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Carolyn C. Morf | Eva Schürch | Albrecht Küfner | Philip Siegrist |
Aline Vater | Mitja Back | Robert Mestel | Michela Schröder-Abé

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German Validation and Extension in a Clinical Inpatient Sample

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Expanding the Nomological Net of the Pathological Narcissism Inventory: German Validation and Extension in a Clinical Inpatient Sample

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Carolyn C. Morf¹, Eva Schürch¹, Albrecht Küfner², Philip Siegrist¹, Aline Vater^{3,4}, Mitja Back², Robert Mestel⁵, and Michela Schröder-Abé⁴

Abstract

The Pathological Narcissism Inventory (PNI) is a multidimensional measure for assessing grandiose and vulnerable features in narcissistic pathology. The aim of the present research was to construct and validate a German translation of the PNI and to provide further information on the PNI's nomological net. Findings from a first study confirm the psychometric soundness of the PNI and replicate its seven-factor first-order structure. A second-order structure was also supported but with several equivalent models. A second study investigating associations with a broad range of measures (*DSM* Axis I and II constructs, emotions, personality traits, interpersonal and dysfunctional behaviors, and well-being) supported the concurrent validity of the PNI. Discriminant validity with the Narcissistic Personality Inventory was also shown. Finally, in a third study an extension in a clinical inpatient sample provided further evidence that the PNI is a useful tool to assess the more pathological end of narcissism.

Keywords

narcissism, assessment, Pathological Narcissism Inventory, construct validity, nomological network

Narcissism as a personality trait is an intriguing phenomenon that has captured the attention of researchers now for several decades. Nevertheless, a consensus across disciplines about the exact definition of the construct is still missing (Cain, Pincus, & Ansell, 2008). The description of symptoms listed in the *Diagnostic and Statistical Manual of Mental Disorders (DSM-III; American Psychiatric Association [APA], 1980)*, when narcissism first appeared as a distinct personality disorder, was crucial for subsequent research, as it provided the basis for the first assessment tools for narcissism. However, researchers in personality and clinical psychology agree that the current *DSM* criteria are unbalanced and do not reflect the full complexity of the narcissistic personality characteristics observed in research and practice. In particular, there is insufficient coverage of vulnerable criteria and as a result this aspect also is missing in the instruments developed from the *DSM*. Recent efforts therefore have focused on developing new measures to rectify this problem and to provide a more differentiated assessment of narcissism that spans more completely its full range of manifestations.

The focus of the current article is on the Pathological Narcissism Inventory (PNI; Pincus et al., 2009), the first questionnaire developed with an intention to assess both

pathological grandiosity and vulnerability. The aim of the present research was to construct and validate a German translation of the PNI and to further investigate its nomological net. In three studies, we examine the psychometric properties of the German PNI and provide additional confirmation for already known, as well as new components of its nomological net. Importantly, the PNI was also employed in a large clinical inpatient sample in an effort to see whether factor structure and psychometric properties are comparable and to obtain further clarification regarding the distinctions between the different manifestations of narcissism in how they relate to psychological well-being or distress.

¹University of Bern, Bern, Switzerland

²Westfälische Wilhelms University, Münster, Germany

³Charité, Berlin, Germany

⁴University of Potsdam, Potsdam, Germany

⁵Helios Klinik, Bad Grönenbach, Germany

Corresponding Author:

Carolyn C. Morf, Institute of Psychology, University of Bern, Fabrikstrasse 8, 3012 Bern, Switzerland.

Email: carolyn.morf@psy.unibe.ch

Variations in the Expression of Narcissism: From Grandiose to Vulnerable

At the core, narcissistic individuals are driven by a motive to confirm and enhance their grandiose self-views (Morf, Horvath, & Torchetti, 2011; Pincus, 2013). They seek respect and admiration and will adopt abundant—and often ingenious—intra- and interpersonal strategies in this effort (see Morf, Torchetti, & Schürch, 2011, for a review). The classic manifestation of these self-regulation strategies is in form of overtly grandiose, exploitative and entitled interpersonal behavior. This expression characterizes often-called grandiose narcissism,¹ which describes individuals who are often quite successful with these strategies and typically do not suffer from negative emotions and affective disorders. Grandiose narcissism, however, has been shown to be related to problems in social functioning (see Campbell & Campbell, 2009; Morf, Horvath, et al., 2011, for reviews) and engagement in high-risk behavior (e.g., Foster, Shenese, & Goff, 2009; Luhtanen & Crocker, 2005). There is growing evidence, however, that this predominantly overt grandiose style is only one dimension of narcissism.

Clinical psychologists have long been describing more explicitly vulnerable aspects (Akhtar & Thomson, 1982; Cain et al., 2008; Wink, 1991) ranging from contingent, instable, or low self-esteem (Bosson, Pinel, & Thompson, 2008; Dickinson & Pincus, 2003; Zeigler-Hill, Clark, & Pickard, 2008), to feelings of shame (Cooper & Ronningstam, 1992; Pincus et al., 2009), inferiority and fragility (Akhtar, 1989). On the other hand, common to both vulnerable and grandiose narcissism are a sense of entitlement (Dickinson & Pincus, 2003), and a tendency to interact with others in manipulative and antagonistic hostile ways (Miller, Hoffman, et al., 2011). Moreover, vulnerable narcissism is associated with psychiatric comorbidity and suffering (Ellison, Levy, Cain, Ansell, & Pincus, 2013), as well as with more frequent use of therapeutic services (Pincus et al., 2009).

In the past 5 years, the different expressions of narcissism have moved into central focus of research in both personality and clinical psychology. While narcissistic grandiosity and vulnerability have been well described on a phenotypic level, a systematic assessment of the various manifestations did not begin until lately in research and practice, due to inadequate assessment tools. To date, the grandiose aspects of narcissism had been dominant in contemporary diagnostic classification systems (*DSM-III* [APA, 1980]; *DSM-IV* [APA, 1994]; *DSM-5* [APA, 2013]) and the questionnaires developed from these systems. Of these the Narcissistic Personality Inventory (NPI; Raskin & Terry, 1988) is the most prominent and it has been used in the vast majority of research. Although some clinical measures include a somewhat broader spectrum of vulnerable features (e.g., the narcissism subscale of the Minnesota

Multiphasic Personality Inventory [MMPI-2] personality disorder scales; Colligan, Morey, & Offord, 1994; or of the Dimensional Assessment of Personality Pathology [DAPP-BQ]; Livesley & Jackson, 2009), to date only a few had been developed to explicitly assess the vulnerable side of narcissism (e.g., Hypersensitive Narcissism Scale [HSNS]; Hendin & Cheek, 1997). In short, existing measures are inadequate, because either they assess only a single dimension, or despite being broader, they do not afford separation of the dimensions.

The Pathological Narcissism Inventory: Its Nature and Nomological Net Thus Far

The PNI (Pincus et al., 2009) was the first questionnaire developed to bridge this gap by explicitly including an assessment of *both* grandiosity and vulnerability. In the few years since its publication, the PNI has drawn a lot of interest and stimulated intensified efforts devoted to further delineating the construct of narcissism. There now are many efforts in progress to continue adding to the validation of the PNI and to further demarcating the boundaries between the various expressions of narcissism (e.g., Maxwell, Donnellan, Hopwood, & Ackerman, 2011; Miller et al., 2010; Miller, Hoffman, et al., 2011; Roche, Pincus, Lukowitsky, Menard, & Conroy, 2013; K. M. Thomas, Wright, Lukowitsky, Donnellan, & Hopwood, 2012). Translations into a number of languages (e.g., French, Japanese, Korean) also are currently underway, five of which have recently been published (Italian: Fossati, Feeney, Pincus, Borroni, & Maffei, 2014; Croatian: Jakšić et al., 2014; Greek: Karakoula, Triliva, & Tsaousis, 2013; Persian: Soleimani et al., 2015; Chinese: You, Leung, Lai, & Fu, 2013).

The PNI is a multidimensional self-report measure to assess the full spectrum of pathological narcissism. Based on the literature and clinical case studies, the authors identified seven target dimensions to cover the range of grandiose and vulnerable aspects of narcissism (Pincus et al., 2009). Their final scale consists of 52 items, which were assigned to the seven primary factors empirically. In their original conceptualization Pincus et al. (2009) designated the more *grandiose* aspects to be represented by the *exploitative* subscale (EXP; interpersonal manipulateness), the *grandiose fantasy* subscale (GF; compensatory fantasies of success and recognition), the *self-sacrificing self-enhancement* subscale (SSSE; purportedly altruistic behavior aimed at self-enhancement), and the *entitlement rage* subscale (ER; anger in response to unmet entitled expectations); whereas the *vulnerable* aspects to be assessed by the *devaluing* subscale (DEV; disdain for others, who are not admiring and shame for wanting it), the *contingent self-esteem* subscale (CSE; fluctuating self-esteem in response to external sources), and the *hiding the self* subscale (HS; concealing faults and needs from others).

Wright, Lukowitsky, Pincus, and Conroy (2010) subsequently examined the higher order factor structure of the PNI empirically. They tested two models with two higher factors (neither of which exactly correspond to the original proposed by Pincus et al., 2009). Specifically, their Model 1 included EXP, GF, and ER on the grandiose factor; whereas Model 2 contained EXP, GF, and SSSE on the grandiose factor, with the respective remaining subfactors assigned to the vulnerable factor. Both models reached similar fit indices with slightly better values for the second model. As a result, since its publication, the second model by Wright et al. (2010) has been used by researchers to compose the second order factors and several studies have reported results for the respective vulnerable and grandiose components (e.g., Back et al., 2013; Ellison et al., 2013; Kealy, Tsai, & Ogrodniczuk, 2012; Lamkin, Clifton, Campbell, & Miller, 2013; Lukowitsky & Pincus, 2013; K. M. Thomas et al., 2012; Zeigler-Hill & Besser, 2013). This higher order factor solution thus has become a quasi-standard and is the one typically referred to when talking about grandiose and vulnerable narcissism as assessed by the PNI.

The currently active research involving this questionnaire is contributing to a rapidly expanding nomological net concerning the grandiose and vulnerable facets of narcissism. Some initial studies were not explicitly aimed at validating the PNI but instead constructed the vulnerable and grandiose factors out of a combination of narcissism measures (Miller, Hoffman, et al., 2011), or used only part the PNI (Miller et al., 2010), and thus contribute to this net more indirectly. Large-scale studies addressing the PNI directly have since been appearing (e.g., Maxwell et al., 2011; Roche et al., 2013; K. M. Thomas et al., 2012; You et al., 2013). Like the initial study by Pincus et al. (2009), these studies often use the NPI as a comparison point for the explicitly grandiose dimension of narcissism. These studies typically find the correlations between the NPI and PNI total score to be low to moderate (e.g., $r = .13-.27$; Glover, Miller, Lynam, Crego, & Widiger, 2012; Maxwell et al., 2011; Pincus et al., 2009; Roche et al., 2013) confirming the overlapping construct of narcissism being assessed by the two scales, despite their differential foci on different ends of the continuum in the expression of narcissism (then again, there also is a six-item overlap). Likewise, both the NPI and the PNI have been shown to have significant independent associations of similar levels with measures assessing narcissistic personality disorder symptoms (e.g., Glover et al., 2012; Maxwell et al., 2011). Other domains of convergence between the two measures typically are in terms of disagreeableness, low empathy, and aggression (e.g., Pincus et al., 2009; Roche et al., 2013).

On the other hand, studies consistently confirm the divergent pattern linking high self-esteem and low shame with the NPI, with the opposite configuration for the PNI (Maxwell et al., 2011; Pincus et al., 2009; Roche et al.,

2013). The NPI also correlates positively with extraversion and negatively with neuroticism, with the reverse being true for the PNI. Moreover, the PNI has been shown to be uniquely related to childhood abuse, attachment avoidance, interpersonal distress, and borderline personality (Roche et al., 2013). In comparison, the same study found the NPI to be uniquely associated with low guilt, low communal but high agentic interpersonal problems (i.e., lack of dependency, overly dominant). In addition, the PNI was found to be associated with rivalry, whereas the NPI was related to admiration striving (Back et al., 2013).

Only a handful of studies thus far have looked specifically to compare vulnerability and grandiosity *within* the PNI (typically using the second model of Wright et al., 2010). Correlations between these two PNI factors composite scores generally are moderate to high (e.g., $r = .39-.63$; Bresin & Gordon, 2011; Glover et al., 2012, respectively). Nevertheless, these studies confirm the divergent patterns discussed above of low self-esteem (Maxwell et al., 2011), low extraversion (Bresin & Gordon, 2011; K. M. Thomas et al., 2012) and high depressed affect (Ellison et al., 2013; K. M. Thomas et al., 2012; Tritt, Ryder, Ring, & Pincus, 2010) for the vulnerable factor composite score. PNI vulnerability was further found to be related to social isolation, suicidal ideation, and self-harm (K. M. Thomas et al., 2012), as well as likelihood of psychiatric emergency room visits (Ellison et al., 2013). PNI grandiosity in contrast was associated with manic behavior, features of antisocial behavior (K. M. Thomas et al., 2012), higher client-initiated termination of psychotherapy and lower hospitalization (Ellison et al., 2013).

Note, however, that despite certain similarities, the modest data amassed thus far support the conclusion that PNI grandiosity differs from NPI grandiosity (Bresin & Gordon, 2011; Glover et al., 2012; Miller, Hoffman, et al., 2011). PNI grandiosity appears to cover the more pathological and vulnerable range of the spectrum, in that it lacks leadership but includes SSSE. The NPI in contrast assesses the more functional end given its higher self-esteem correlate and lacking association with shame (Roche et al., 2013). The more functional end of narcissistic grandiosity potentially can be approximated in the PNI by controlling for its vulnerable aspects. For example, when PNI vulnerability was partialled out of PNI grandiosity, the correlation with self-esteem reached the same magnitude as the one of the NPI (Maxwell et al., 2011). Reversely, NPD patients did not obtain higher scores on the NPI relative to nonclinical controls, unless explicit self-esteem was controlled (Vater et al., 2013). These possible post-hoc approximations notwithstanding, using solely the NPI clearly misses important aspects of pathological narcissism with its failure to adequately assess vulnerable narcissism (Cain et al., 2008; Pincus & Lukowitsky, 2010). Thus, making the PNI with its full range of facets an indispensable tool for future research and clinical assessment.

The Present Research

In three studies, we describe the construction and validation of a German translation of the PNI. The first study reports the psychometric properties of the German PNI along with validation of its factor structure (both lower and higher order). The second study provides data on the association between the German PNI and its subscales with a wide range of personality traits, cognitions, emotions, behaviors, and psychopathological symptoms to support and extend its nomological net. This is done also in comparison to the NPI, as an indicator of grandiose narcissism. In the third study, we examine the German PNI as it relates to a variety of personality characteristics and clinical symptoms in a large inpatient psychotherapy sample. To our knowledge this is the first study to implement the PNI in an inpatient population. By comparing the similarities and differences in their nomological nets, we examined how the PNI and NPI scales differentiate between patient and normal population and further elucidated the characteristics through which the different expressions of narcissism relate to psychological well-being or distress.

Study 1: Development and Psychometric Properties of the German PNI

Study 1 describes the development of the consensus version of the German PNI and assesses its psychometric properties and factorial structure. We expected to replicate the high internal consistency, as well as the seven factor solution originally obtained by Pincus et al. (2009). Furthermore, confirmatory factor analyses were conducted in search of validation of a higher order factor structure reflecting grandiosity and vulnerability (Wright et al., 2010). In addition, we assessed test–retest temporal stability.

Three preliminary studies gathered data on three different German translation versions of the PNI developed independently by two research groups in Germany ($N = 1,355$ and 642 , respectively) and one in Switzerland ($N = 439$). All three preliminary versions were created through the standard procedure of translation and back-translation by a native speaker. The three samples all consisted of a combination of mixed community and student (30% to 70%) participants. Mean age of the samples was between 27.65 and 35.29 years (range: 14–74; $SDs = 8.72$ – 12.23) and they contained higher proportions of females (73.20%, 57.80%, and 62.32%, respectively). Participants were recruited via website advertisements and mailing lists.

The consensus German PNI was created based on considerations of item characteristics (item–total correlations and factor loadings for PNI total and respective subscales) and expert ratings. The latter involved an iterative process in which five of the coauthors evaluated every translated

item and rated its closeness in meaning to the original version. Discrepancies were discussed until consensus was reached. Each resulting item was either one of the previous translations or a combination thereof. In addition (and with endorsement of the author of the original PNI), two new items were constructed to expand the exploitativeness subscale, because its original five items (which were taken from the NPI; Raskin & Terry, 1988) emphasize primarily grandiosity and manipulativeness but fail to adequately address the exploitative aspect of this scale. These items were created based on the *DSM-IV* Criteria 6 for NPD (APA, 1994). The consensus version was verified by a bilingual psychologist and some final improvements were made by a linguist. The resulting 54-item consensus version was used to evaluate the psychometric properties of the German PNI.

Method

Participants and Procedure

Subsample 1a. Participants for this sample were recruited via the Psytests website of the Humboldt University Berlin and via mailing lists of the University of Mainz, Germany. A total of 398 participants filled out the questionnaire packages. A total of 85 participants (21.5%) terminated the questionnaires before reaching the demographics section. For the remaining participants the mean age was 34.90 years ($SD = 12.23$, range = 18–75), and 79.87% were female. As their highest degree, 38.3% reported high school graduation, 35.8% had graduated from university, and 4.2% had a PhD. The remaining 21.7% had some other professional qualification. About half of the sample (49.2%) reported to be working at present, 27.2% were students, while an additional 11.2% described themselves as working students. The rest were unemployed, unable to work, or retired. Participants received feedback regarding their personal PNI total and subscale scores along with a short explanation of each scale.

Subsample 1b. Participants of this sample ($N = 229$) were students of the Technical University of Chemnitz, Germany, their friends and some family members. Students received partial course credits for participation. Friends and family members were recruited by the students who received additional credit for doing so (every student recruited one or two). Additional participants came in over a link on the German Wikipedia self-esteem website, in exchange for which they received their personal self-esteem score with an interpretation. The mean age in this sample was 29.65 years ($SD = 11.61$, range = 18–75); 54.59% were female. High school graduation was reported as highest degree by 45.0%; another 29.7% had graduated from university, and 17.9% had professional qualifications or had finished secondary school (7.0%). About half of the participants (52.0%) were

currently students, and 38.4% were working. The remainder was unemployed, unable to work, or retired.

Subsample 1c. Participants of this sample were students from the Universities of Bern and of Zürich, Switzerland. All currently enrolled students from the University of Bern (more than 12,000) were emailed an invitation to participate in an online questionnaire study; roughly 10% complied. In Zürich, participants were psychology students volunteering for studies. A total of 1,210 participants resulted from these two universities. One iPad and 40 vouchers for the local movie theaters were raffled off among participants as incentives. The mean age of this sample was 24.16 years ($SD = 5.44$, range = 18-66); 66.78% were female. More than half (53.2%) were full-time students and 39.8% were working students. The remaining 7.0% were working. Two thirds (64.1%) were undergraduates with high school graduation as their current highest degree and one third (31.9%) were graduate students with at least a bachelor's degree.

Final Sample 1 and procedure. Samples 1a through 1c were merged into one large sample. Participants were excluded from analyses if their age was below 18 (13 cases), if they aborted the study before completing the PNI (214 cases), or had highly implausible response patterns (identified through IRT analyses on three different one-dimensional scales [RSE, PES, CSE]; see measure descriptions in Study 2, 34 cases), indicating that they may not have taken the task seriously (item misfit was defined by the outfit criteria in WINSTEPS (Linacre, 2012); only the most extreme outliers were eliminated with outfit of at least >3.9). A total of 259 cases were excluded for one or several of these reasons and are not included in any of the following data descriptions or analyses. The final sample included 1,837 participants: consisted of 67.5% females, had a mean age of 26.78 years (range = 18-75), and 78.1% were part- or full-time students. Although subsamples differed significantly in terms of gender, $\chi^2(2, N = 1,752) = 39.55, p < .001$, age, $F(2, 1,746) = 236.95, p < .001$, and proportion of students, $\chi^2(2, N = 1,752) = 144.6, p < .001$, they did not differ on any of the measures used for validation (cf. Study 2), except for depression. Both of the German subsamples (Mainz: $M = 19.97, SD = 10.65$; Chemnitz: $M = 18.66, SD = 9.24$) had significantly higher values than the Swiss subsample ($M = 14.73, SD = 8.10$); $t(705) = 6.71, p < .001$.

All participants completed the extended 54-item consensus version of the German Pathological Narcissism Inventory as the first measure in different packets of questionnaires of roughly 400 items each. The packages contained different scales and measures depending on the respective subsample (see Study 2).

Sample 2 and procedure. Sample 2 was used to calculate test-retest reliability only. Participants were introductory

psychology students who completed the PNI questionnaire twice with an interval of 5 weeks in a lecture course at the University of Mainz. Of the 71 participants who completed the questionnaire at Time Point 1, 54 also completed it at Time Point 2. The 17 participants who failed to complete the questionnaire the second time did not differ significantly from the others on their PNI total score or its subscales. No other information was obtained from these participants.

Measures

German Pathological Narcissism Inventory (German PNI). The German PNI contains 54 items to measure pathological narcissism. It includes a translation of the 52 items of the original English PNI (Pincus et al., 2009), plus two new items we constructed to extend the exploitative subscale. These were created by adapting some of the *DSM* diagnostic criteria. The original consists of the following seven subscales: *exploitativeness* (EXP, 5 items), *grandiose fantasy* (GF, 7 items), *self-sacrificing self-enhancement* (SSSE, 6 items), *entitlement rage* (ER, 8 items), *devaluing* (DEV, 7 items), *contingent self-esteem* (CSE, 12 items), and *hiding the self* (HS, 7 items). The two new exploitativeness items created are: "I have a natural talent to make people do what I want them to do" and "I can usually recruit others for my projects without them realizing it." Items are scored on a 6-point scale ranging from 0 (*not at all like me*) to 5 (*very much like me*).²

Results and Discussion

Descriptives. Scale intercorrelations, coefficients alpha, and mean values for the final combined sample (Sample 1, $N = 1,837$) are reported in Table 1. Missing data were handled by excluding questionnaires pairwise. Coefficients alpha for the subscales were between .82 (SSSE) and .92 (CSE), while the PNI total had an alpha coefficient of .94, which is on par with the alphas found in Pincus et al. (2009) and other recent translations (Fossati et al., 2014; Jakšić et al., 2014; Karakoula et al., 2013; You et al., 2013). The two newly created items of the EXP scale both substantially improved the alpha of this subscale (.85) relative to having only the 5 original items (.74); they also had the highest item-scale correlations (.75, .80; the other EXP items: .40-.71). Scale intercorrelations were all above .36 except for the EXP subscale, which had intercorrelations ranging from .05 to .26 (again akin to the other translation studies previously mentioned). We found significant gender differences for five subscales, with men scoring significantly higher on the EXP, the GF, and the SSSE subscales and women scoring significantly higher on the CSE and DEV subscales. Except for the SSSE subscale, these gender differences are consistent with those found by Pincus et al. (2009) and Wright et al. (2010). Finally, in contrast to Pincus et al. (2009), but in line with Wright et al. (2010), Kealy et al.

Table 1. PNI Scale Intercorrelations and Scale Statistics.

	1	2	3	4	5	6	7	Men ^a (N = 569)		Women ^a (N = 1,183)		t	d
								M	SD	M	SD		
PNI scale													
1. CSE	(.92)							1.87	0.97	2.13	1.01	-5.24***	0.27
2. EXP	-.02	(.85)						2.40	0.93	2.01	0.88	8.44***	0.43
3. SSSE	.51	.19	(.82)					2.53	0.96	2.39	0.94	2.94**	0.15
4. HS	.51	.13	.36	(.83)				2.19	0.99	2.23	1.02	-0.77	0.04
5. GF	.54	.26	.53	.42	(.85)			2.62	1.02	2.40	1.02	4.34***	0.22
6. DEV	.61	.05	.39	.58	.41	(.83)		1.46	0.91	1.65	0.94	-4.19***	0.21
7. ER	.59	.24	.43	.38	.56	.49	(.84)	1.84	0.92	1.90	0.88	-1.21	0.06
PNI total								2.09	0.68	2.09	0.67	-0.10	0.01
PNI gn (P/W2)								2.29/2.52	.73/.71	2.10/2.27	.70/.71	5.14***/6.95***	0.25/0.35
PNI vn (P/W2)								2.01/1.84	.75/.78	2.10/1.97	.77/.76	-2.34*/-3.59***	0.12/0.18

Note. PNI = Pathological Narcissism Inventory; CSE = Contingent Self-Esteem; EXP = Exploitative; SSSE = Self-Sacrificing Self-Enhancement; HS = Hiding the Self; GF = Grandiose Fantasy; DEV = Devaluing; ER = Entitlement Rage; PNI gn/PNI vn P = Pathological Narcissism Inventory grandiose/vulnerable aspects according to Pincus 09 [gn: EXP, GF, SSSE, ER; vn: CSE, HS, DEV]; PNI gn W2/PNI vn W2 = Pathological Narcissism Inventory grandiose/vulnerable aspects according to Wright 2 [gn: EXP, GF, SSSE; vn: CSE, HS, DEV, ER]. Coefficient alpha appears on the diagonal. N = 1,837.

^aMissing gender = 85.

*p < .05. **p < .01. ***p < .001.

Table 2. Loadings of Principal-Components Analyses (PCA), Confirmatory Factor Analyses (CFA), and Exploratory Structural Equation Modelling (ESEM).

Components listed in order of variance explained	Scale	Total items	Range of loadings (PCA)	Range of standardized loadings (CFA, Model 1)	Range of standardized loadings (ESEM, Model 5)
1	CSE	12	.37-.71	.60-.84	.37-.84
2	EXP	7	.48-.86	.40-.92	.43-.93
3	HS	7	.30-.77	.47-.84	.22-.73
4	SSSE	6	.41-.79	.41-.86	.37-.86
5	GF	7	.58-.74	.60-.84	.50-.79
6	ER	8	.39-.68	.51-.83	.36-.64
7	DEV	7	.39-.80	.59-.83	.39-.85

Note. PNI = Pathological Narcissism Inventory; CSE = Contingent Self-Esteem; EXP = Exploitative; SSSE = Self-Sacrificing Self-Enhancement; HS = Hiding the Self; GF = Grandiose Fantasy; DEV = Devaluing; ER = Entitlement Rage. N = 1,837.

(2012), and Jakšić et al. (2014), there was no gender difference for the PNI total score.

Test-Retest Reliability. The coefficient alpha for the PNI total score in Sample 2 (N = 54) was .95 at both time points. Alphas for the subscales ranged from .80 to .91. The retest reliability for the total score was $r_{tt} = .86$. The retest reliabilities for the subscales ranged from $r_{tt} = .75$ (DEV and SSSE) to $r_{tt} = .87$ (CSE and GF).

Examining First-Order Factor Structure. We followed a multi-tiered approach in evaluating internal test structure, using a variety of EFA and CFA techniques, as suggested by Hopwood and Donnellan (2010). In a first step, we performed on the final Sample 1, an identical principle components

analysis with oblique rotation, as Pincus et al. (2009), with extraction of components fixed to seven, as indicated also by parallel analysis (PCA was used rather than common factor EFA for comparison purposes). Through this procedure, we reproduced the identical factor structure with similar corresponding loadings, as in the original validation paper. All items were assigned to their theoretical factor as expected with the lowest primary loading being .30 and an average loading of .62 (a summary of the analysis is presented in Table 2). There were three items with secondary loadings above .30; all of them however had higher loadings on their respective theoretical factor. Consistent with their item-scale correlations, the two newly created additional items for the exploitative subscale had the highest factor loadings on their assigned component (.86 and .82).

Table 3. Overview of CFA, ESEM, and ESEM within CFA Models with WLSMV Estimator.

Model description	χ^2	df	p	CFI	RMSEA	RMSEA [90% CI]	SRMR
CFA							
1. Seven factors lower order	10909.92	1,356	<.001	.892	.062	[.061, .063]	.059
2. Seven factors lower order (original Pincus 09)	10561.14	1,343	<.001	.896	.061	[.061, .062]	.058
ESEM							
3. One factor lower order	45304.26	1,377	<.001	.504	.132	[.131, .133]	.115
4. Two factors lower order	23853.19	1,324	<.001	.746	.096	[.095, .097]	.074
5. Seven factors lower order	6697.84	1,074	<.001	.937	.053	[.052, .055]	.028
ESEM within CFA (EwC)							
6. Single second-order factor ^a	6849.61 (12579.27)	1,090 (1,370)	<.001	.935 (.874)	.054 (.067)	[.052, .055] (.066, .068)	.030 (.070)
7. Two second-order factors (Pincus 09) ^a	6753.13 (12066.00)	1,089 (1,369)	<.001	.936 (.879)	.053 (.065)	[.052, .054] (.064, .066)	.030 (.067)
8. Two second-order factors (Wright 1) ^a	6787.66 (12397.37)	1,089 (1,369)	<.001	.936 (.876)	.053 (.066)	[.052, .055] (.065, .067)	.030 (.068)
9. Two second-order factors (Wright 2) ^a	6756.57 (12168.79)	1,089 (1,369)	<.001	.936 (.878)	.053 (.066)	[.052, .054] (.064, .067)	.030 (.068)

Note. CFA = confirmatory factor analysis; ESEM = exploratory structural equation modeling; ESEM within CFA = higher order ESEM conducted in an ESEM-within-CFA (EwC) framework; CFI = comparative fit index; RMSEA = root mean square error of approximation; CI = confidence interval; SRMR = standardized root mean square residual. $N = 1,837$.

^aValues in parentheses following the EwC statistics are the statistics from the corresponding CFA analyses.

Further congruent with Pincus et al. (2009), the seven components accounted for 54.24% of the item variance.

In a second step, we conducted a confirmatory factor analysis (CFA) with robust weighted least squares estimation (WLSMV) for ordinal data using MPLUS 7.3 (Muthén & Muthén, 2014) to validate the exploratory first-order structure results. We began with a basic model, in which all seven factors were permitted to correlate freely, with no correlations allowed for error terms initially (Model 1); subsequently we modified this model to replicate the CFA model specified by Pincus et al. (2009) allowing exactly the same 13 error covariances between items with similar wording (Model 2). As can be seen in Table 3, these models had acceptable root mean square error of approximations (RMSEAs <.06) and good standardized root mean square residual (SRMR <.08) but fell just below conventional fit criteria otherwise (i.e., both comparative fit index [CFIs] <.90; Hu & Bentler, 1999), with the Pincus original (Model 2) being somewhat better ($\Delta\chi^2 = 561.72$, $\Delta df = 13$, $p < .001$), using the DIFFTEST option for chi-square difference testing for a WLSMV estimator (Muthén & Muthén, 2014). A summary of the standardized factor loadings from the CFA for Model 1 are presented in Table 2; factor correlations ranged from $-.001$ to $.699$ (average $r = .47$).

Inspection of the modification indices for Model 1 in order to identify possible causes of model lack of fit revealed (1) a number of error covariances (not all of which overlapped with Pincus original) and (2) a few items with high cross-loadings on other than their assigned PNI subscales. These covariances and cross-loadings all made logical sense in that they had content- or wording-overlap. This indicates that the CFA assumptions of simple structure are

too restrictive and do not represent the internal structure of the PNI. It is important to point out that these findings of lack of fit of CFA simple structure are consistent with other translations of the PNI, which indeed all have fit indices for the Pincus original model worse than ours (i.e., CFIs of .81, .76, .59, Jakšić et al., 2014; Karakoula et al., 2013; You et al., 2013, respectively), albeit using maximum likelihood estimators. These fits only improved upon item-parceling, a procedure, which is inappropriate when its underlying assumption of unidimensionality is violated (Marsh, Lüdtke, Nagengast, Morin, & Von Davier, 2013).

In a third step, we carried out exploratory structural equation modeling (ESEM), which represents an integration of CFA/SEM and traditional EFA, allowing free estimations of cross-loadings and which provides confirmatory tests of a priori factor structures. On theoretical bases, we computed a single-, a two-, and a seven-factor model using Mplus 7.3 (Muthén & Muthén, 2014) using a WLSMV estimator and a target rotation, designating all cross-loadings (i.e., loadings of items on factors other than their theoretical subscale) to be as close to zero as possible (Marsh, Morin, Parker, & Kaur, 2014). The single factor represents a unitary measure (Model 3); the two factors (Model 4) are based on the assumption of grandiose and vulnerable aspects of the PNI and were constructed to represent these as originally proposed by Pincus et al. (2009); and the seven factors (Model 5) correspond to the seven originally postulated subscales (see Model 1 above). Whereas the fits of the ESEM solution for both a single, as well as for the two-factor solution were poor, the seven-factor model now achieved acceptable fit (see Table 3). Moreover, the fit of this model (#5) was significantly better than either the

single-factor model ($\Delta\chi^2 = 22543.23$, $\Delta df = 303$, $p < .001$) or the two-factor model ($\Delta\chi^2 = 10959.63$, $\Delta df = 250$, $p < .001$). A summary of the standardized factor loadings from the ESEM for Model 5 are presented in Table 2; latent factor correlations ranged from $-.041$ to $.571$ (average $r = .310$).

Importantly, as with the PCA, the loading matrix of the seven factor model, exactly represented the original structure with all items having the highest loadings on their theoretical factor and low cross-loadings on other factors (average $r = .075$). At the same time, the loading matrix also confirms the deviation from simple structure as suggested by the modification indices in the CFA, showing that all of the items have significant secondary loadings (up to $.30$). Therefore, despite unsatisfactory CFA model fit, it can be concluded that we replicated the original lower order factor structure, as the variance in the items best can be explained (and satisfactorily with ESEM) through the seven factors. In addition, a two-group analysis examining measurement invariance supported the invariance of factor loadings across gender—fit indices were in fact better for the more parsimonious restricted model than for the unconstrained model (CFI = $.972$ vs. $.948$; RMSEA = $.033$ vs. $.047$).

Examining Higher Order Factor Structure. Different theoretical assumptions have led to the calculation of somewhat different grandiose and vulnerable higher order factors in the literature. As ESEM statistical software programs per se do not allow specification of higher order models, we tested these models employing an ESEM-within-CFA (EwC) approach (Morin, Marsh, & Nagengast, 2013), in which the final (target) rotated estimates from Model 5 were used as starting values to estimate the higher order models using MPLUS 7.3. In addition for comparison purposes with earlier studies, we also computed higher order CFAs. In replication of Wright et al. (2010), we first estimated a model with one single higher order factor encompassing all seven first-order factors (Model 6). This model had a satisfactory fit with EwC but not CFA (see Table 3).

Next, we constructed the three different two factor second-order models proposed by Pincus et al. (2009) and Wright et al. (2010). For the first of these, we tested the originally theoretically proposed—but empirically not tested—model by Pincus et al. (2009), which assigns EXP, GF, SSSE, and ER to the grandiose factor (Model 7). Thereafter, we tested the two models that were compared empirically by Wright et al. (2010), which differ in their assignment of SSSE and ER. Wright et al.'s Model 1 (our Model 8) includes EXP, GF, and ER on the grandiose factor, whereas their Model 2 grandiosity is comprised of EXP, GF, and SSSE (our Model 9). In all models, the vulnerability component encompasses CSE, HS, and DEV (as well as SSSE or ER, in Wright et al.'s Model 1 and 2, respectively). Using the EwC approach, all of these two factor second-order models

reached satisfactory fit in our sample with CFIs above the acceptable fit criteria ($>.90$), good RMSEAs ($<.06$), and good SRMR ($<.08$). However, none of the models met conventional fit criteria using CFA (Table 3). It is important to note that rerunning all models while excluding our two newly created items on the EXP subscale did not improve any of the comparative fit indices; indeed they were all slightly worse.

In comparison to the two-factor second-order models, in terms of the various fit indices they are in essence statically equivalent, with Wright 1 faring minimally worse than Pincus original or Wright 2. Note that information criteria cannot be computed with WLSMV estimators (as AICs are based on log-likelihood values), therefore we have no statistical bases for comparing these models, as they are not nested. In short, in contrast to the CFA results, our EwC analyses suggest that a two-factor higher order structure provides an adequate representation of the data but gives no clear indication as to which model to prefer.

Conclusions

Psychometric properties of the German PNI were consistent with the original PNI scale (Pincus et al., 2009). Internal consistencies for PNI total and the subscales were high throughout and in the same range as in the original. The two newly created items for the EXP subscale improved the scale properties psychometrically and also theoretically in terms of better content coverage. Gender mean differences were mostly similar to the ones found for the original with two divergences. In particular, there was no gender difference on the PNI total score in our data, whereas in the original, women scored higher. Other studies since, however, also have found no gender differences on PNI total (Jakšić et al., 2014; Kealy et al., 2012; Maxwell et al., 2011; Wright et al., 2010), suggesting this may be a robust finding. Furthermore, for the SSSE subscale, we found the reverse of Pincus et al. (2009), with the men scoring significantly higher on this subscale rather than the women. Our finding appears to be at odds with other samples, in which the gender difference on SSSE tends to be in the opposite direction, even if not significantly so (e.g., Maxwell et al., 2011; Wright et al., 2010). Thus, this may represent a chance finding. The factor loadings were invariant across gender, consistent with the findings of gender invariance for factor structure reported by Wright et al. (2010). Test-retest reliability over a 5-week interval was excellent.

The principal components analysis revealed identical assignment of items to factors as in the original scale, a structure that was also confirmed in the CFA and ESEM analyses. Importantly, the seven-factor lower order structure fit the data better than either a single or a two-factor structure. Furthermore, we also could confirm the higher order factor structures postulated based on theoretical assumptions in

earlier research (Pincus et al., 2009; Wright et al., 2010) using EwC. However, our findings leave open, which of the subscale compositions is best suited for the formation of a grandiose and vulnerable factor. All considered, it appears that Wright Model 1 consistently falls short of Wright Model 2—in our and in earlier findings (e.g., Karakoula et al., 2013; Wright et al., 2010; You et al., 2013). Hence it makes sense to discard Wright Model 1. As for the other two models, we believe it is premature to opt for Wright Model 2 over the Pincus original model, as only one other study thus far also tested the latter and consistent with our results found the two models to be equivalent (Karakoula et al., 2013).³ Therefore, the higher order factor structure remains an open question awaiting further theoretical deliberation and empirical investigation.

Study 2: Validity of the PNI: Expanding the Nomological Net

In Study 2 we examined the association between the PNI, its subscales, as well as its higher order factors (grandiose and vulnerable)⁴ with other narcissism measures, as well as a large variety of personality and psychopathology measures to support and expand its content and construct validity. In order to replicate and extend the findings from Pincus et al. (2009), we assessed narcissism with standard measures for grandiose and vulnerable narcissism, narcissistic personality disorder, self-esteem, empathy, shame, aggression, borderline personality, and interpersonal problems. In addition to these constructs, we assessed personality with the five-factor model, emotions and affect, risk behavior and substance abuse, psychopathology in terms of general symptoms, depression, and well-being. In line with previous studies (Maxwell et al., 2011; Miller, Hoffman, et al., 2011; Pincus et al., 2009; Roche et al., 2013) and theoretical considerations, we predicted positive correlations of the PNI with the full spectrum of personality problems, psychological distress and dysfunctional behavior. On the other hand, we expected negative correlations with self-esteem, well-being, positive emotionality, and a general orientation to happiness and satisfaction with life.

More precisely we expected to replicate the low correlations of the PNI total score with the NPI as reported by Pincus et al. (2009). The only subscale expected to have high correlations with the NPI was the EXP subscale, which measures very similar grandiose aspects of narcissism as the NPI (and with which it shares item overlap). Furthermore, we expected to replicate the positive correlation pattern of the PNI found by Pincus et al. (2009) with narcissism measures covering more dysfunctional and vulnerable aspects, that is, vulnerable narcissism and narcissistic personality disorder. In terms of the five-factor model of personality we expected high positive correlations of vulnerable aspects of PNI and neuroticism, as well as negative correlations with

extraversion and agreeableness, similar to findings reported in Miller, Hoffman, et al. (2011) and in Miller, Few, et al. (2013). We further expected divergent relations between narcissism as measured by the PNI and NPI and externalizing behavior, interpersonal problems, self-related emotions, and clinical symptoms. These expectations are based on theoretical considerations about the more self-destructive behavior and emotional suffering of persons scoring high on vulnerable and/or pathological narcissism (Cain et al., 2008; Pincus & Lukowitsky, 2010), as well as on previous findings based on the PNI largely supporting these assumptions (Miller et al., 2010; Miller, Hoffman, et al., 2011; Roche et al., 2013; K. M. Thomas et al., 2012).

Method

Participants and Procedure. Participants for this study were the subjects in the final Sample 1 described in Study 1. Different subsamples received different questionnaire packages, thus sample sizes varied for each questionnaire (see Tables 4 through 6). There were five subsamples in total, created by further subdividing subsamples 1a and 1c into two smaller samples (assignments were random). Questionnaire packages were administered via computer in form of web-based surveys. Completion of questionnaires took 40 to 50 minutes.

Measures

Narcissism Measures

Narcissistic Personality Inventory. The NPI (Raskin & Terry, 1988; Schütz, Marcus, & Sellin, 2004) is the most widely used self-report measure of narcissism. It measures primarily the grandiose aspects of narcissism (Pincus et al., 2009), based on the criteria of pathological narcissism specified in the *DSM-III* (APA, 1980). Its 40 items have a forced-choice format. Coefficient alpha in this sample for the total score was .85. For comparison purposes with Pincus et al. (2009), we also computed Emmons' (1987) four factors: Entitlement/Exploitativeness (E/E; $\alpha = .54$), Superiority/Arrogance (S/A, $\alpha = .60$), Self-Absorption/Self-Admiration (S/S, $\alpha = .67$), and Leadership/Authority (L/A, $\alpha = .79$).

Hypersensitive Narcissism Scale. The HSNS (Hendin & Cheek, 1997) is a 10-item self-report that measures vulnerable narcissism. Items are answered on 5-point scales, from 1 (*strongly disagree*) to 5 (*strongly agree*). The scale was translated into German in the context of the present study by three postgraduate psychology students. A fourth bilingual psychologist checked the translations and discrepancies were resolved by discussion ($\alpha = .66$).

Dimensional Assessment of the Personality Pathology—Basic Questionnaire (DAPP-BQ). The DAPP-BQ (Angleitner, Osten-

dorf, & Riemann, 2001; Livesley & Jackson, 2009) is a self-report measurement assessing pathological personality traits. In this study, we used the 16 items of the narcissism subscale ($\alpha = .90$). Items are scored on 5-point scales ranging from -2 (*very unlike me*) to 2 (*very like me*).

Structural Clinical Interview for DSM-IV Personality Disorder–Personality Questionnaire (SCID-II-PQ). The SCID-II-PQ (First, Spitzer, Gibbon, & Williams, 1997; Wittchen, Zaudig, & Fydrich, 1997) is a self-report screening questionnaire to assess *DSM-IV* PD criteria using a dichotomous answering format (yes/no). In this study, we used the 16 questions for narcissistic personality disorder ($\alpha = .77$).

Personality Style and Disorder Inventory (PSSI). The PSSI (Kuhl & Kazén, 2009) is a self-report scale, which measures personality styles as nonpathologic counterparts to *DSM-IV* PD. In this study, we used the narcissism subscale with 10 items ($\alpha = .73$). Items are answered on 4-point scales ranging from 0 (*does not apply at all*) to 3 (*applies fully*).

Validity Measures

Rosenberg Self-Esteem Scale (RSE). The RSE (Rosenberg, 1965; von Collani & Herzberg, 2003) is a 10-item self-report measure of global self-esteem. Items are rated on 4-point scales ranging from 1 (*strongly disagree*) to 4 (*strongly agree*); $\alpha_{\text{current sample}} = .91$.

State-Trait Grandiosity Scale (STGS). The STGS (Rosenthal, Hooley, & Steshenko, 2003) consists of 16 adjectives measuring grandiosity. Adjectives are rated on 7-point scales ranging from 1 (*not at all*) to 7 (*extremely*). A German translation existed from an earlier unpublished study (Schütz, 1999); ($\alpha_{\text{current sample}} = .93$).

Psychological Entitlement Scale (PES). The PES (Campbell, Bonacci, Shelton, Exline, & Bushman, 2004) is a nine-item self-report measure assessing a person's feeling of deserving better and being entitled to more than others. Items are rated on 7-point scales ranging from 1 (*strong disagreement*) to 7 (*strong agreement*). The scale was translated into German in the context of the present study, using the same procedure described above for the HSNS ($\alpha = .85$).

NEO Five Factor Inventory (NEO-FFI). The NEO-FFI (Borkenau & Ostendorf, 1993; Costa & McCrae, 1992) is a 60-item questionnaire to measure the five dimensions of the five-factor model. Items are scored on 5-point scales ranging from 1 (*strong disagreement*) to 5 (*strong agreement*). The alpha coefficients in this sample were .90 (*neuroticism*), .83 (*extraversion*), .76 (*openness*), .79 (*agreeableness*), and .86 (*conscientiousness*).

Saarbrücker Persönlichkeits-Fragebogen – Interpersonal Reactivity Index (SPF-IRI). The SPF (Paulus, 2009) is the German version of the IRI (Davis, 1983) and measures empathy with 16 items on four subscales, of which only 2 were used in the current study. Items are rated on 5-point scales ranging from 1 (*never*) to 5 (*always*). Coefficients alpha in this sample were .68 (*empathic concern*) and .78 (*perspective taking*).

Test of Self-Conscious Affect (TOSCA). The TOSCA (Kocherscheidt, Fiedler, Kronmüller, Backenstrass, & Mundt, 2002; Tangney, Wagner, & Gramzow, 1989) assesses characteristic responses to 10 affectively negative and 5 affectively positive scenarios. Probabilities for each potential response are rated on 5-point scales ranging from 1 (*not likely*) to 5 (*very likely*). In this study, we calculated proneness to shame ($\alpha = .82$), guilt ($\alpha = .74$), pride in self (alpha pride; $\alpha = .58$), and pride in behavior (beta pride; $\alpha = .59$).

Buss–Perry Aggression Questionnaire (BPAQ). The BPAQ (Buss & Perry, 1992; von Collani & Werner, 2005) is a 29-item self-report measure to assess four different forms of aggression. Items are scored on 5-point scales ranging from 1 (*extremely uncharacteristic of me*) to 5 (*extremely characteristic of me*). Coefficients alpha in this sample were .84 (*anger*), .84 (*physical aggression*), .67 (*verbal aggression*), and .83 (*hostility*).

UPPS Impulsive Behavior Scale. The UPPS (Schmidt, Gay, d'Acremont, & Van der Linden, 2008; Whiteside & Lynam, 2001) is a 45-item scale to measure different facets of impulsivity. Items are rated on 4-point scales ranging from 1 (*strongly agree*) to 4 (*strongly disagree*). In this study, only sensation seeking was examined, which taps enjoyment of exciting activities and openness to new experiences ($\alpha = .85$).

Alcohol Consumption Questions (AUDIT-C). The AUDIT-C (Bush, Kivlahan, McDonell, Fihn, & Bradley, 1998; Rumpf, Hapke, Meyer, & John, 2002) is a three-item short form of the Alcohol Use Disorders Identification Test. It assesses frequency and quantity of current alcohol consumption as well as frequency of binge drinking ($\alpha_{\text{current sample}} = .71$). Items are rated on 5-point scales ranging from 0 to 4 using different quantifying scale descriptions tailored to item content.

Experience with drugs. Based on items from Miller et al. (2010) we developed six items to assess the consumption of legal and illegal drugs. The subscale for legal drugs (two items) assessed the misuse of hypnotics and tranquilizers. Items were rated on 5-point scales ranging from 1 (*never*) to 5 (*more than once a week*); $\alpha_{\text{current sample}} = .65$. The subscale for illegal drugs (four items) assessed consumption of Marijuana, Cocaine, Psychedelics, and other hard drugs

(e.g., heroine, ecstasy). These items were rated on 3-point scales ranging from 1 (*never*) to 3 (*more than 10 times*); $\alpha_{\text{current sample}} = .68$.

Inventory of Interpersonal Problems—Short Version (IIP-32). The IIP-32 (Horowitz, Rosenberg, Baer, Ureno, & Villaseñor, 1988; A. Thomas, Brähler, & Strauss, 2011) measures self-reported difficulties of interpersonal functioning within the circumplex model subdivided into eight octants (subscales). Items are rated on 5-point scales ranging from 0 (*not at all*) to 4 (*very much*). The alpha coefficients in this sample were .70 (domineering), .67 (vindictive), .79 (cold), .74 (socially avoidant), .76 (nonassertive), .72 (exploitable), .70 (overly nurturant), and .70 (intrusive).

Brief Symptom Inventory (BSI). The BSI (Derogatis, 1993; Franke, 2000) is a 53-item short form of the Symptom Checklist (Derogatis & Lazarus, 1994) to assess subjective physical and mental impairment. Items are rated on 5-point scales ranging from 0 (*not at all*) to 4 (*extremely*). In this study, we used the Global Severity Index (GSI, $\alpha = .96$), an overall score for psychological distress that can be calculated from the nine subscales.

Center for Epidemiologic Studies Depression (CES-D). We used the German version of the CES-D (Radloff, 1977), the Allgemeine Depressions Skala (Hautzinger & Bailer, 1993) to assess depressive symptoms in the general population ($\alpha = .88$). It has 20 items answered on 4-point scales, from 0 (*rarely or none of the time*) to 3 (*most or all of the time*).

Positive and Negative Affect Schedule (PANAS). The PANAS (Krohne, Egloff, Kohlmann, & Tausch, 1996; Watson, Clark, & Tellegen, 1988) is a 20-item measure to assess positive and negative affectivity. Ten positive and 10 negative adjectives are rated on 5-point scales, from 1 (*very slightly or not at all*) to 5 (*extremely*). Our instructions asked to what extent participants are feeling this way right now ($\alpha = .85/.87$ for positive/negative affect, respectively).

McLean Screening Instrument for Borderline Personality Disorder (MSI-BPD). The MSI-BPD (Kröger, Vonau, Kliem, & Kosfelder, 2010 [German translation by S. Hörz]; Zanarini et al., 2003) is a 10-item screening instrument for borderline personality with a dichotomous answer format (yes/no); $\alpha_{\text{current sample}} = .83$.

Satisfaction With Life Scale (SWLS). The SWLS (Diener, Emmons, Larsen, & Griffin, 1985; Glaesmer, Grande, Braehler, & Roth, 2011) is a five-item measure for life satisfaction. The items are rated on 7-point scales, from 1 (*strongly disagree*) to 7 (*strongly agree*); $\alpha_{\text{current sample}} = .83$.

Orientations to Happiness Questionnaire (OTH). The OTH (Peterson, Park, & Seligman, 2005; Ruch, Harzer, Proyer, Park, & Peterson, 2010) measures three different routes to happiness (pleasure, engagement, and meaning) with six items each. Items are rated on 5-point scales ranging from 1 (*very much unlike me*) to 5 (*very much like me*). Coefficients alpha in this sample were .73 (pleasure), .59 (engagement), and .76 (meaning). For the sake of simplification, we constructed an overall happiness index ($\alpha = .73$), as the individual subscale findings provided no additional information.

Table 4. Correlations among Narcissism Measures.

	NPI (N = 1,772)	NPI EE (N = 1,778)	NPI LA (N = 1,776)	NPI SS (N = 1,774)	NPI SA (N = 1,776)	HSNS (N = 1,275)	DAPP-BQ (N = 779)	SCID-II (N = 502)	PSSI (N = 529)
PNI Total	.11***	.46***	.01	-.03	-.01	.53***	.76***	.49***	.57***
CSE	-.14***	.35***	-.20***	-.18***	-.25***	.56***	.65***	.30***	.38***
EXP	.59***	.31***	.52***	.30***	.60***	-.05	.32***	.41***	.49***
SSSE	.01	.13***	.00	-.01	-.03	.21***	.51***	.22***	.29***
HS	-.08***	.24***	-.12***	-.17***	-.12***	.45***	.42***	.27***	.29***
GF	.22***	.39***	.12***	.12***	.06*	.35***	.74***	.43***	.60***
DEV	-.12***	.24***	-.17***	-.15***	-.19***	.50***	.46***	.28***	.31***
ER	.21***	.51***	.09***	.09***	.07***	.46***	.64***	.56***	.55***
PNI gn P	.44*** ^a	.53*** ^a	.32*** ^a	.22*** ^a	.31*** ^a	.33*** ^a	.73*** ^a	.60*** ^a	.69*** ^a
PNI gn W2	.36*** ^b	.38*** ^b	.28*** ^b	.18*** ^b	.27*** ^b	.23*** ^b	.69*** ^b	.47*** ^b	.60*** ^b
PNI vn P	-.10*** ^a	.31*** ^a	-.16*** ^a	-.16*** ^a	-.19*** ^a	.54*** ^a	.64*** ^a	.33*** ^a	.40*** ^a
PNI vn W2	-.04 ^b	.41*** ^b	-.13*** ^b	-.13*** ^b	-.16*** ^b	.61*** ^b	.66*** ^a	.42*** ^b	.46*** ^b

Note. PNI = Pathological Narcissism Inventory; NPI = Narcissistic Personality Inventory; NPI EE = Entitlement/Exploitativeness; NPI LA = Leadership/Authority; NPI SS = Self-Absorption/Self-Admiration; NPI SA = Superiority/Arrogance; HSNS = Hypersensitive Narcissism Scale; DAPP-BQ = Dimensional Assessment of the Personality Pathology—Basic Questionnaire (Narcissism Items); SCID-II = Structural Clinical Interview—II for Personality Disorder (Narcissism Items); PSSI = Personality style and disorder inventory (Narcissism Items); CSE = Contingent Self-Esteem; EXP = Exploitative; SSSE = Self-Sacrificing Self-Enhancement; HS = Hiding the Self; GF = Grandiose Fantasy; DEV = Devaluing; ER = Entitlement Rage; PNI gn P/PNI vn P = Pathological Narcissism Inventory grandiose/vulnerable aspects according to Pincus 09 [gn: EXP, GF, SSSE, ER; vn: CSE, HS, DEV]; PNI gn W2/PNI vn W2 = Pathological Narcissism Inventory grandiose/vulnerable aspects according to Wright 2 [gn: EXP, GF, SSSE; vn: CSE, HS, DEV, ER]. Correlations within columns for PNI gn P versus PNI gn W2, and for PNI vn P versus PNI vn W2 with different superscripts are significantly different from each other ($p < .01$).

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

Table 5. Validity Measures I: Self-Esteem and Emotions.

Variable	Self-esteem (N = 1,837)	Entitlement (N = 1,495)	Grandiosity (N = 1,441)	Empathic concern (N = 1,119)	Perspective taking (N = 1,119)	Shame (N = 321)	Guilt (N = 321)	Beta Pride (N = 321)	Alpha Pride (N = 321)
NPI	.36*** ^a	.44*** ^a	.61*** ^a	-.18*** ^a	-.07* ^a	-.37*** ^a	-.24*** ^a	.25*** ^a	.20*** ^a
PNI total	-.47*** ^b	.35*** ^b	.13*** ^b	.17*** ^b	-.02 ^a	.39*** ^b	.07 ^b	.19*** ^a	.21*** ^a
CSE	-.63***	.18***	-.14***	.20***	-.01	.49***	.13*	.12*	.17***
EXP	.19***	.31***	.47***	-.06	.02	-.17***	-.20***	.17***	.12*
SSSE	-.22***	.12***	.13***	.26***	.10***	.31***	.21***	.18***	.20***
HS	-.45***	.16***	.01	.06*	.00	.35***	.04	.06	.12*
GF	-.23***	.34***	.24***	.14***	.01	.21***	.08	.23***	.19***
DEV	-.49***	.19***	-.02	.16***	-.01	.42***	.12*	-.01	.00
ER	-.22***	.44***	.22***	.03	-.18***	.23***	-.04	.24***	.25***
PNI gn P	-.12*** ^a	.47*** ^a	.40*** ^a	.06 ^a	-.06 ^a	.12* ^a	-.06 ^a	.27*** ^a	.23*** ^a
PNI gn W2	-.13*** ^a	.34*** ^b	.37*** ^b	.16*** ^b	.06 ^b	.16*** ^a	.04 ^b	.25*** ^a	.22*** ^a
PNI vn P	-.57*** ^a	.21*** ^a	-.01 ^a	.22*** ^a	.02 ^a	.49*** ^a	.15*** ^a	.11 ^a	.15*** ^a
PNI vn W2	-.57*** ^a	.30*** ^b	.02 ^b	.14*** ^b	-.06 ^b	.46*** ^a	.08 ^b	.12 ^a	.16*** ^a

Note. NPI = Narcissistic Personality Inventory; PNI = Pathological Narcissism Inventory; CSE = Contingent Self-Esteem; EXP = Exploitative; SSSE = Self-Sacrificing Self-Enhancement; HS = Hiding the Self; GF = Grandiose Fantasy; DEV = Devaluing; ER = Entitlement Rage; PNI gn P/PNI vn P = Pathological Narcissism Inventory grandiose/vulnerable aspects according to Pincus 09 [gn: EXP, GF, SSSE, ER; vn: CSE, HS, DEV]; PNI gn W2/PNI vn W2 = Pathological Narcissism Inventory grandiose/vulnerable aspects according to Wright 2 [gn: EXP, GF, SSSE; vn: CSE, HS, DEV, ER]. Correlations within columns for NPI versus PNI, for PNI gn P versus PNI gn W2, and for PNI vn P versus PNI vn W2 with different superscripts are significantly different from each other ($p < .01$).

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

Results and Discussion

Narcissism and Closely Related Constructs. Correlations between the various narcissism measures are shown in Table 4. As expected, the low correlation of the PNI total score with the NPI was replicated, as was the NPI's high correlation with the exploitative (EXP) subscale, and PNI grandiosity. The correlations of PNI total with other narcissism measures were between $r = .49$ (SCID-II-PQ) and $r = .76$ (DAPP-BQ). This correlation pattern represents a conceptual replication and extension of the correlations found by Pincus et al. (2009), as we assessed three additional pathological narcissism measures.

Further support for convergent and divergent validity was obtained with PNI total score, PNI grandiosity/vulnerability, and subscale correlations with self-esteem, grandiosity, and entitlement. Table 5 reports these correlations, as well as significant differences (Steiger Z) between them for the PNI versus NPI (indicated by differing subscripts). Consistent with Pincus et al. (2009) we found negative correlations with self-esteem for the PNI and all its subscales except for EXP, whereas there was a positive correlation for the NPI. Furthermore, and in contrast to the NPI, the PNI showed the expected low correlations with grandiosity, with the EXP subscale again being the exception (and as a result PNI grandiosity). For entitlement, the correlations for the PNI were generally moderate (and lower than for the NPI) with the highest correlation found for the entitlement rage subscale. This pattern is consistent with clinical theory that entitlement is common to both grandiose and vulnerable narcissism, but vulnerable narcissism goes along with disavowing these feelings (Dickinson & Pincus, 2003).

Self/Other-Relevant Emotions. Empathy as assessed by two subscales of the SPF-IRI (see Table 5) was negatively correlated with the NPI but uncorrelated (perspective taking [PT]) or positively correlated (empathic concern [EC]) with the PNI total and most of its subscales. These findings partially contrast with those of Pincus et al. (2009), as well as more recent findings by Roche et al. (2013), who both reported an equally moderate negative correlation of empathy with both the NPI and the PNI, albeit using a different measure (which in addition to empathy also encompassed morality). More emotions were assessed with subscales of the TOSCA (shame, guilt, and pride). Consistent with Pincus et al. (2009), despite our use of a different measure, shame was negatively correlated with the NPI and positively with the PNI, and this relationship was larger for PNI vulnerability. The latter is in line with recent findings by Roche et al. (2013), as is our obtained pattern for guilt, showing a negative correlation with the NPI and no correlation with PNI total but some positive correlations with its vulnerable subscales. Furthermore, both the NPI and PNI were positively correlated with pride in self and behavior (except for DEV), an effect that was greater for PNI grandiosity. These latter findings confirm theoretical assumptions and clinical observations that high PNI narcissism is related to being more prone to feelings of shame and guilt, but nevertheless feeling pride, as well as entitlement (Cain et al., 2008; Dickinson & Pincus, 2003; Pincus & Lukowitsky, 2010; Russ & Shedler, 2013). Altogether this is a formula for an unstable self, especially if as shown by Roche et al. (2013), the pride related to PNI is hubristic but not authentic.

Big Five Personality. In line with previous findings (Miller et al., 2010; Miller, Hoffman, et al., 2011; Roche et al.,

2013), the PNI and the NPI showed inverse correlations with NEO-FFI neuroticism and extraversion (see Table 6, Steiger's Z coefficients, & footnote 5),⁵ with the PNI correlating positively with neuroticism and negatively with extraversion, while the opposite was true for the NPI. Note however, that while PNI grandiosity was also positively (though lower than PNI vulnerability) correlated with neuroticism, it was uncorrelated to extraversion. As postulated by clinical theory (Pincus, 2005), correlations with agreeableness were negative for both, PNI and NPI, whereas openness was uncorrelated with either measure. Opposite correlations were also observed on conscientiousness, which was negatively related to PNI total and PNI vulnerability but positively to NPI, and uncorrelated with PNI grandiosity. These NPI-PNI divergences are by and large consistent with the findings by Roche et al. (2013).

Dysfunctional Behavior and Interpersonal Problems. We also examined relations of PNI and NPI with different aspects of aggression, sensation seeking, and substance abuse (see Table 6). Positive correlations were found for both the PNI and NPI with physical and verbal aggression. In addition, the PNI (grandiosity and vulnerability) but not the NPI were correlated with anger and hostility. Interestingly, while the associations with both physical and verbal aggression were higher for PNI grandiosity than PNI, the reverse was true for hostility. Sensation seeking was positively correlated with the NPI but uncorrelated with the PNI. The excessive consumption of alcohol was generally related to grandiose aspects of the PNI (EXP and GF, $r = .19$, $r = .14$, respectively, both $p < .001$) and to the NPI. For drugs there were only moderate associations, in the case of PNI participants for both legal and illegal drug use, whereas solely for illegal drugs for high NPI participants. Together these results are consistent in confirming that grandiose narcissism is associated with more externalizing behavior, whereas vulnerable narcissism with a more internalizing pattern of hostility and impulsive behavior (cf. Pincus, 2013; Roche et al., 2013). We base the latter on the fact that BPAQ anger and hostility (jealousy, suspicion, bitterness) primarily concern feelings (i.e., internal states) rather than aggressive acts. And their impulses concern drugs (mostly tranquilizers or narcotics, which also sedate) but not sensation seeking or alcohol (i.e., stimulants).

This pattern might also be the reason for different interpersonal problems typical of the two dimensions of narcissism. We positioned the PNI subscales and the NPI in the circumplex structure of the IIP using the structural summary method developed by Gurtman (1992), which represents an adaptation of the traditional circumplex scoring procedures used to locate constructs/variables as opposed to individuals within the circumplex space. We replicated the angular displacements of all but one of the explicitly grandiose aspects (NPI, PNI-EXP) reported in Pincus et al.

(2009), with E/E in vindictive rather than domineering. Overall then, persons scoring high in grandiose narcissism are too domineering in their interpersonal relationships. The other PNI subscales consistent with Pincus et al. (2009) were dispersed across several octants of the model, however not all replicated the exact positions. As in Pincus et al. (2009), SSSE was in the overly nurturant, and HS in the avoidant octant. Three subscales showed a slight shift by one octant: in our data CSE is located in nonassertive as opposed to in exploitable, DEV in cold as opposed to in vindictive, and ER in the domineering instead of the vindictive octant. A shift by two octants was evidenced by GF, in our data located in vindictive as opposed to the intrusive octant. Two of these four PNI subscales (CSE & DEV) were also the ones with the lowest goodness of fit values (R^2 s: .162-.735, respectively), hence making their reliable placement somewhat problematic (in contrast to R^2 s: .821-.922 for the other PNI, and .958-.984 for the NPI scales). Nevertheless, all of the placements make sense at a theoretical level, with the more grandiose subscales of the PNI reflecting vindictive and domineering interpersonal problems, in contrast to the more vulnerable subscales which relate to avoidant and nonassertive interaction styles.

Psychological Distress and Well-Being. As expected the PNI correlated positively with psychological distress as assessed on the BSI (see Table 6). The total score (GSI) and all nine subscales had significant correlations with the PNI total and this was also true for all PNI subscales except for the EXP subscale ($r = .04$, $p = .44$), which was not correlated with the BSI-GSI or its subscales. In contrast, the NPI was not or negatively correlated with the psychological distress—total score (GSI), as well as all subscales. A similar pattern was found for depression and negative affect in general. The PNI showed high positive correlations with depression (CES-D) and the negative affect (NA) scale of the PANAS, whereas for the NPI these correlations were negative (though nonsignificantly so for NA). In addition, there was a positive correlation between PNI and borderline symptoms on the MSI-BPD, except for the EXP subscale, while the correlation with the NPI was not significant. Reciprocally, the correlations between PNI and positive affect, and satisfaction with life were negative and close to zero for orientation to happiness, whereas these same scales were positively correlated with the NPI. Note that for all variables the relationships of greater distress and lower well-being were higher for PNI vulnerability than for PNI grandiosity.⁶

Conclusions

In this study, we replicated and extended the main findings reported in Pincus et al. (2009) Studies 2 and 3. On the whole, the correlation patterns confirm and extend the

Table 6. Validity Measures II: Big Five Personality, Dysfunctional Behavior, and Psychological Distress and Well-Being.

Criterion Variable	N	rNPI	rPNI total	Steiger Z	rPNI gn (P/W2)	rPNI vn (P/W2)
Big 5 Personality	160					
Neuroticism		-.33***	.55***	-9.29***	.19*/.19*	.66***/.65***
Extraversion		.46***	-.19***	6.52***	.05/.07	-.30***/-.32***
Openness		-.01	-.12	1.02	-.10/.02	-.09 ^a /-.17 ^b
Agreeableness		-.31***	-.42***	1.13	-.47*** ^a /-.26*** ^b	-.29*** ^a /-.44*** ^b
Conscientiousness		.23***	-.17***	3.78***	-.04/-.05	-.20*/-.20*
Dysfunctional behavior	468-667					
Anger		.06	.39***	-5.56***	.35*** ^a /.20*** ^b	.31*** ^a /.41*** ^b
Physical aggression		.32***	.24***	1.39	.36*** ^a /.23*** ^b	.12*** ^a /.21*** ^b
Verbal aggression		.31***	.23***	1.21	.39*** ^a /.24*** ^b	.10*** ^a /.19*** ^b
Hostility		-.12***	.60***	-15.76***	.38*** ^a /.32*** ^b	.60*** ^a /.64*** ^b
Sensation seeking		.39***	-.04	7.98***	.13***/.13**	-.12***/-.12**
Alcohol abuse		.17***	.08*	1.74	.19*** ^a /.18*** ^b	.01/.01
Legal drugs		-.06	.10*	-2.58*	.02/.02	.13***/.13**
Illegal drugs		.15***	.10*	0.81	.19*** ^a /.15**	.03/.06
Psychological distress and well-being	246-884					
Psychological distress ^a		-.13*	.52***	-9.28***	.33*** ^a /.28*** ^b	.54*** ^a /.57*** ^b
Depressive symptoms		-.19***	.44***	-13.86***	.17*** ^a /.14*** ^b	.50*** ^a /.53*** ^b
Borderline personality		-.05	.43***	-11.16***	.27*** ^a /.20*** ^b	.44*** ^a /.49*** ^b
Positive affect		.34***	-.21***	7.70***	-.01/.03	-.26*** ^a /-.29*** ^b
Negative affect		-.10	.44***	-7.71***	.27*** ^a /.24*** ^b	.46*** ^a /.48*** ^b
Satisfaction with life		.09*	-.28*	6.71***	-.11***/-.10**	-.33*** ^a /-.33*** ^b
Orientation to happiness		.30***	.03	3.20***	.18*** ^a /.27*** ^b	-.03 ^a /-.09 ^b

Note. NPI = Narcissistic Personality Inventory; PNI = Pathological Narcissism Inventory; PNI gn P/PNI vn P = Pathological Narcissism Inventory grandiose/vulnerable aspects according to Pincus 09 [gn: EXP, GF, SSSE, ER; vn: CSE, HS, DEV]; PNI gn W2/PNI vn W2 = Pathological Narcissism Inventory grandiose/vulnerable aspects according to Wright 2 [gn: EXP, GF, SSSE; vn: CSE, HS, DEV, ER]. Correlations within rows for PNI gn P versus PNI gn W2, and for PNI vn P versus PNI vn W2 with different superscripts are significantly different from each other ($p < .01$).

^aAs measured with the Brief Symptom Inventory (BSI-GSI).

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

general picture that narcissism as measured with the PNI is associated broadly with personality and interpersonal problems and psychopathology. In particular, our findings provide further evidence that PNI narcissism is associated with several measures of pathological narcissism, low self-esteem, depression, and borderline symptoms, as well as problematic interpersonal behavior. By and large, these relationships were more pronounced for PNI vulnerability, with the exception of physical and verbal hostility, which was higher for PNI grandiosity. Furthermore, the comparison of the Pincus original and Wright model 2 higher order factors, shows that when ER is included in grandiosity (Pincus model), this component shows higher relations to overt grandiosity and aggression, as well as reduced empathy, whereas there are no obvious differences between the vulnerable factors.

In addition, similar to a recent study by Roche et al. (2013), the results also confirm the differential functioning of PNI and NPI narcissism. In spite of in part different measures and solely the short form of the NPI in that study, a consistent picture is clearly emerging. Notwithstanding the two constructs' overlaps on entitlement, pride and aggression, there

are clear divergences on self-esteem, negative emotions (self-relevant and others), dysfunctional behavior and interpersonal problems. Together with the divergences on the NEO-FFI the picture is further solidified of PNI's vulnerability and pathological distress, which is joined by arrogance and haughtiness, contrasted with the self-assertive, nondistressed but conceited and antagonistic features captured by the NPI. These results underscore that it is crucial to differentiate between more pathological and more functional narcissism, as these two expressions differ widely in aspects of their personality, their behavior in the social world, and in their well-being.

Study 3: Further Validation of the German PNI Version in a Clinical Sample

One aim of the PNI is to assess clinically relevant aspects of pathological narcissism. However, studies investigating the PNI in clinical samples are still rare. While narcissism as measured by the NPI is generally related to psychological well-being and low symptoms, the PNI and some of its

more vulnerable aspects (e.g., CSE and HS subscales) seem to be related to different forms of psychotherapeutic treatment utilization (Pincus et al., 2009). Correspondingly, in our large community samples we showed in Study 2 that PNI narcissism is closely related to a broad range of psychological impairment, while NPI narcissism is not. By extension, we therefore expected psychotherapy patients to have elevated PNI scores compared to nonclinical participants and to report more symptoms. Furthermore, we predicted more vulnerable aspects of the PNI (in particular CSE, HS, and DEV) to correlate positively with symptoms, whereas more grandiose PNI components (especially EXP, GF, SSSE) and the NPI to be less, or in part even un-, related to these symptoms.

Method

Participants. A total of 214 inpatients at the psychosomatic hospital Bad Grönenbach, Germany, volunteered to participate in the study. These patients completed our instruments in addition to the usual hospital questionnaires at intake. They did not differ in age, sex, diagnosis or any other attribute from the general patient population of this clinic. The mean age of participants was 42.87 years ($SD = 11.82$, range = 18-67), 69.5% were female. Most (71.0%) were full- or part-time employees, 3.3% were in an apprenticeship, and the rest were unemployed for various reasons. About two thirds of the participants had an affective disorder (MDE) as primary diagnosis according to the International Classification of Diseases (ICD-10; World Health Organization, 1992), 14.5% were diagnosed with a personality disorder (predominantly borderline or combined; none with NPD), and 13.1% with PTSD or adjustment disorder. The rest was diagnosed with any other ICD-10 mental and behavioral disorder. Many patients (70%) had one or more secondary ICD-10 diagnoses. The most common secondary diagnoses were affective and adjustment disorders, followed by a relatively low percentage with personality disorders, out of which two were diagnosed with NPD.

To compare the clinical sample with the normal population we randomly matched a subsample from our large community sample in terms of age and gender. The resulting community subsample contained 208 participants with a mean age of 42.75 ($SD = 12.26$) and 71.2% women; 13.9% were students.

Measures. Patients completed in addition to the PNI, a selection of the questionnaires used in Study 2. They completed the Narcissistic Personality Inventory (NPI), the Hypersensitive Narcissism Scale (HSNS), the Dimensional Assessment of the Personality Pathology–Basic Questionnaire (DAPP-BQ), the Rosenberg Self-esteem Scale (RSE), the State-Trait Grandiosity Scale (STGS), the Psychological Entitlement Scale (PES), the McLean Screening Instrument

for Borderline Personality Disorder (MSI-BDP), the Alcohol Consumption Questions (AUDIT-C), and the experience with drugs items. In addition, they also completed the Big-Five Inventory, not reported in Study 2, as well as some new questionnaires not used in the community sample:

Big-Five Inventory (BFI-5). The BFI-S (Gerlitz & Schupp, 2005) is a 15-item abbreviated measure to assess the five-factor model of personality. Items are rated on a 7-point scale ranging from 1 (*not at all*) to 7 (*very much*). Coefficients alphas in this sample were .59 (neuroticism), .76 (extraversion), .56 (openness), .32 (agreeableness), and .54 (conscientiousness). These modest values for internal consistency are typical, and to be expected, as the scale was designed to maximize content validity by capturing a broad bandwidth of a trait with few items.

Beck Depression Inventory (BDI-II). The BDI-II (Beck, Steer, Ball, & Ranieri, 1996; Hautzinger, Keller, & Kühner, 2006) is a 21-item self-report measure to assess the level of depression. Items are answered by choosing one of four graded statements from 0 (*no sign of depression*) to 3 (*strong indication of depression*); $\alpha_{\text{current sample}} = .90$.

Symptom Checklist (SCL 90-R; Derogatis & Lazarus, 1994; Franke, 2002). The Symptom Checklist is a widely used 90-item questionnaire to assess psychological symptoms. Items are rated on a 5-point scale ranging from 0 (*not at all*) to 4 (*extremely*). In this study, we used the GSI, an overall score for psychological distress calculated from the 10 subscales ($\alpha = .97$).

Eating Disorder Inventory (EDI-2). The EDI (Garner, 1991; Rathner & Waldherr, 1997) assesses different aspects of eating disorders. In this study we used the subscales (7 items each) for bulimia ($\alpha = .87$) and drive for thinness ($\alpha = .90$). Items are rated on a 6-point scale ranging from 1 (*never*) to 6 (*always*).

Relationship Questionnaire (RQ2). The Relationship Questionnaire (Griffin & Bartholomew, 1994; Mestel, 1995) contains four vignettes describing secure, dismissive, fearful, and preoccupied attachment styles. Participants rate to what extent each of the four styles matches their own relationship behavior on a scale ranging from 1 (*not at all like me*) to 7 (*very much like me*). Based on these ratings each person is assigned to the style that is most suitable. Participants are classified as securely attached if their views of self and other are both positive; dismissing, if they have a positive self-view but negative other; preoccupied if their self-view is negative, but view of others is positive; and fearful, if both self- and other-views are negative.

Structural Analysis of Social Behavior (SASB)–Intrex Questionnaire. We used the introject surface from the Intrex Questionnaire based on the SASB method, which permits assessment of interpersonal and intrapsychic patterns (Benjamin, 1979; Tscheulin & Glossner, 1993). This 36-item measure describes a person's typical treatment of himself or herself by grouping items into eight clusters of behavior toward the self: spontaneity ($\alpha = .63$), self-acceptance ($\alpha = .90$), self-love ($\alpha = .87$), self-support ($\alpha = .64$), self-control ($\alpha = .82$), self-devaluation ($\alpha = .83$), self-destruction ($\alpha = .79$), and self-neglect ($\alpha = .62$). Items are rated on an 11-point scale ranging from 0 (*never/not at all*) to 100 (*always/very much*).

Assessment of functioning. In addition, patients were asked to report on the reasons for their inability to work, the frequency of use and duration of ambulant psychotherapy or self-help groups, the number and duration of previous hospitalization for psychological reasons, and the number of suicide attempts.

Results and Discussion

Group Mean Differences PNI and Validation Measures. In the clinical sample, obtained alphas were comparable with those found in the large community sample, ranging from .82 (HS, SSSE, and EXP) to .90 (CSE); and .95 for PNI total. Furthermore, as predicted the clinical sample had higher scores on the PNI total, as well as the following subscales: CSE, SSSE, HS, and DEV, whereas the community sample had higher scores on the EXP subscale as well as on the NPI total (see Table 7). There was a small (relative to sample size) difference for the ER subscale and none for GF. Overall therefore, the clinical sample scored higher on the more vulnerable aspects of the PNI (cf. Fossati et al., 2014, for similar findings). Consistent with these results, the community sample also scored higher on grandiosity, $t(394) = -4.18, p < .001, d = 0.42$, entitlement, $t(397) = -3.10, p < .01, d = 0.31$, and on self-esteem, $t(413) = -10.17, p < .001, d = 1.00$. Furthermore, as expected, the clinical sample scored higher on the borderline screening, $t(347) = 5.8, p < .001, d = 0.61$. No differences were found regarding the abuse of legal and illegal drugs ($ts < 1$); however, alcohol consumption was higher in the community sample, $t(257) = -11.14, p < .001, d = 1.50$, both in terms of frequency and quantity. The latter is consistent with the community sample's higher scores on the NPI and on PNI-EXP and -GF, which were all related to higher alcohol consumption (see Study 2).

Correlational Differences Validation Measures. As can be seen from Table 8 (see Fisher's Z coefficients) the correlation patterns between validation measures and PNI were very similar to the ones found in the matched community sample,

Table 7. Group Differences PNI.

Variable	Clinical sample (N = 214)		Community sample (N = 208)		t	d
	M	SD	M	SD		
NPI	9.99	6.16	13.87	6.93	-5.82***	0.59
PNI total	2.26	0.75	1.84	0.75	5.77***	0.56
CSE	2.63	1.02	1.78	1.04	8.45***	0.84
EXP	1.52	0.87	2.02	0.98	-5.49***	0.54
SSSE	2.49	1.04	2.07	1.02	4.17***	0.41
HS	2.70	1.03	1.97	1.09	7.08***	0.69
GF	2.23	1.09	2.13	1.15	0.92	0.09
DEV	2.23	1.05	1.42	0.91	8.47***	0.83
ER	1.79	0.97	1.59	0.93	2.17*	0.21

Note. NPI = Narcissistic Personality Inventory; PNI = Pathological Narcissism Inventory; CSE = Contingent Self-Esteem; EXP = Exploitative; SSSE = Self-Sacrificing Self-Enhancement; HS = Hiding the Self; GF = Grandiose Fantasy; DEV = Devaluing; ER = Entitlement Rage.
* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 8. Validity Measures Correlations PNI: Group Differences.

Sample	Clinical (N = 214)	Community (N = 208)	Fisher's Z
NPI	.06	.20*	-1.43
HSNS	.59***	.53***	0.85
DAPP-BQ	.70***	.74***	-0.07
RSE	-.47***	-.48***	0.13
STGS	.08	.20*	-1.05
PES	.23*	.37***	-1.53
BFI-N	.41***	.45***	-0.47
BFI-E	-.12	-.08	-0.38
BFI-O	.03	-.09	1.14
BFI-A	-.15*	-.34***	1.92*
BFI-C	-.03	-.18*	1.44
MSI-BPD	.46***	.38***	0.90
AUDIT	.09	.14	-0.37
Drugs legal	.06	-.04	0.70
Drugs illegal	.01	.23	-1.57

Note. NPI = Narcissistic Personality Inventory; HSNS = Hypersensitive Narcissism Scale; DAPP-BQ = Dimensional Assessment of the Personality Pathology-Basic Questionnaire (Narcissism Items); RSE = Rosenberg Self-Esteem Scale; STGS = State-Trait Grandiosity Scale; PES = Psychological Entitlement Scale; BFI-N = Big-Five Inventory Neuroticism; BFI-E = Big-Five Inventory Extraversion; BFI-O = Big-Five Inventory Openness; BFI-A = Big-Five Inventory Agreeableness; BFI-C = Big-Five Inventory Conscientiousness; MSI-BPD = McLean Screening Instrument for Borderline Personality Disorder; AUDIT = Alcohol Use Disorders Identification Test.

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

confirming that the PNI in essence is functioning the same way in both samples. In both samples, the PNI correlated similarly positively with entitlement, pathological and

hypersensitive narcissism, and equally negatively with self-esteem. The only minor divergences were on grandiosity and on the NPI, for which the community sample showed higher correlation, but these differences between correlations were not significant. The PNI also had similar BFI patterns (e.g., positive correlations with neuroticism) in both samples, except for somewhat higher correlations with disagreeableness in the community relative to the clinical sample.

In terms of the scales specific to the clinical sample (see Table 9), the PNI total score, and in particular PNI vulnerability, correlated positively with depression (BDI-II) and psychological symptoms (SCL-90-R, GSI). In contrast, significant negative correlations were found for the NPI for both of these measures. Furthermore, in line with previous findings (Gordon & Dombeck, 2010), we found positive correlations for PNI vulnerability with eating disorders (drive for thinness and bulimia; note that these were particularly pronounced for HS: $r = .39$, $r = .32$, $p < .001$, respectively), although the full PNI is not significant; whereas correlations with the NPI again were negative.

With regard to attachment, patients with higher PNI scores (and PNI vulnerability in particular) were generally more preoccupied and more fearfully attached, less secure, but neither more nor less dismissive (Table 9). Similarly, in terms of category assignment, patients with high PNI (median split) were more often classified as fearful (46.1%) or preoccupied (27.0%), than secure (5.6%) or dismissive (21.3%). On the other hand, patients with low PNI were more often classified as secure (26.2%) or dismissive (33.3%) than preoccupied (15.5%) or fearful (25.0%; $\chi^2[3, 173] = 22.02$, $p < .001$). These results are in line with other previous findings that show a high level of psychological impairment (Roche et al., 2013; K. M. Thomas et al., 2012; Tritt et al., 2010) and an insecure attachment style for people scoring high on the PNI (Fossati et al., 2014; Miller et al., 2010; Roche et al., 2013). We did however not find a relationship with a dismissing attachment style, as Fossati et al. (2014) did—albeit they used a different measure. Moreover, the correlational patterns of attachment for the PNI are in stark contrast to those of the NPI, where high scorers were more securely attached, less fearful but neither preoccupied nor dismissing.

Correlations with the SASB–Intrex Questionnaire, Introject surface subscales (see Table 9) further confirmed the tendency of negative associations between PNI (and especially PNI vulnerability) with positive intrapersonal processes like self-acceptance and self-love and simultaneous positive correlations with negative aspects like self-destruction and self-neglect. The opposite was true for the NPI, correlating positively with positive forms of self-regard and negatively with forms of self-disrespect.

Assessment of Functioning. A high percentage of patients reported an inability to work (63.6%, mean duration = 15.64 weeks, $SD = 27.79$, range from 1 to 256 weeks), previous hospitalizations for psychological (34.6%) and/or psychiatric reasons (18.7%), and having attended ambulatory psychotherapy (87.4%, range of duration from 2 up to 300 sessions). There were however no significant correlations of the PNI total with the occurrence, frequency or duration of such incidents, or with lifetime suicide attempts. The NPI, in contrast, had significant negative relations with occurrence and duration of previous hospitalizations ($r = -.16$ to $-.20$, $p < .05$), as well as number of lifetime suicide attempts ($r = -.16$, $p < .05$). There was a tendency for negative correlations of grandiose aspects in the PNI (particularly EXP and GF) with occurrence, number, and duration of previous hospitalizations ($r = -.15$ to $-.19$, $p < .05$), as well as incidence and number of lifetime suicide attempts ($r = -.14$ and $-.15$, $p < .05$). While the former is consistent, the latter contrasts with Pincus et al. (2009) who reported significant positive correlations of the PNI total and several subscale with suicide attempts. Note, however, that the percentage reporting lifetime suicide attempts in our sample was only 15%, hence the relationship may represent an underestimation, as a result of a restricted range. On the other hand, Ellison et al. (2013) similarly found no relationship of PNI grandiosity or vulnerability with suicidal ideation upon intake. Finally, although there were no PNI total or subscale effects on ambulatory psychotherapy utilization or self-help group attendance per se, SSSE, HS and DEV were strongly and negatively associated with the frequency of self-help group attendance for those 13.6% ($N = 29$) reporting such contacts ($r = -.48$ to $-.59$, $p < .01$). Thus, patients scoring high in vulnerable narcissism seemed to draw away from possible exposure of their vulnerability in a social group.

Conclusions

As expected, we found significantly higher mean scores for patients on the PNI total and the more vulnerable aspects of the PNI compared to nonpatients. In contrast, nonpatients scored higher on scales measuring grandiose aspects particularly NPI, EXP, as well as on self-esteem, well-being, and psychological health. These results confirm the findings from Study 2, as well as findings of other research groups (Ellison et al., 2013; Pincus et al., 2009; Roche et al., 2013; K. M. Thomas et al., 2012) and provide additional evidence that vulnerable narcissism is broadly associated with psychological distress, while grandiose narcissism is associated with better psychological functioning. Moreover, we replicated with a different measure the attachment patterns also found by Roche et al. (2013) and Fossati et al. (2014) showing that PNI narcissism is positively associated with forms of insecure attachment, while there is a

Table 9. Validity Measures Specific to Clinical Sample.

Variable	NPI	PNI	Steiger Z	PNI gn (P/W2)	PNI vn (P/W2)
BDI-II	-.33***	.39***	-7.68***	.14/.21**	.46***/.46***
SCL (GSI)	-.23*	.48***	-7.67***	.22**/.29***	.53***/.52***
EDI-2: Drive for Thinness	-.22*	.17	-2.63*	-.04 ^a /.11 ^b	.29**/.23*
EDI-2: Bulimia	-.27*	.16	-2.93*	-.04/.02	.26*/.23*
Attachment: Preoccupied	-.06	.38***	-4.67***	.08/.14	.43***/.44***
Attachment: Fearful	-.21*	.36***	-6.07***	.30***/.29***	.34***/.38***
Attachment: Secure	.21*	-.28***	5.13***	-.07/-.12	-.33***/-.33***
Attachment: Dismissing	.12	.06	0.61	.07/.04	.08/.09
Spontaneity	.17*	.10	0.72	.22*** ^a /.12 ^b	.01 ^a /.09 ^b
Self-acceptance	.29***	-.33***	6.64**	-.04 ^a /-.15 ^{ab}	-.43***/-.39***
Self-love	.34***	-.21**	5.83**	.07 ^a /-.02 ^b	-.31***/-.29***
Self-support	.38***	-.07	4.78**	.08/.05	-.15*/-.14
Self-control	.01	.39***	-4.05**	.25***/.37***	.41***/.37***
Self-devaluation	-.31***	.37***	-7.37**	.09 ^a /.20 ^{ab}	.48***/.44***
Self-destruction	-.22**	.30***	-5.47**	.08 ^a /.19 ^{ab}	.38*** ^a /.33*** ^b
Self-neglect	-.24**	.33***	-6.05**	.21**/.20**	.33*** ^a /.38*** ^b

Note. NPI = Narcissistic Personality Inventory; PNI = Pathological Narcissism Inventory; PNI gn/PNI vn P = Pathological Narcissism Inventory grandiose/vulnerable aspects according to Pincus 09 [gn: EXP, GF, SSSE, ER; vn: CSE, HS, DEV]; PNI gn W2/PNI vn W2 = Pathological Narcissism Inventory grandiose/vulnerable aspects according to Wright 2 [gn: EXP, GF, SSSE; vn: CSE, HS, DEV, ER]; BDI = Beck Depression Inventory; SCL = Symptom Checklist; EDI = Eating Disorder Inventory; GSI = Global Severity Index. Correlations within rows for PNI gn P versus PNI gn W2, and for PNI vn P versus PNI vn W2 with different superscripts are significantly different from each other ($p < .01$). $N = 214$.

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

negative relationship with secure attachment. Individuals scoring high on the NPI by contrast endorse secure and deny fearful attachment (see also Dickinson & Pincus, 2003 for similar results). As noted by Fossati et al. (2014), these findings highlight the need of assessing attachment dynamics for understanding and treating narcissism. Along the same line, the PNI (and PNI vulnerability in particular) was newly shown to be related to various forms of self-disrespect (e.g., self-neglect and -destruction) and to lacking self-acceptance or self-love. These current findings contribute to further substantiation and expansion of the PNI nomological net. Together, they provide additional evidence that individuals scoring high on narcissistic vulnerability have notable difficulties transforming narcissistic needs into adaptive objectives (Roche et al., 2013).

Finally, in line with both Pincus et al. (2009) and Ellison et al. (2013), the PNI total was unrelated with psychotherapy service utilization, whereas its most grandiose aspects tended to have negative relationships. As for the vulnerable subscales of the PNI, similar to Ellison et al. (2013) these also were uncorrelated with service utilization—somewhat in contrast to Pincus et al. (2009) who found some tentative evidence related to psychotherapy utilization (in particular for HS). On the other hand, interestingly and consistent with theoretical assumptions, patients with more vulnerable narcissism (compared to those with less) avoided attending self-help groups, suggesting perhaps their desire to prevent their fragile self from being noticed.

General Discussion

The Pathological Narcissism Inventory (PNI) was designed as a multidimensional measure to address an important gap in existent assessment tools by covering the full spectrum of grandiose and vulnerable aspects of narcissistic pathology (Pincus et al., 2009). The purpose of the current three studies was to examine the psychometric properties and construct validity of the German PNI and to provide additional evidence for the PNI's nomological net. An extension to a large clinical inpatient population also was made in order to clarify the characteristics through which the different dimensions of narcissism relate to psychological well-being and distress. The present findings confirm the psychometric soundness of the PNI and the associations with other measures support its construct validity as a measure of narcissism with both grandiose and vulnerable features. The extension to the clinical sample provides further evidence that the PNI is a useful tool to assess the more pathological end of narcissism.

Psychometric Properties and Factor Structure

Our results confirmed the good internal consistency of the original PNI, and added evidence for excellent test-retest reliability. Importantly, we replicated the seven lower order factor structure showing satisfactory fit using ESEM and significantly better fit than alternate one- or two-factor models.

Consistent with the PNI representing a multidimensional personality inventory, we obtained superior fit with ESEM over conventional CFA models (with the restrictive assumption of nonzero cross-loadings). Several second-order models were tested, all of which reached acceptable fit using an ESEM-within-CFA approach, with only marginal differences between them—this perhaps not surprising, as many theorists postulate strong dynamic relations between vulnerability and grandiosity features of narcissism (e.g., Morf & Rhodewalt, 2001; Pincus & Lukowitsky, 2010). Hence, the higher order factor structure needs further investigation. While across studies it seems clear that CSE, HS, and DEV belong to the vulnerable factor and EXP and GF to the grandiose, the assignment of SSSE and ER in particular seem more in question (as moving them from one factor to the other does not greatly affect fit).

In our view, it makes good theoretical sense to maintain the SSSE subscale as an indicator of narcissistic grandiosity instead of vulnerability, as it involves obvious—in part even demonstrative—self-enhancement. This puts us in favor of either the original Pincus or Model 2 of Wright et al. (2010), which both assign SSSE to the grandiose factor. Deciding between these two models—which differ in their assignment of ER—is more difficult. First, both in our study and in the only other study we know of (Karakoula et al., 2013), which assessed this factor structure, these two models were equivalent in fit. Second, it seems a lot less clear whether entitlement rage theoretically is more a part of grandiosity or vulnerability (cf. also Karakoula et al., 2013). In fact, there is good reason to believe it is part of both. It is clear from our data (and those of others, e.g., Krizan & Johar, 2015) that entitlement *per se* is a core element of narcissism common to both dimensions (see Table 5). However, the two may differ in how they respond to violations of their entitled expectations—whereas more vulnerable narcissists may get stuck in their angry ruminations; high scorers on the grandiose dimension go on to demand what is their due (cf. Dickinson & Pincus, 2003).

Therefore, our recommendation is to assign ER to the grandiose factor (i.e., consistent with the original higher order model of Pincus et al., 2009). This is based on our findings that in so doing, increases the overt aggression aspect of the grandiose component (and increases self-acceptance (see Table 9), which is consistent with theoretical conceptualizations. Individuals scoring high on grandiose narcissism are surer of their entitlement and as a result should react more intensely and more assertively, when it is threatened, whereas more vulnerable narcissists are too insecure to lash out. Moreover, ER is also the only subscale other than EXP and GF that correlates positively with the NPI and it was placed in the dominant half of the interpersonal circumplex. At the same time, it seems wise to continue reporting findings for all seven dimensions in construct validation studies when possible, as this provides a

more differentiated picture in terms of which aspects of narcissism relate to which other variables. In addition, so long as ER results also are reported individually, it will be possible to continue gathering information regarding its best factor assignment.

The PNI and the Grandiose to Vulnerable Narcissism Spectrum

The relations of the PNI to other variables and importantly the communalities and divergences in these patterns of associations to those of the NPI provide extensive support for the PNI as a measure of the more pathological end of the narcissism spectrum. The PNI was associated broadly with more dysfunctional personality traits, negative emotions and psychological distress, and avoidant, nonassertive interpersonal problems. These were often more pronounced for subscales of the PNI thought to be more strongly associated with vulnerable narcissism. By and large, the EXP subscale broke out of alignment and showed relations more similar to the NPI. The NPI relations in general showed much less dysfunction with more positive self-views, lack of negative emotions and distress, and more functional personality traits. Both the PNI and the NPI shared associations with entitlement, self-pride, interpersonal antagonism and aggression, however. In short, individuals high on PNI narcissism are marked by vulnerability and pathological distress, while all at once coupled with arrogance, haughtiness, and aggression. This is contrasted with the NPI narcissist's disposition, which is self-assured, assertive, and nondistressed, yet simultaneously conceited and disagreeable.

These differences in PNI-NPI nomological nets notwithstanding, we believe the two dimensions should not be thought of as distinct types. Rather, as our findings show the two lie on a continuum from more maladaptive to highly functioning. As suggested by Morf and colleagues (Morf, Horvath, et al., 2011), underlying this continuum may be a range with regard to the adaptiveness of self-regulatory mechanisms employed in narcissists' goal of obtaining affirmation for their grandiose self—with more high-functioning narcissism (as predominantly assessed by the NPI) being related to the use of more successful strategies than more low-functioning vulnerable narcissism (assessed by the PNI). As such, our clinical sample scored higher on the PNI and on its more dysfunctional subscales. In this sample, high PNI scores also were related to a high level of psychological impairment, an insecure attachment style, and various forms of self-neglect and -destruction. Similarly, Roche et al. (2013) interpret their findings as showing that pathological narcissism involves primitive regulatory and compensatory mechanisms in pursuit of self-enhancement, in contrast to the relatively more mature and more successful mechanisms of what they call "normal" narcissism. Such conceptualizations allow vulnerable and grandiose narcissism to subsist within the same

model of personality, varying solely in the degree to which maladaptive vs. adaptive self-views and -regulatory mechanisms dominate. This balance likely can also fluctuate over time, depending on life circumstances and the experiences of repeated successes or failures in self-affirmation endeavors. Future research is needed to pursue these ideas.

In this vein, it deserves highlighting that PNI grandiosity is not the same conceptually as NPI grandiosity. NPI grandiosity is dominated by leadership/authority, which is not represented in the PNI. The PNI in contrast contains SSSE, which involves demonstrative acts of self-sacrifice for the good of others but with the ultimate goal of boosting one's own self-esteem, not genuine feelings of empathy for the other (Pincus et al., 2009). Not surprisingly, therefore, other studies have shown that the PNI does not adequately capture the full range of grandiose narcissism (e.g., Miller et al., 2014; Miller, Price, & Campbell, 2011; see also K. M. Thomas et al., 2012). Hence, both PNI and NPI are needed to capture the complete narcissism grandiose to vulnerable spectrum.

An alternate measure also designed explicitly to capture the full range of grandiose and vulnerable narcissism is the FFNI (Glover et al., 2012; Miller, Few, et al., 2013). Although this measure has a different conceptual basis, FFNI vulnerability has been shown to correlate quite highly with PNI vulnerability. The same is not true for grandiosity—for similar reasons as discussed above for the NPI. Nevertheless, the FFNI nomological net (Miller, Gentile, & Campbell, 2013) on inspection seems to share considerable overlap with that of the PNI for both dimensions. Moreover, assigning ER to PNI grandiosity, as suggested above, would move it even closer to the FFNI and satisfy—at least in part—some of the criticisms leveled against the PNI (see, e.g., Miller et al., 2014). In short, both measures seem to assess the grandiose-vulnerable spectrum of narcissism, but there are some differences in coverage—the FFNI from the five-factor model perspective and the PNI based on the clinical literature. Still more validation studies are needed to clarify just where and how the two measures differ in incremental value in terms of criterion validity.

Strengths and Limitations

The current studies have a number of strengths. First, three different expert groups contributed to the consensus version of the questionnaire, which makes our findings more representative, both in terms of the language and in terms of the definition of the construct. Second, we collected an extensive range of validation measures, including measures of DSM Axis I and (some) II constructs, emotions, personality traits, dysfunctional and self-destructive behaviors, as well as hospitalization and utilization. Furthermore, in Studies 1 and 2 we had large sample sizes from diverse populations from three distinct German speaking regions (East Germany, West Germany, Switzerland). Finally, in Study 3 we obtained data

from a large inpatient clinical sample—to our knowledge this is the first study to do so.

The studies also have limitations however. First, all data in these studies were based on self-report. Although individuals high on narcissism tend not to be particularly concerned with social desirability, they do tend to exaggerate their positive attributes (Paulhus, 1998). Hence, as with all self-report data, such motivations likely introduce some bias into the data and it would be desirable to collect informant reports, clinical assessments, and observational data in future studies. Moreover, longitudinal data to assess change sensitivity (particularly in clinical samples) of the PNI also are needed.

Conclusions

Overall, the findings of these studies provided empirical support for the psychometric soundness and factorial validity of the German PNI. There were no substantive differences between the English original and our German translation. The one remaining question concerns the nature of its higher order factor structure. Moreover, the collected associations with a wide range of criterion variables confirm and extend the PNI's nomological net and provide further support for the assessment tool as a valuable multidimensional measure of narcissistic pathology with both grandiose and vulnerable features.

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Authors' Note

Philip Siegrist is now at Psychiatrische Dienste der Spitäler fmi AG, Interlaken, Switzerland.

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Notes

1. Although for simplicity, throughout the article, we refer to grandiose and vulnerable narcissism, we do not mean to imply stable subtypes. On the contrary, we endorse a dimensional

view of narcissism and its manifestations, such that vulnerable and grandiose features are more or less pronounced in individuals and can fluctuate over time.

2. The German PNI can be downloaded free of charge from the home page of the first author: http://www.pdd.psy.unibe.ch/ueber_uns/personen/prof_dr_morf_carolyn_c/.
3. Interestingly, Karakoula et al. (2013) found as best higher order model a three factor solution, which singles out EXP as a separate “malignancy” factor (with CSE, HS, and DEV on vulnerable, and GF, SSSE, and ER on grandiose). We computed this model after the fact also, with the same result—it was somewhat better than the other higher order models (CFI = .938, RMSEA = .053, SRMR = .029). However, this idea needs further investigation, because in our data a lower order purely exploratory ESEM three-factor EFA analysis (using a GEOMIN rotation) produced results inconsistent with this model, allocating the majority of the CSE items to the grandiose subfactor. The latter seems theoretically not tenable.
4. As Study 1 found the Pincus original and Wright 2 higher order factors solutions to be statistically equivalent, both of these higher order versions are portrayed in all that follows (PNI gn P/PNI vn P = PNI grandiose/vulnerable aspects according to Pincus 09 [gn: EXP, GF, SSSE, ER; vn: CSE, HS, DEV]; PNI gn W2/PNI vn W2 = PNI grandiose/vulnerable aspects according to Wright 2 [gn: EXP, GF, SSSE; vn: CSE, HS, DEV, ER]).
5. For space reasons and because few divergences were found regarding PNI subscales, those that did emerge are discussed in the text but are not presented in the Tables 6, 8, and 9. Full tables can be obtained from the authors however.
6. In addition, to learn more about the potential role of self-esteem in correlations of the PNI with clinical symptoms, we controlled for self-esteem in all correlations reported above. Most correlations did not change considerably; the only exceptions were partial correlations of PNI with clinical symptoms, which became much smaller or close to zero. In the case of orientation to happiness the partial correlation became positive. This indicates that self-esteem is responsible in part for the correlations between PNI and psychological distress but not for personality characteristics or dysfunctional behaviors. Therefore, the observed divergences between PNI and NPI narcissism are not solely due to their deviation on self-esteem.

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