# Lack of empathy in patients with narcissistic personality disorder

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A B S T R A C T

The study's objective was to empirically assess cognitive and emotional empathy in patients with narcissistic personality disorder (NPD). To date, "lack of empathy" is a core feature of NPD solely based on clinical observation. The study's method was that forty-seven patients with NPD, 53 healthy controls, and 27 clinical controls with borderline personality disorder (BPD) were included in the study. Emotional and cognitive empathy were assessed with traditional questionnaire measures, the newly developed Multifaceted Empathy Test (MET), and the Movie for the Assessment of Social Cognition (MASC). The study's results were that individuals with NPD displayed significant impairments in emotional empathy on the MET. Furthermore, relative to BPD patients and healthy controls, NPD patients did not show deficits in cognitive empathy on the MET or MASC. Crucially, this empathic profile of NPD is not captured by the Structured Clinical Interview for DSM-IV for Axis II Disorders (SCID-II). The study's conclusions were that while NPD involves deficits in emotional empathy, cognitive empathy seems grossly unaffected.

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## 1. Introduction

Narcissistic personality disorder (NPD) is characterized by a "lack of empathy" as well as a pervasive pattern of grandiosity and need for admiration (American Psychiatric Association, 2000). It is a severe mental disorder with prevalence rates of up to 6% in the general population (Stinson et al., 2008; Ritter et al., 2010), severe functional impairment (Miller et al., 2007; Stinson et al., 2008), and high suicide rates (Pompili et al., 2004). Although narcissism as a personality trait and empathy have been shown to be negatively correlated (e.g., Watson et al., 1984; Watson and Morris, 1991; Watson et al., 1992; Porcelli and Sandler, 1995) the Diagnostic and Statistical Manual of Mental Disorders-Fourth Edition (DSM-IV) criterion "lack of empathy" in NPD is solely based on clinical observation and expert consensus (also personal communication with E. Ronningstam) (Kohut, 1966; Kernberg, 1970; Akhtar and Thomson, 1982; Millon, 1983). Thus, to date, a congruent conceptualization and empirical evaluation of the criterion "lack of empathy" in NPD

are lacking. Therefore, the aim of the study was to empirically assess empathy in patients with NPD according to DSM-IV.

When NPD first appeared in the official psychiatric nomenclature in the Diagnostic and Statistical Manual of Mental Disorders-Third Edition (DSM-III) in 1980 (American Psychiatric Association, 1980) "lack of empathy" was established as a sub-criterion of the fifth criterion "characteristic disturbances in interpersonal relationships" (p. 317). Although DSM-III-based studies revealed that the criterion "lack of empathy" lacked discriminant validity (Morey, 1985; Gunderson et al., 1991; Gunderson and Ronningstam, 2001) (i.e., it had multiple significant correlations across other personality disorders; PDs), and offered poor interrater reliability (Pfohl et al., 1986) it was established as a separate criterion in the DSM-III-R (criterion 8), describing the "inability to recognize and experience how others feel" and was also maintained in the DSM-IV (American Psychiatric Association, 1994) and Diagnostic and Statistical Manual of Mental Disorders-Fourth Edition Text Revision (DSM-IV-TR) (American Psychiatric Association, 2000) as criterion 7. Further studies based on the DSM-IV additionally revealed low diagnostic specificity of the criterion "lack of empathy" (Blais et al., 1997; Holdwick et al., 1998; Gunderson and Ronningstam, 2001; Fossati et al., 2005).

In summary, weak empirical evidence of convergent and divergent validity of the DSM criterion "lack of empathy" stands in sharp contrast

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to longstanding clinical (mostly psychoanalytic) case descriptions and the conceptualization of NPD (Kohut, 1966; Kernberg, 1970; Akhtar and Thomson, 1982; Millon, 1983). Our hypothesis is that this contradiction is due to the fact that no theoretical construct underlies the NPD criterion "lack of empathy" in the DSM (Millon, 1983), and thus, its assessment may be insufficient.

Research has already proposed a multidimensional model of empathy (Davis, 1983; Blair, 2005a), comprising two distinct but related constructs: cognitive and emotional empathy. A third dimension of motor empathy (Blair, 2005a) was later incorporated into the model of emotional empathy (Preston and de Waal, 2002). Thus, cognitive empathy (Baron-Cohen and Wheelwright, 2004) refers to the ability to take another person's perspective and to represent others' mental states, and as such, broadly overlaps with the constructs "Theory of Mind" (Premack and Woodruff, 1978) and "mentalizing" (Frith and Frith, 2003). The construct of emotional empathy (Mehrabian and Epstein, 1972; Eisenberg and Miller, 1987) describes an observer's emotional response to another person's emotional state. Based on the multidimensional facet model of empathy, our group recently developed the Multifaceted Empathy Test (MET, Dziobek et al., 2008), a task presenting photorealistic stimulus material and simultaneously assessing both cognitive and emotional empathy in a more ecologically valid manner than previous self-rating questionnaires. To further differentiate aspects of cognitive empathy we developed the Movie for the Assessment of Social Cognition (MASC, Dziobek et al., 2006), a film-based task depicting social interactions, demanding the understanding of the emotions, thoughts, and intentions of movie characters.

To ascertain the specificity of a "lack of empathy" in NPD, we used a clinical comparison group of patients with borderline personality disorder (BPD) according to DSM-IV in which impaired cognitive empathy and unimpaired emotional empathy were found. We also compared both clinical groups to healthy controls (Fonagy et al., 1996; Harari et al., 2010).

### 1.1. Aims of the study

The current study was conducted, first, to empirically assess cognitive and emotional empathy in a clinical sample of patients with NPD, and second, to compare the results to a clinical comparison group of patients with BPD. We hypothesized that patients with NPD would show significantly higher impairments in cognitive and emotional empathy compared to healthy controls. Compared to patients with BPD, we hypothesized significant impairment in emotional empathy and no difference in cognitive empathy for the NPD group. The third aim was to evaluate the convergence of the DSM-IV criterion "lack of empathy" with the empirical measures used in this study.

## 2. Materials and method

### 2.1. Sample

Forty-seven inpatients with NPD were recruited from the Department of Psychiatry, Charité — Universitätsmedizin Berlin and cooperating German hospitals. Fifty-three age- and gender-paralleled healthy comparison subjects were recruited via media advertisements.

Previous studies of NPD and BPD have reported substantial comorbidity (Westen et al., 2006) between the two disorders and found overlap in the symptoms of affect dysregulation, impulsivity, and unstable relationships (Morey, 1988; Ronningstam and Gunderson, 1991; Blais et al., 1997). To show the more specific character of "lack of empathy" for NPD, we assessed a clinical comparison group with 27 BPD patients without comorbid NPD from the Department of Psychiatry, Charité — Universitätsmedizin Berlin. All BPD patients were inpatients and on a waiting list for an inpatient treatment program prior to admission, and none was admitted for acute care. Axis II diagnoses of patients and controls were assessed with the Structured Clinical Interview for DSM-IV for Personality Disorders (SCID-II, First et al., 1997, German version: Fydrich et al., 1997) by trained psychiatrists or psychologists. Interrater reliability of SCID-II diagnoses was assessed ($N = 8$) with a pairwise interview design. Interviewers were

blind to PD diagnoses. Kappa was acceptable with $\kappa = 0.797$ for NPD diagnosis and $\kappa = 0.820$ for BPD diagnosis. For the NPD criterion "lack of empathy," however, Kappa showed a perfect agreement, $\kappa = 1.0$. Internal consistencies for NPD items (Cronbach's $\alpha = 0.896$) and BPD items (Cronbach's $\alpha = 0.876$) were good. Axis I comorbidity was assessed with the Structured Clinical Interview for DSM-IV for Axis I Disorders (First et al., 1996, German version: Wittchen et al., 1997) in the NPD sample and with the Mini International Neuropsychiatric Interview (M.I.N.I., Sheehan et al., 1998, German version: Lecrubier et al., 1998) in the BPD sample. Exclusion criteria for all patients were history of psychotic disorder, a current bipolar I or II disorder, a current manic or hypomanic episode, or substance induced disorder (e.g., intoxication or withdrawal syndrome). All procedures were approved by the Human Subjects and Ethics Committee of Charité — Universitätsmedizin Berlin. Written informed consent was obtained from each participant. Socio-demographic and clinical data are presented in Table 1.

### 2.2. Psychometric assessment instruments

To assess psychopathology, the general severity index (GSI) of the Symptom Checklist 90 Revised (SCL-90-R, Derogatis, 1977, German version: Franke, 2002) was calculated. The internal consistency for the GSI was good (Cronbach's $\alpha = 0.989$). For IQ screening, subtest 4 (recognizing rules) of the well-established German "Leistungs-Prüf-System" (LPS, Horn, 1983) was administered.

### 2.3. Measures of cognitive and emotional empathy

The Interpersonal Reactivity Index (IRI; Davis, 1983; German version: Paulus, 2006) was employed as a multidimensional self-report estimate of empathy. In this study we focus on the scales "perspective taking" (the ability to assume another individual's point of view) and "empathic concern" (the capacity to experience sympathy for others). An example perspective-taking item is: "When I'm upset at someone, I usually try to 'put myself in his shoes' for a while." An example empathic-concern item is: "I often have tender, concerned feelings for people less fortunate than me." The IRI has been shown to correlate with other measures of empathy, providing support for the construct validity of the measure (Davis, 1980). Both subscales have good internal consistencies (perspective taking: $\alpha = 0.747$, empathic concern: $\alpha = 0.776$). In the sample of all participants of the present study both scales correlate moderately with $r = 0.457$, $P < 0.001$ (NPD: $r = 0.322$, $P = 0.144$, BPD: $r = 0.534$, $P = 0.004$; healthy controls: $r = 0.398$, $P = 0.004$).

The Multifaceted Empathy Test (MET, Dziobek et al., 2008) is a PC-assisted test consisting of photographs that show 23 pairs of picture stimuli with people in emotionally charged situations. To assess cognitive empathy, participants were required to infer the mental state of the subject in the photo, and were asked to indicate the correct one from a list of four. After giving feedback about the displayed people's actual mental states, emotional empathy was assessed. First, participants were required to rate the amount of mirroring of an emotion (i.e., emotional contagion) that took place in response to a picture (e.g., if the mental state of the person was anxious, subjects were asked to rate how anxious they felt). Participants indicated their responses on a visual analogue scale ranging from 0 to 9 (0 = not at all, 9 = very much). As an additional measure of more mature emotional empathy, subjects were also asked to rate the degree of empathic concern they felt for the person in the picture (visual analogue scale, 0 = not at all, 9 = very much). All pictures were presented in two forms: First, all emotionally charged situations (background) were presented without a person; then, in a second step, all of the situations were presented with a person expressing a relevant emotion. All background pictures were first independently rated for arousal in order to enable us to control for this general level of arousal when establishing group differences in empathic processing. Internal consistency of the MET's scales ranged from $\alpha = 0.71$ to $\alpha = 0.92$, and convergent and divergent validity were highly satisfactory (Dziobek et al., 2008). In the study sample, the scales emotion recognition and empathic concern were not correlated (All: $r = 0.146$, $P = 0.150$; NPD: $r = 0.125$, $P = 0.578$; BPD: $r = 0.297$, $P = 0.210$; healthy controls: $r = -0.071$, $P = 0.626$); nor were the scales emotion recognition and mirroring emotions (All: $r = 0.114$, $P < 0.265$; NPD: $r = -0.034$, $P = 0.879$; BPD: $r = 0.362$, $P = 0.069$; healthy controls: $r = -0.137$, $P = 0.341$). MET cognitive empathy was not correlated with emotional empathy assessed by the MET either for healthy controls (for empathic concern: $r = -0.071$, $P = 0.626$, for mirroring emotions: $r = -0.137$, $P = 0.341$) or for NPD patients (for empathic concern: $r = -0.010$, $P = 0.949$; for mirroring emotions: $r = -0.020$, $P = 0.893$).

To assess cognitive empathy (in terms of Theory of Mind) we also used the video-based Movie for the Assessment of Social Cognition (MASC, Dziobek et al., 2006). Not only did the test prove to have high interrater reliability and internal consistency and sensitivity, but the results also seem to be highly stable over time (Dziobek et al., 2006). The test involves watching a 15 min movie about four characters spending an evening together. It shows everyday social interactions, and is stopped 46 times for questions about the actors' feelings, thoughts, and intentions. Participants are required to choose the correct answer out of four possible ones. The test allows for a more differentiated analysis of specific patterns of social cognitive functioning with separate scores for the recognition of emotions, thoughts, and intentions. Sum scores for correct answers in all three sub-categories and a total score were computed. Moreover, the MASC also includes control questions that assess a participant's inferential processing concerning nonsocial stimulus material. The MASC has a good internal consistency with Cronbach's

**Table 1**
Socio-demographic and clinical variables of patients with narcissistic personality disorder (NPD), patients with borderline personality disorder (BPD), and healthy comparison subjects.

| | Total NPD sample ($N=47$) | | NPD without BPD ($N=22$) | | Healthy subjects ($N=53$) | | BPD without NPD ($N=27$) | |
|---|---|---|---|---|---|---|---|---|
| | M | S.D. | M | S.D. | M | S.D. | M | S.D. |
| Age (years) | 32.4 | 8.0 | 34.4 | 8.3 | 33.2 | 10.7 | 30.0 | 8.3 |
| Fluid intelligence[a] | $115.2^{1*}$ | 12.0 | $114.9^{2*}$ | 10.6 | 120.9 | 10.87 | 114.7 | 11.0 |
| Number of comorbid diagnosis | 4.7 | 1.9 | 2.9 | 1.8 | | | 3.4 | 2.4 |
| Previous suicide attempts | 2.9 | 3.8 | $1.3^{3***}$ | 2.0 | | | 5.3 | 6.5 |
| Previous hospitalizations (weeks) | 22.4 | 39.4 | $8.6^{3**}$ | 12.9 | | | 42.4 | 61.1 |
| GSI of SCL 90-R[c] | $1.7^{1***}$ | 0.7 | $1.6^{3*}$ | 0.6 | 0.3 | 0.2 | 2.0 | 0.7 |
| | N | % | N | % | N | % | N | % |
| Women | $24^4$ | 51.0 | $8^{5***}$ | 36.4 | 29 | 54.7 | 25 | 92.6 |
| Any affective disorder | 33 | 70.2 | $16^{5*}$ | 72.7 | | | 10 | 37.0 |
|   MDE current | 17 | 36.2 | $12^{5*}$ | 54.6 | | | 6 | 22.2 |
|   MDE lifetime | 21 | 44.7 | $14^{5*}$ | 63.6 | | | 7 | 25.9 |
|   Dysthymia | 16 | 34.0 | 5 | 22.7 | | | 4 | 14.8 |
| Any substance use disorder | 20 | 42.6 | 8 | 36.4 | | | 15 | 55.6 |
| Any anxiety disorder | 13 | 27.7 | 5 | 22.7 | | | 11 | 40.7 |
|   PTSD | 7 | 14.9 | $1^{4*}$ | 4.6 | | | 8 | 29.6 |
| Any eating disorder | 10 | 21.3 | 4 | 18.2 | | | 8 | 29.6 |
| Any cluster A PD | 19 | 40.4 | 6 | 27.3 | | | 4 | 14.8 |
| Any other cluster B PD[b] | 26 | 55.3 | 4 | 18.2 | | | 8 | 29.6 |
|   Antisocial PD | 12 | 25.5 | 4 | 18.2 | | | 4 | 14.8 |
| Any cluster C PD | 21 | 44.7 | 7 | 31.8 | | | 14 | 51.9 |
| Without psychotropic medication | 14 | 29.8 | 10 | 45.5 | | | 10 | 37.0 |
| Antipsychotic | 9 | 19.1 | 1 | 4.6 | | | 7 | 25.9 |
| Antidepressant | 26 | 55.3 | 11 | 50.0 | | | 17 | 63.0 |
| Mood stabilizer | 2 | 4.3 | 1 | 4.6 | | | 4 | 14.8 |

Note. NPD = narcissistic personality disorder, BPD = borderline personality disorder, MDE = major depression episode, PTSD = posttraumatic stress disorder, PD = personality disorder, [a]assessed with "Leistungs-Prüf-System" (LPS), [b]assessed with Symptom Checklist 90 Revised (SCL-90-R), [c]without NPD and BPD, [1]Mann–Whitney $U$ test, [2]Kruskal–Wallis test, [3]ANOVA $F$ test, [4]Fisher's exact test, [5]Pearson's $\chi^2$, significance levels: $*p<0.05$, $**p<0.01$, $***p<0.001$.

$\alpha=0.802$. The MASC sum score was significantly correlated with the MET score for cognitive empathy for healthy controls ($r=0.448$, $P=0.001$).

### 2.4. Statistical analysis

All statistical analyses were performed with SPSS version 15.0 (SPSS Inc., 2006). Before the use of parametric tests (for socio-demographic variables) to compare groups, Kolmogorov–Smirnov tests to assess normality and Levene's tests to assess homogeneity of variance were performed. Two-group comparisons (NPD vs. healthy controls) were performed with $t$ tests; for all data without homogeneity of variances, Mann–Whitney $U$ tests for two (NPD vs. healthy controls) and Kruskal–Wallis tests for three groups (NPD vs. BPD vs. healthy controls) were used, and for all categorical data (e.g., comorbid axis I and axis II disorders, gender), Pearson's $\chi^2$ test or Fisher's exact test was calculated. Quantitative group mean measures (IRI, MET, and MASC) were compared using univariate and multivariate analyses of variance or covariance. To analyze between-group differences, general linear model estimated means were compared with a priori simple contrasts (to control for Type I errors). Gender was used as a covariate in all linear models when group differences were present. Convergence was established with Spearman's nonparametric coefficient to assess correlative associations between "lack of empathy" and IRI and MET measures (convergent validity). All analyses were two-tailed and the alpha level was set at $P<0.05$. Omega squares ($\omega^2$) were used as measures of effect size ($\omega^2=0.010$ small, $\omega^2=0.059$ medium, $\omega^2=0.138$ large effect size; Kirk, 1996).

## 3. Results

### 3.1. Comparison between NPD and healthy controls

To assess cognitive and emotional empathy in NPD as measured with the IRI, a MANOVA model with perspective taking and empathic concern as dependent variables was conducted, which revealed a significant influence of group (Wilks' $\lambda=0.905$, $F_{2,95}=4.99$, $P=0.009$). Univariate between-subjects tests for IRI scales revealed significant differences in mean scores for cognitive empathy, but not for emotional empathy. Patients with NPD reported significantly lower scores on the IRI scale perspective taking (cognitive empathy) than healthy controls (Table 2).

To assess cognitive and emotional empathy with the MET task, a MANCOVA model with the test's subscales as dependent variables and background arousal as a covariate revealed a significant influence of group, (Wilks' $\lambda=0.764$, $F_{3,92}=9.48$, $P<0.001$). Univariate between-subjects tests displayed no significant differences of patients with NPD and healthy comparison subjects on cognitive empathy. Patients with NPD, however, showed significantly lower scores than healthy controls on the two emotional empathy scales (Table 2). To analyze cognitive empathy with the MASC, an ANOVA model with the MASC total score as the dependent variable revealed significantly lower scores for NPD patients than for controls, ($F_{1,95}=6.15$, $P=0.015$). MASC subscore analysis revealed no significant group effect (Wilks' $\lambda=0.947$, $F_{3,93}=1.748$, $P=0.163$). Follow up ANOVAs displayed a trend toward significance for all subscores, with lower values in the NPD group compared to healthy comparison subjects for the recognition of emotions, thoughts, and intentions (Table 2).

### 3.2. Comparison between NPD, BPD, and healthy controls

To test the specificity of impairments in empathy for NPD, only NPD patients without comorbid BPD were included in subsequent analyses and compared to a group of BPD patients without comorbid NPD and a group of healthy controls (for socio-demographic and clinical data see Table 1). Self-evaluation of empathy as measured by the IRI subscales (perspective taking and empathic concern) was included in a MANOVA as dependent variables, group (NPD, BPD, and healthy controls) as a fixed factor, and gender as a covariate. Analysis showed a significant influence of group (Wilks' $\lambda=0.902$, $F_{4,188}=2.50$, $P=0.044$). Comparison of a priori contrasts revealed significantly lower values for cognitive empathy in NPD and BPD patients compared to healthy subjects, whereas the emotional empathy scales only significantly differed between BPD and healthy controls (Table 3). To

**Table 2**

Means, standard deviations (S.D.), and group comparisons for subscales of IRI, MET, and MASC for patients with NPD and healthy comparison subjects.

| Measure | Group | | | | ANCOVA | | |
| | NPD ($N=47$) | | HC ($N=51$) | | | | |
| | $M$ | S.D. | $M$ | S.D. | $F$ | $P$ | $\omega^2$ |
|---|---|---|---|---|---|---|---|
| *IRI* | | | | | | | |
| Cognitive empathy − *perspective taking* | 21.32 | 4.39 | 23.84 | 3.59 | 9.726 | 0.002 | 0.082 |
| Emotional empathy − *empathic concern* | 24.80 | 4.33 | 26.04 | 3.18 | 2.626 | 0.108 | 0.016 |
| | | | | | | | |
| *MET*[a] | | | | | | | |
| Cognitive empathy − *emotion recognition* | 22.47 | 7.33 | 21.82 | 1.70 | 0.648 | 0.423 | −0.002 |
| Emotional empathy − *empathic concern* | 4.68 | 1.57 | 5.80 | 1.40 | 25.405 | <0.001 | 0.199 |
| Emotional empathy − *mirroring emotions* | 4.45 | 1.37 | 5.42 | 1.39 | 23.703 | <0.001 | 0.188 |
| | | | | | | | |
| *MASC* | | | | | | | |
| Cognitive empathy (total score) | 30.77 | 4.94 | 33.34 | 5.26 | 6.150 | 0.015 | 0.049 |
| Recognize emotions | 10.38 | 2.35 | 11.10 | 2.15 | 2.474 | 0.119 | 0.015 |
| Recognize thoughts | 3.13 | 0.80 | 3.36 | 0.72 | 2.260 | 0.136 | 0.013 |
| Recognize intentions | 9.33 | 2.25 | 10.10 | 2.29 | 2.815 | 0.097 | 0.023 |

Note. NPD = narcissistic personality disorder, HC = healthy controls, IRI = Interpersonal Reactivity Index, MET = Multifaceted Empathy Test, MASC = Movie for the Assessment of Social Cognition, [a]The $F$ tests the group effect. This test (ANCOVA) is based on the linearly independent pairwise comparisons among the estimated marginal means (covariate = background arousal). Degrees of Freedom: IRI and MASC: d.f.$_{numerator}$ = 1, d.f.$_{denominator}$ = 95; MET: d.f.$_{numerator}$ = 1, d.f.$_{denominator}$ = 94.

assess cognitive and emotional empathy with MET, a MANCOVA model with MET subscales as dependent variables (empathic concern, mirroring emotions, and emotion recognition) and background arousal and gender as covariates was conducted, and revealed a significant influence of group (Wilks' $\lambda = 0.762$, $F_{6,182} = 4.42$, $P<0.001$). In the a priori contrasts for the MET's cognitive empathy, patients with NPD displayed no significant differences compared to controls, but compared to BPD, contrasts revealed significantly higher cognitive empathy scores for patients with NPD ($P = 0.022$, Table 3). By contrast, univariate between-subjects tests revealed significant differences between groups on the MET's emotional empathy scales but not on the cognitive empathy scale. For the a priori contrasts of the emotional empathy scales, patients with NPD showed significantly lower scores than controls on both emotional empathy scales (empathic concern, $P = 0.014$, mirroring emotions, $P = 0.019$). For a more detailed evaluation of cognitive empathy, an ANCOVA with the MASC's total score as the dependent variable and gender as a covariate revealed significant differences between groups ($F_{2,95} = 3.53$, $P = 0.033$), whereas contrasts solely revealed significant differences

between patients with BPD and healthy controls ($P = 0.011$), indicating unaffected cognitive empathy in NPD and deficits in BPD compared to healthy controls. MASC subscale analysis using a MANOVA displayed no significant group effect (Wilks' $\lambda = 0.943$, $F_{6,186} = 0.92$, $P = 0.479$).

### 3.3. Convergent validity of "lack of empathy"

The DSM-IV criterion "lack of empathy" (measured as an ordinal variable by the SCID-II with: 1 = absent, 2 = subthreshold, and 3 = threshold) was negatively associated (Spearman's $\rho$) with the self-reported values for cognitive empathy (IRI; perspective taking: $\rho = -0.316$, $P = 0.030$), but not with self-reported values for emotional empathy (IRI; empathic concern: $\rho = -0.026$, $P = 0.400$). No correlative associations could be found for "lack of empathy" and cognitive or emotional empathy as measured by the MET (emotion recognition: $\rho = 0.026$, $P = 0.863$; empathic concern: $\rho = -0.142$, $P = 0.341$; mirroring emotions: $\rho = -0.140$, $P = 0.346$) or cognitive empathy as measured by the MASC (total score: $\rho = -0.159$, $P = 0.286$).

**Table 3**

Means, standard deviations (S.D.), and group comparisons for subscales of IRI, MET, and MASC for patients with NPD, patients with BPD, and healthy controls.

| Measures | Group | | | | | | ANCOVA | | | Simple contrasts ($P$) | | |
| | 1: NPD without BPD ($N=22$) | | 2: BPD without NPD ($N=27$) | | 3: HC ($N=53$) | | | | | | | |
| | $M$ | S.D. | $M$ | S.D. | $M$ | S.D. | $F$ | $P$ | $\omega^2$ | 1 vs. 2 | 1 vs. 3 | 2 vs. 3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *IRI*[a] | | | | | | | | | | | | |
| Cognitive empathy − *perspective taking* | 21.73 | 4.13 | 21.21 | 4.86 | 23.86 | 3.63 | 4.095 | 0.020 | 0.058 | 0.820 | 0.041 | 0.017 |
| Emotional empathy − *empathic concern* | 25.15 | 3.70 | 24.38 | 6.99 | 25.98 | 3.18 | 2.058 | 0.133 | 0.021 | 0.181 | 0.746 | 0.046 |
| | | | | | | | | | | | | |
| *MET*[b] | | | | | | | | | | | | |
| Cognitive empathy − *emotion recognition* | 22.40 | 4.90 | 20.50 | 4.55 | 21.82 | 1.69 | 2.895 | 0.060 | 0.037 | 0.022 | 0.368 | 0.055 |
| Emotional empathy − *empathic concern* | 4.81 | 1.39 | 5.14 | 2.13 | 5.80 | 1.40 | 8.123 | 0.001 | 0.125 | 0.303 | 0.014 | <0.001 |
| Emotional empathy − *mirroring emotions* | 4.55 | 1.26 | 4.70 | 1.80 | 5.42 | 1.39 | 10.71 | <0.001 | 0.163 | 0.080 | 0.019 | <0.001 |
| | | | | | | | | | | | | |
| *MASC*[a] | | | | | | | | | | | | |
| Cognitive empathy (total score) | 31.09 | 5.10 | 29.78 | 8.19 | 33.34 | 5.26 | 3.531 | 0.033 | 0.048 | 0.294 | 0.224 | 0.011 |
| Recognize emotions | 10.43 | 2.57 | 10.63 | 2.96 | 11.10 | 2.15 | 0.969 | 0.383 | −0.001 | 0.626 | 0.485 | 0.184 |
| Recognize thoughts | 3.25 | 0.58 | 3.11 | 0.89 | 3.36 | 0.72 | 0.616 | 0.542 | −0.008 | 0.933 | 0.423 | 0.350 |
| Recognize intentions | 9.56 | 2.37 | 8.85 | 2.55 | 10.10 | 2.28 | 2.520 | 0.086 | 0.029 | 0.258 | 0.437 | 0.028 |

Note. NPD = narcissistic personality disorder, BPD = borderline personality disorder, HC = healthy controls, IRI = Interpersonal Reaction Index, MET = Multifaceted Empathy Test, MASC = Movie for the Assessment of Social Cognition, [a]covariate = gender, [b]covariates = gender, background arousal. The $F$ tests the group effects. These tests (ANCOVAs) are based on the linearly independent pairwise comparisons among the estimated marginal means (covariates = gender or gender and background arousal). Degrees of Freedom: IRI and MASC: d.f.$_{numerator}$ = 2, d.f.$_{denominator}$ = 98; MET: d.f.$_{numerator}$ = 2, d.f.$_{denominator}$ = 97.

## 4. Discussion

The NPD criterion "lack of empathy" has been listed in the DSM since 1980 although it has never been empirically established. In the current study we assessed emotional and cognitive empathy in a clinical sample of patients with a diagnosis of NPD. We used new ecologically valid instruments based on the multifaceted model of empathy. We could not confirm our a priori hypothesis; however, a different pattern of empathy impairment in NPD was found. Thus, the present data provide the first empirical evidence that NPD involves impaired emotional empathy, whereas cognitive empathy remains unaffected. Further, NPD patients overestimate their capacities for emotional empathy and show motivational deficits for cognitive empathy. A "near neighbor" comparison with BPD inpatients provided additional evidence that this pattern is characteristic of NPD. These findings challenge the way "lack of empathy" in NPD is currently conceptualized in the DSM-IV and illustrate that actual standardized assessment tools (e.g., the SCID-II interview) are insufficient for correctly capturing all aspects of "lack of empathy" in NPD.

### 4.1. Cognitive empathy

Assessing cognitive empathy via self-report (IRI) revealed significant impairment in patients with NPD. On the more objective and ecologically valid MET task, no deficit in cognitive empathy in the NPD patients could be detected. A closer look at the cognitive empathy items of the IRI reveals that they capture motivational aspects (all items include the phrasing "… I try to…"; Davis, 1980) rather than a capacity. Thus, underestimation of cognitive empathy on the IRI could reflect a motivational deficit; whereas unaffected performance on the cognitive empathy scale of the MET may capture normal capacity compared to controls.

Although the assessment of cognitive empathy by means of the sensitive MASC task revealed impairments in NPD patients, those impairments could not be replicated when comorbid BPD patients were excluded from the NPD sample. By contrast, but in accordance with prior research (Fonagy et al., 1996; Harari et al., 2010), BPD patients showed a trend toward impairment in cognitive empathy on the MET and clear deficits in cognitive empathy as measured by the MASC compared to controls, especially in recognizing the intentions of other persons. Thus, the subtle deficit in cognitive empathy as measured by the MASC sum score in the total NPD sample may be explained by BPD comorbidity. The finding of significantly better cognitive empathy measures in NPD patients compared to BPD patients on the MET, although not replicated with the MASC, also supports this argument. Further studies with a dimensional assessment of PD pathology should investigate the impact of subthreshold personality disorder pathology (e.g., BPD) on social cognition within NPD patients, in whom PD comorbidity is frequent (Westen et al., 2006).

### 4.2. Emotional empathy

NPD patients do not report impairments in emotional empathy as measured by the IRI. However, the more objective MET task clearly indicates impairments in emotional empathy in the NPD sample on both a mature (empathic concern) and more basic (mirroring emotions) level. Excluding patients with comorbid BPD from the NPD group, the emotional empathy impairment in NPD could be replicated. In the present study, both patient groups, NPD and BPD patients, displayed significantly impaired emotional empathy when compared to healthy controls. Our data suggest that patients with NPD are less able to mirror emotions and are less emotionally responsive to another person's emotional state compared to healthy controls. Interestingly, these deficits in emotional empathy are not perceived by NPD patients, as indicated by the unimpaired self-report IRI scales. Discrepancies in emotional empathy between the IRI and

the MET/MASC may be related to an overestimation of competence in NPD patients. Subjects with narcissistic traits have been shown to overrate their task performance in social judgment and mind-reading skills, which was closely related to the typical narcissistic "self-aggrandizement" (Ames and Kammrath, 2004). In contrast to the more motivational IRI items on cognitive empathy, items for emotional empathy are more related to capacity/ability.

Thus, NPD patients show a characteristic pattern of empathy deficits compared to healthy controls, which includes overestimation of their capacity for emotional empathy with impairment in emotional empathy on a more ecologically valid task (MET). Further, they show preserved cognitive empathy ability with deficits in motivational aspects of cognitive empathy. Behavior specific to NPD could be ascribed to this characteristic pattern of an empathy deficit in NPD. As empathic concern or sympathy is often associated with prosocial behavior such as altruism (Decety and Hodges, 2006), a lack of emotional empathy could account for asocial behavior. Thus, arrogant, overtly disdainful, critical, or aggressive reactions toward others' feelings, or, in more severe forms, attempts to con, manipulate, or emotionally exploit others, could be due to an overestimation of emotional empathy with an actual lack of ability. Also, cognitive and emotional empathic functions have been found to be necessary for a person's relational competence, especially for maintaining romantic relationships (Davis and Oathout, 1987), which has been shown to be problematic for NPD patients. Also, in nonclinical samples of adults who show narcissism as a personality trait, lack of empathy has been linked to entitlement, exploitativeness (Watson et al., 1984), need for power, control, and dominance (Wiehe, 2003).

The present results suggest that NPD patients display a similar pattern of empathic deficits as has been described for psychopathic individuals in whom empathic dysfunction is also an essentially diagnostic criterion (Wiehe, 2003; Blair, 2005b; Goldberg et al., 2007). Psychopathy is associated with deficits in emotional empathy (Blair, 2005b; Goldberg et al., 2007) and largely unimpaired cognitive empathy (Richell et al., 2003; Dolan and Fullam, 2004). The neuroanatomical basis of psychopathy has been ascribed to a dysfunction of the amygdala (Kiehl et al., 2001), and one could speculate about a common amygdala dysfunction in psychopathy and NPD correlating to the deficit in emotional empathy.

With regard to BPD, our results argue for impaired emotional and cognitive empathy in these patients. The results of previous research on empathy in BPD had found impairment in cognitive empathy with preserved emotional empathy (Harari et al., 2010). In contrast to our study, BPD patients with comorbid axis I disorders were excluded in this study, which might explain discrepancies. Further research is needed to address this topic.

### 4.3. Convergent validity

Assessment of the NPD criterion "lack of empathy" is based on DSM description or SCID-II interview, both of which are not explicitly based on a theoretical construct of empathy. The DSM-IV diagnostic criterion "lack of empathy" is described as: "lacks empathy: is unwilling to recognize or identify with the feelings and needs of others." According to the wording "is unwilling," the criterion does not imply someone's *ability* to recognize or identify with the feelings and needs of others, but rather his/her *motivation*. Similarly, the exact wording in the SCID-II interview is as follows: "You've said that you're NOT really interested in other people's problems or feelings. (Tell me about that.)" And further: "You've said that people have complained to you that you don't listen to them or care about their feelings. (Tell me about that.)" (p. 27). Again, the wording does not assess the ability, but rather the motivation. IRI items of cognitive empathy also assess motivation (all items include the phrasing "…I try to…"; Davis, 1980) rather than ability. In our study, we found the self-report measure of cognitive empathy (IRI subscale "perspective taking") to

be negatively correlated with the criterion "lack of empathy" as measured by the SCID-II in NPD patients. This indicates that the SCID-II mainly assesses the subjectively perceived motivational deficit in cognitive empathy.

By contrast, the more objective and ecologically valid measure of emotional empathy by means of the MET did not correlate with the SCID-II parameter "lack of empathy," indicating that ability was not assessed by the SCID-II. To our knowledge, all previous studies that assessed sensitivity, specificity, and convergent validity of the criterion "lack of empathy," used DSM criteria or the SCID-II interview (Morey, 1985; Ronningstam and Gunderson, 1990; Blais et al., 1997; Holdwick et al., 1998; Gunderson and Ronningstam, 2001; Fossati et al., 2005). Thus, one conclusion of those data could be that the lack of convergent and divergent validity of the criterion "lack of empathy" in previous studies is mainly due to two points: First, the imprecise definition of empathy, focusing mainly on the motivational aspects and disregarding the multidimensional aspects of empathy, and second, the lack of appropriate assessment tools. Our data argue for a definition of "lack of empathy" based on an ability, at least in addition to motivation.

The study has some limitations. First, the presented results are based on a relatively small sample of psychiatric inpatients. Thus, our results have to be replicated in less impaired outpatient samples of patients with NPD. Also, further studies should take into account dimensional personality traits such as schizotypy (Henry et al., 2008) or psychopathy. Further studies should also address the topic of specificity of empathy impairment and behavioral consequences, for example, by including motor empathy (Blair, 2005a), using other complex social cognitive tasks (Golan et al., 2006; Zaki et al., 2008, 2009), or using in- and out-group designs (De Dreu et al., 2010). Also, the impact of state variables moderated by emotional regulation abilities (e.g. impact of anger, shame and envy) and self-esteem regulation abilities on empathic functioning should be addressed in future studies (see Tangney, 1995; Campbell et al., 2000; Netzlek et al., 2007).

The data provide the first empirical evidence that patients with NPD display significant impairments in emotional empathy, that is, the ability to feel what other people feel. In contrast, patients with NPD did not show deficits in cognitive empathy, that is, in taking another person's perspective. Furthermore, our data argue that subtle deficits in cognitive empathy in NPD patients are related to BPD comorbidity. Emotional empathy deficits seem to be shared with "near neighbor" BPD, whereas preliminary empirical evidence suggests that impairments in cognitive empathy abilities could to be more specific for BPD. In addition, NPD patients overestimate their abilities to show emotional empathy and report a motivational deficit for cognitive empathy compared to controls, whereas BPD patients don't. The current DSM-IV-based NPD symptom "lack of empathy" and the assessment by the SCID-II interview do not capture the deficits in emotional empathy measured in the present study with more ecologically valid tasks. We suggest a more precise theory based definition of the criterion "lack of empathy," and advocate for the use of more sensitive and multidimensional assessment tools for empathy in NPD.

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