accordingly, we conclude that even the adjective measures of narcissism elicited a fairly equivalent construct representation on the between-person and within-person levels. This equivalence indicates that when individuals' momentary and daily cognitions and emotions are studied, a pattern of covariation occurs that clearly indicates narcissistic states. In other words, the constructs that we know from interindividual differences research as forms of narcissism also exist in very similar forms on the within-person level. It is, therefore, justified for researchers to refer to narcissistic states that are characterized by the same features as on the trait level (Edershile & Wright, 2021; Gore & Widiger, 2016). A practical implication of these findings is that researchers can use the short narcissism scales we included in our studies to reliably study intraindividual variation in narcissism.

Relations Between Trait and State Measures of Narcissism (Hypothesis 3)

As expected, we have found strong support for the convergence of trait and state measures of narcissism in all studies. That is, the trait measures of narcissism were always positively related to their corresponding state measures regardless of the measure and the study protocol (i.e., daily diary or EMA). In contrast to the theoretical literature on narcissism, however, we have failed to provide strong support for the connection between trait antagonistic narcissism to state agentic and neurotic narcissism. Previous research on trait narcissism provides firm support that antagonistic narcissism is related to both agentic and neurotic narcissism (Di Pierro et al., 2023; Rogoza et al., 2022). Nevertheless, the literature on trait narcissism measured by the FFNI (which was used to capture trait antagonistic narcissism in all studies except for Study 3a) diverges from the theory. Specifically, the FFNI subscales capturing antagonistic and neurotic narcissism are frequently unrelated (e.g., Fossati et al., 2018; Jauk et al., 2023; Rogoza et al., 2021, see also Footnote 4). Consistently, we failed to find a connection between trait antagonistic and state neurotic narcissism (except for Study 2, where we found a positive relation). Nevertheless, these studies also point out a strong relation between antagonistic and agentic narcissism. While we did observe that agentic and antagonistic narcissism were positively related either at the trait and state level, when analyzing the relationship between trait antagonistic narcissism and state agentic narcissism, it was either absent (Studies 1 and 2) or even negative (Study 3b). This suggests that while the findings on the factorial structure of trait narcissism (cf. Hypotheses 1 and 2; M. L. Crowe et al., 2019; Di Pierro et al., 2023) may be applied to state narcissism (i.e., facets of narcissism can be measured as state variables), there are notable differences in how stable trait dispositions of narcissism are related to more dynamic state expressions.

Trait Narcissism in Its Relation to the Variability in Narcissistic States (Hypothesis 4)

Last, in an attempt to examine some assumptions of the within-person self-regulatory model of narcissism (Back, 2018), we tested how trait narcissism is related to variability in state narcissism. Although we report results for all studies, following Back (2018), differentiation of facets, both at trait and state level, is necessary to understand the within-person self-regulatory processes, limiting conclusions to Study 3b. This claim is further emphasized by the fact that neither in Study 1 nor Study 2 did trait measures of narcissism correlate with variability in state narcissism. In Study 3a, we found that grandiose and vulnerable narcissism scores were related to higher variability in state grandiose narcissism. The scale used in Study 3a (i.e., the SB-PNI-G) is similarly to antagonistic narcissism, positively related to agentic and neurotic narcissism (M. L. Crowe et al., 2019; Rogoza et al., 2022). Thus, it might be that the common core of grandiose and vulnerable narcissism, that is—antagonistic narcissism, might be considered as a driver of this association to variability in grandiose narcissism narcissistic states.

Finally, in Study 3b, which contributes to the findings of Study 3a through disentangling the facets of grandiose and vulnerable narcissism at the trait and state level, we provided empirical evidence that antagonistic narcissism is central to understanding variability in narcissism. That is, antagonistic narcissism was linked to greater variability in agentic and antagonistic narcissism states, and thus, it could be considered as a driver of variability in grandiose narcissism and its constituents (Gore & Widiger, 2016; Oltmanns & Widiger, 2018). Regarding the variability in neurotic narcissism states, the observed relation was at the boundary of significance, which may suggest that switching from antagonistic to neurotic narcissism may be less frequent than expected. In this vein, we provided initial empirical support for the Back (2018) self-regulatory model of narcissism, which stressed that antagonistic narcissism is central to self-regulation in narcissism. Summing up, differentiating narcissism facets—with a particular focus on antagonistic narcissism—seems to be necessary for understanding *how* fluctuations between grandiose and vulnerable narcissism occur.

Clinical Implications

Among all personality disorders, narcissistic pathology is one of the most difficult to treat and clinicians usually consider the presence of a narcissistic pathology in patients as a negative prognostic sign for achieving long-lasting success in psychotherapy (Caligor et al., 2015). From a clinical perspective, grandiose and vulnerable states in narcissistic individuals may affect the psychotherapy process differently. Typically, individuals in grandiose states are self-absorbed, do not tolerate interpersonal dependency, and lose sight of their intrapersonal and interpersonal difficulties or psychological suffering. Such an image may explain the clinical claim that narcissistic individuals in grandiose states do not usually seek help (E. F. Ronningstam, 2005) and the reasons why building and maintaining a therapeutic alliance with them is challenging (E. Ronningstam, 2012). In fact, clinical observations (E. F. Ronningstam, 2005) and empirical evidence (Ellison et al., 2013) suggest that narcissistic individuals are not only more prone to seeking help but also to displaying affection and sympathy toward the therapist and building a therapeutic alliance (Busmann et al., 2021; Kealy et al., 2017; E. Ronningstam, 2012) when they are in vulnerable states, as in such states narcissistic individuals experience discomforting feelings and subjective psychological distress (Pincus & Lukowitsky, 2010).

Therefore, understanding the process of changes in narcissistic states is of great importance in clinical settings, as it can inform the development of evidence-based therapies for narcissism. In this context, the finding that antagonistic narcissism predicts increased

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variability in narcissism has broad potential implications. Specifically, this finding emphasizes the need to differentiate facets of narcissism to understand the fluctuation in state narcissism. To date, researchers have primarily focused on grandiose and vulnerable narcissistic states (Edershile & Wright, 2021). However, the current results align with theoretical claims (Back, 2018) and confirm the existence of all narcissistic facets at the within-person level. This finding opens new empirical avenues for studying fluctuations in narcissism, as it emphasizes the central role of antagonistic narcissism in ongoing momentary self-regulatory processes (Back, 2018; Di Pierro et al., 2023; Rogoza et al., 2022). Additionally, antagonistic narcissism seems to play a role in determining the levels and variability in narcissistic states. Accordingly, clinical interventions targeting antagonistic narcissism may possibly evoke neurotic states in patients, which could contribute to the therapeutic process by fostering a positive therapeutic alliance. This finding is congruent with object-relations psychodynamic approaches regarding the treatment of narcissism (Diamond et al., 2023). Specifically, Diamond et al. argued that dissolving grandiosity during therapy evokes the emergence of painful affects which can be worked through during treatment—a process that resembles what we observed in the present study: a shift to neurotic narcissism from a different theoretical perspective.

Limitations and Conclusion

While this study sheds light on assessing narcissism on the within-person level, some limitations need to be considered. For instance, we did not analyze how the variability in narcissism relates to different intra- and/or interpersonal criteria (Rentzsch et al., 2021), nor did we analyze under which situations participants provided their responses. To address these issues, future work would benefit from conducting intensive longitudinal studies, which include further intra- and/or interpersonal criteria, which would also include situational prompts. Also, it has to be acknowledged that existing adjective scales (i.e., the NVS and NGS) are only partially able to capture antagonistic narcissism. Thus, future research should consider developing an adjective-based scale of antagonistic narcissism to test whether the three-factor model of narcissism would also reproduce in EMA designs. The development of such a scale would open new opportunities in research of state narcissism. Another limitation is that across the reported studies, we used a variety of state measures of narcissism (i.e., two variants of the NVS and NGS, SB-PNI, and FFNI-SSF). Although this may have an impact on the solidity of our conclusions, we note that all of these measures have been previously utilized in empirical research. Thus, we provided a comprehensive evaluation of each.

The sample sizes of the three analyzed samples (i.e., N's = 169, 108, 176) may be seen as relatively small for analyzing the factorial structure. Nevertheless, it is important to note that participants provided many responses throughout each study. Despite the relatively short duration of the studies, participants provided an average of M's = 64.08, 10, and 22.37 responses over the course of N's = 14, 10, and 28 days, respectively, highlighting the intensive nature of each study. Researchers assessing sample size at the between-person level, often consider the item-to-participant ratio, with a recommended ratio of 10:1 (Costello & Osborne, 2005). Given that our data were hierarchically structured, with momentary or daily observations (Level 1) nested within individuals (Level 2), we evaluated not only the Level 1 item-to-participant ratio (which was: 14, 13.5, 14.5, and 19.5), but we also assessed the response-to-participant ratio, which on average was 64:1, 10:1, and 22:1, respectively (see above). Even the lowest ratio observed in Study 2 met the minimum requirement (10:1), and it is further important to note that in this study, there was no missingness, as each participant provided 10 responses. Therefore, all of the samples can be considered adequately powered. Another methodological consideration is that the number of prompts varied across studies. It, however, could also be seen as a strength as we demonstrated that the structure reproduced across different measurement conditions. Furthermore, all of our studies assessed either the general population (Studies 1, 3a, and 3b) or Amazon Mturk (Study 2), comprising especially young adults from Western societies. Thus, we recommend caution when generalizing the results to other populations. Finally, while inspecting the fit indices of the analyzed factor analytic models, although the initial model fit was acceptable, we made some adjustments by freeing the covariances (Study 1 and Study 3a), which had a large impact on the overall model fit. Although this raised the potential risk of overfitting the model, we kept the number of modifications to a minimum. Future studies could further assess whether these identified covariances are replicable or whether they are specific to the current sample. Despite all these questions left for future research, we offer the most comprehensive to-date support for measuring narcissism on the within-person level, hoping to stimulate future research on within-level narcissism.

Summing up, the present study was the first to comprehensively assess the structure of narcissism at the within-person level using different measures and methodological designs. Although the literature converges on the view that narcissism has a three-factorial structure (Miller et al., 2021; Rogoza et al., 2022; Wright & Edershile, 2018), research on within-person narcissism was still operating in a previous, two-factor model (Edershile et al., 2019). Thus, the present research represents an initial step toward successfully transferring knowledge from the between-person level to the within-person level. Other strengths of the current research are that we validated short forms of existing measures that can be used for investigations on both the between- and within-person level and that we provided empirical support for the assumptions underlying the within-person self-regulatory model of narcissism (Back, 2018).

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