Interpersonal evaluation bias in borderline personality disorder

Sven Barnow [a,*], Malte Stopsack [a], Hans Joergen Grabe [b], Claudia Meinke [c], Carsten Spitzer [d], Klaus Kronmüller [e], Simkje Sieswerda [a]

[a] Department of Clinical Psychology, University of Heidelberg, Germany
[b] Department of Psychiatry, University of Greifswald, Germany
[c] Institute of Community Medicine – Section Epidemiology of Health Care and Community Health, University of Greifswald, Germany
[d] University Medical Center Hamburg-Eppendorf, Germany
[e] Department of Psychiatry, University of Heidelberg, Germany

ARTICLE INFO

ABSTRACT

Background: The cognitive theory of personality disorders hypothesizes that the emotional dysregulation and interpersonal problems in individuals with borderline personality disorder (BPD) are, at least partially, caused by dysfunctional cognitive schemas. These schemas lead to biased evaluation of environmental and interpersonal stimuli.
Method: This study examined the interpersonal evaluations of individuals with BPD, depressive and healthy control participants with the thin-slice judgments paradigm. Participants were asked to evaluate six persons in six film clips, which showed these persons for 10 s, during which these persons entered a room and took a seat. Interpersonal style of the BPD group was investigated with the Inventory of Interpersonal Problems (IIP-C) questionnaire.
Results: Individuals with BPD judged the persons as being more negative and aggressive and less positive than the healthy participants, and more aggressive than the depressive individuals. In addition, individuals with BPD reported more extreme interpersonal behavior relative to the controls.
Conclusions: The findings indicate an aggressivistic evaluation bias and elevated levels of interpersonal problems in individuals with BPD as suggested in the cognitive theory.

© 2009 Elsevier Ltd. All rights reserved.

Introduction

Borderline personality disorder (BPD) is characterized by marked problems in emotion regulation, impulsivity and poor interpersonal relationships (American Psychiatric Association, 2000). The cognitive theory of personality disorders (PDs) hypothesizes that these problems are at least partly caused by cognitive schemas leading to biased evaluation and interpretation of environmental stimuli (Beck & Freeman, 1990; Beck, Freeman, & Davis, 2004). Beliefs or schemas are thought to be basic processing units that are organized according to their functions and content. A schema is considered hypervalent when the threshold for its activation is low and when it can be triggered by remote or trivial stimuli (Beck et al., 2004). For example, the hypervalent schema "The world (and others) are dangerous" would lead to biased

information processing where a person interprets neutral situations as dangerous, feels anxious, and wants to get away.

Three basic schemata are thought to play a central role in BPD: "The world is (and others are) dangerous and malevolent", "I am powerless and vulnerable", and "I am inherently bad and unacceptable" (Arntz, 2004; Pretzer, 1990). Several authors have tested the hypothesis that BPD is characterized by these beliefs. For example, Dreessen and Arntz (1995) developed the Personality Disorder Belief Questionnaire (PDBQ) with beliefs from the Appendix of Beck and Freeman (1990) and additional BPD specific beliefs. A set of six beliefs appeared typical for BPD. These beliefs were characterized by loneliness, unloveability, rejection and abandonment by others, viewing the self as bad, and feeling they need to be punished; themes which all correspond with Pretzer's three basic schemas for BPD. Recently, Butler, Brown, Beck, and Grisham (2002) developed a BPD beliefs scale including 14 items (e.g., "I cannot trust other people", "People will take advantage at me if I give them the chance", "A person whom I am close to could be disloyal or unfaithful") that discriminate between BPD patients and persons with other PDs. Using the World Assumption Scale, Giesen-Bloo and Arntz (2005) provided additional evidence for the

three dominant beliefs in individuals with BPD. They suggested that these beliefs were associated with the severity of the borderline psychopathology.

Basic schemata in BPD have also been investigated with projective approaches such as the Thematic Apperception Test (TAT), while others have relied on narrative data to assess evaluation bias in BPD patients (e.g., Nigg, Lohr, Westen, Gold, & Silk, 1992; Segal, Westen, Lohr, & Silk, 1993; Stuart et al., 1990; Westen, Lohr, Silk, Gold, & Kerber, 1990; Westen, Ludolph, et al., 1990). Some studies also asked patients with BPD to evaluate their current relationships, e.g., with relatives (Benjamin & Wonderlich, 1994; Stern, Herron, Primavera, & Kakuma, 1997). Other authors used standardized stimuli, but non-standardized, free response formats. For example, Arntz and Veen (2001) presented film characters in 10-minute film clips with emotional themes such as abandonment, rejection, and abuse and asked borderline and control participants for their spontaneous evaluations. Wagner and Linehan (1999) studied facial expression recognition in BPD with standardized slides of emotional faces and free responses. In general, these studies demonstrated that individuals with BPD evaluated others as being more malevolent and hostile relative to individuals with other and no mental disorders, results that are consistent with the hypotheses of the cognitive model on BPD. However, as the stimuli and/or response formats of studies were not standardized, these studies leave much room for confounding factors. On the other hand, standardized stimuli may be rather artificial. The use of schematic faces or pictures as stimuli neglects the fact that in everyday life people process a wide range of stimuli, including facial expression, behavior, and social context. Indeed, a fleeting glimpse or mere glance can lead to an instantaneous evaluative judgment.

The present study therefore assessed evaluation bias with the "thin-slice judgments" paradigm, in which participants have to evaluate brief excerpts of behavior (Ambady, Shih, Kim, & Pittinsky, 2001): stimuli which are both standardized and ecologically valid. In our study we used silent film clips of about 10 s, which showed a person entering a room and taking a seat. Previous work has demonstrated that the thin slices method provides reliable information about a range of psychological constructs, including dispositional characteristics and social relations (for a review Ambady, Bernieri, & Richeson, 2000), possibly because the judgments are based on relatively automatic processes (Ambady & Rosenthal, 1992; Bargh, 1994; LeDoux, 1996).

Furthermore, most of the aforementioned studies did not control their results for comorbid psychopathology. Negativistic information processing biases are thought to be particularly characteristic of depression (e.g., Beck, 1976; Bower, 1981), an assumption supported by several empirical studies. For example, Gotlib et al. applied an emotion face dot-probe, emotional Stroop and recall task, and demonstrated disorder- and content-specific negative attentional and recall biases in depressed individuals (e.g., Gotlib, Kasch, et al., 2004; Gotlib, Krasnoperova, Yue, & Joormann, 2004). Considering the high prevalence of major depressive disorder (MDD) in BPD (e.g., lifetime diagnosis of 90%; e.g., Barnow et al., 2007), controlling for the presence of depression seems especially important in studies on evaluation bias in BPD. Studies on evaluations in BPD with non-standardized stimuli that did control for depression suggested that negative evaluation biases are even stronger in patients with BPD than in depressive (non-BPD) patients (e.g., Baker, Silk, Westen, Nigg, & Lohr, 1992; Benjamin & Wonderlich, 1994; Segal et al., 1993; Stern et al., 1997; Stuart et al., 1990; Westen, Lohr, et al., 1990; Westen, Ludolph, et al., 1990). One explanation for this finding would be that BPD is characterized by histories of childhood traumata such as sexual abuse, physical abuse, and neglect (e.g., Barnow, Plock, Spitzer, Hamann, & Freyberger, 2005; Zanarini, 2000;

Zanarini & Frankenburg, 1997) which have been linked to malevolent views of others (e.g., Arntz, Dietzel, & Dreessen, 1999; Beck et al., 2004). Thus, besides applying a standardized and ecologically valid assessment of evaluation bias, this study also included a (non-BPD) depressive group to control for the effect of depression on interpersonal evaluation bias in BPD.

A final limitation of the aforementioned studies is that none of these studies included an examination of interpersonal behavior of individuals with BPD, although the cognitive theory suggests a close link between evaluative processes and interpersonal behavior (Beck et al., 2004). Interpersonal problems are one of the dominant characteristics of BPD (American Psychiatric Association, 2000) and the effect of these difficulties can be profound. However, despite the centrality of interpersonal problems to clinical descriptions of BPD pathology, there is a lack of empirical research investigating the interpersonal behavior of individuals with BPD. In clinical settings, individuals with BPD often report conflicted relationships, intense outbursts of interpersonal hostility, over-control of anger, quarrelsomeness, and submissiveness (Gunderson, 1996, 2001; Horowitz, 2004; Linehan, Tutek, Heard, & Armstrong, 1994). A recent study investigating affective experience and interpersonal behavior of individuals with BPD (Russel, Moskowitz, Zuroff, Sookman, & Paris, 2007) found elevated levels of submissive and quarrelsome behavior, reduced levels of dominant behavior, and overall more extreme behavior relative to non-clinical control participants. We therefore decided to consider interpersonal behavior in our study.

In sum, this study tested three hypotheses. Firstly, we hypothesized that BPD is characterized by a negativistic interpersonal evaluation bias. We expected that individuals with BPD would view others as having less positive, more negative, and more aggressive traits than non-BPD participants with current depression and healthy control subjects. We also expected a smaller contrast with the depressive control group than with the healthy control group, as depressive individuals are characterized by negativistic biases as well. Secondly, we assumed that an aggressivistic interpersonal evaluation bias would characterize BPD in particular. We expected more negative evaluations for aggressive traits than for non-aggressive negative and positive traits in BPD group, but not in the control groups. This hypothesis is based on the association between BPD, childhood trauma and malevolent views of others. Thirdly, we hypothesized that BPD is characterized by more extreme interpersonal behavior. More specifically, we expected that the BPD group would show lower degrees of affiliation and dominance and higher degrees of hostility, social avoidance and submissiveness than the control groups.

Method

Participants

One hundred and fifteen individuals (51 with BPD, 23 with unipolar depressive disorder and 41 non-disordered) participated in this study. Participants with BPD were recruited from consecutively admitted inpatients at the Hospital of Psychiatry and Psychotherapy of the University of Greifswald, Germany. The depressive patients without BPD (DEP) were recruited among inpatients of the Department of Psychiatry of the University of Heidelberg ($n = 13$), or among outpatients of the psychotherapeutic ambulatory of the University of Heidelberg ($n = 10$). Trained diagnostic raters assessed the presence of BPD with the Structured Clinical Interview for DSM-IV Axis II disorders (SCID-II; First et al., 1995; German version: (Wittchen, Zaudig, & Fydrich, 1997) and the presence of a MDD and a current depressive episode according to DSM-IV criteria (APA, 2000) with the Diagnostic Interview for Axis I

Disorders (DIA-X; Wittchen & Pfister, 1997). Exclusion criteria for both patient groups included a personal history of schizophrenia-spectrum psychosis, organic mental disorder, learning disabilities, and bipolar disorder as assessed by the DIA-X (Wittchen & Pfister, 1997). An additional exclusion criterion for the DEP group was presence of any cluster B personality disorder (PD) as assessed with the SCID-II self-report questionnaire (Wittchen, Zaudig, & Fydrich, 1997). Healthy controls (HC) were students of medicine or psychology of the Universities of Greifswald ($N = 25$) or Heidelberg ($N = 16$). Inclusion criteria were: (a) no current psychiatric diagnosis or (b) no history of any axis I or axis II disorder as assessed with the DIA-X interview and SCID-II questionnaire.

A subsample of 32 BPD patients completed questionnaires on interpersonal behavior (IIP-C: Horowitz, Alden, Wiggins, & Pincus, 2000) and current psychopathology (SCL-90-R: Derogatis, 1983a, 1983b). The analyses of interpersonal problems were based only on this subsample. The 32 BPD patients included in these analyses did not differ from those ($n = 19$) who were not considered with regard to age ($F(1, 49) = .29$, $p > .05$), gender ($\chi^2(1, N = 51) = 1.27$, $p > .05$), and the extent of the evaluative bias for positive ($F(1, 49) = .69$, $p > .05$), negative ($F(1, 49) = 1.75$, $p > .05$), and aggressive traits ($F(1, 49) = 2.06$, $p > .05$).

Materials

Diagnostics

Presence of PDs was assessed with the SCID-II for the DSM-IV (SCID-II; First et al., 1995; German version: Wittchen, Wunderlich, et al., 1997; Wittchen, Zaudig, et al., 1997). The SCID-II has shown a good interrater reliability (κ between .51 and .68 for lifetime diagnoses; Williams et al., 1992). In this study, reliability information with regard to BPD diagnosis was collected by joint-interviews with 8 patients. The interrater agreement between the two interviewers appeared to be very good (mean κ of .87 for the nine BPD criteria). The Semi-Structured Assessment for the Genetics of Alcoholism (SSAGA; Bucholz et al., 1994) was used to determine the presence of alcohol use disorders (AUDs). The individual questions are based on well-validated items from other research instruments, such as the Diagnostic Interview Schedule (Robins, Helzer, Croughan, & Ratcliff, 1981). Cross-center studies of the SSAGA indicate good reliability (test–retest agreement $\geq .87$ and .57 for DSM-III-R dependence and abuse diagnoses respectively; Bucholz et al., 1994). Presence of post-traumatic stress disorder (PTSD) was checked with the PTSD-section of the SCID-I (First, Spitzer, Gibbon, & Williams, 1997; German version: Wittchen, Wunderlich, et al., 1997). The DIA-X interview was used to assess all other axis I disorders in the patients. This semi-structured interview has been based on the research criteria of the 10th revision of the International Classification of Disorders (ICD-10; World Health Organisation, 1991) and the DSM-IV (APA, 2000), and represents a further development of the Composite International Diagnostic Interview (CIDI; Wittchen, Lachner, Wunderlich, & Pfister, 1998). Prior studies using the DIA-X have documented satisfactory interrater reliabilities (κs between .49 for somatoform disorders and .83 for anorexia), and good validity based on concordance with clinical psychiatric diagnoses (κs between .39 for psychotic disturbances and .82 for panic disorders; Wittchen & Pfister, 1997).

Current psychopathology

Current psychopathology was assessed using the revised version of the Symptom Check List-90 (SCL-90-R; Derogatis, 1983a, 1983b; German version: Franke, 2002). The SCL-90-R is a 90-item, widely used self-report measure of current psychopathology. The reliability and validity of the German version of the SCL-90-R are similar to those of the original.

Evaluation task

Participants of our study evaluated 'thin slices' of concrete, moving, everyday persons instead of abstract, static, 'Hollywood' stimuli. We applied this paradigm with standardized stimuli and clear task directions. This ruled out the explanation that negative evaluations of BPD patients result from the stimuli or tasks themselves, e.g., own parents (Benjamin & Wonderlich, 1994) or ambiguous projective tasks (e.g., Westen, Lohr, et al., 1990). Standardization also reduced measurement error resulting from irrelevant stimulus factors such as gender, language, thematic differences. In more detail, participants were asked to rate the personalities of six unknown persons. These persons were three female and three male students, which were presented in silent film clips of about 10 s. Each clip showed a person entering a room, walking over and taking a seat (thin-slice judgments paradigm of Ambady et al., 2001). Film clips were presented in randomized order. After each clip, participants were asked to judge the person and were encouraged to make their judgments without much thought. Judgments had to be expressed by trait ratings on 19, 6-point Likert-scales with the poles 'applies not at all' (score 1) to 'applies perfectly' (score 6). Thirteen scales reflected sub-traits from the five-factor model of personality, i.e., warm, active, sociable (sub-traits of extraverted), impulsive, anxious, depressed (sub-traits of neurotic), interested, tolerant, empathic (sub-traits of open-minded), modest, helpful (sub-traits of agreeable), competent, and dutiful (sub-traits of conscientious). Six further scales assessed evaluations on six traits from the German Normed Adjective List (GNAL; Hager & Hasselhorn, 1994), i.e., serious, respectful, nice, exploitive, brutal and mischievous. For each participant, we computed evaluation scores reflecting the average evaluation of the rated persons on each big-five trait (i.e., average scores on the corresponding sub-traits), each GNAL-trait, and on the aggressive (i.e., brutal, exploitive, mischievous), negative non-aggressive (i.e., neurotic sub-traits), and positive trait groups (i.e., remaining sub-traits except serious). The latter grouping was based on independent valence ratings of the GNAL-traits (Hager & Hasselhorn, 1994) and our own judgments.

Assessment of interpersonal style

The Inventory of Interpersonal Problems questionnaire (IIP-C; Horowitz, et al., 2000; Horowitz, Rosenberg, Baer, Ureno, & Villasenor, 1988) was used to measure interpersonal style. The IIP-C assesses the nature of interpersonal patterns and yields a total score (IIP$_{gen}$) indicating the extremity of interpersonal style. We computed values for the eight subscales representing different interpersonal styles including: Domineering, Vindictive, Cold, Socially Avoidant, Submissive, Exploitable, Overly Nurturing, and Intrusive. We further calculated scores for the quadrant dimensions, i.e., Hostile Dominant, Hostile Submissive, Friendly Dominant, and Friendly Submissive, as well as the central interpersonal dimensions of Affiliation and Dominance on the basis of the scores of the eight subscales (see, Alden, Wiggins, & Pincus, 1990; Ruiz et al., 2004). Individuals with personality disorder display especially a hostile dominant style characterized by quarrelsomeness, coldness, and unstable relationships (Horowitz, Strauß, & Kordy, 2000). The psychometric properties of the German version of the IIP-C are as good as those of the original version (Horowitz, et al., 2000).

Procedure

The experiment took about 3 h, divided over 2–3 sessions. In a first session, participants received general information about the study and were administered a demographic checklist, the DIA-X and PTSD-section of the SCID-I (34 BPD patients), and the SSAGA interview. Healthy controls additionally filled out the SCID-II questionnaire. In a second session, BPD participants were

interviewed with the SCID-II. Participants who fulfilled the inclusion criteria were invited to a final session, in which they performed the evaluation task and filled out the IIP-C and SCL-90-R. Having completed the battery, the participants were debriefed and received a small financial compensation (patients) or study credits (students).

Statistical analyses

The data analyses were computed using the Statistical Package for the Social Science (SPSS for Windows, version 15.0). Between-group comparisons involving categorical data were evaluated using the chi-square statistic (χ^2) corrected for continuity. In cases where conditions of the χ^2 statistic were violated (e.g., where cell frequency was less than five), Fisher's exact test was computed. The analyses of age, the SCL-90-R, evaluation and IIP-C scores entailed calculation of group comparisons by means of ANOVAs with group (BPD, DEP, HC) as factor and evaluation scores as dependent variables. Effect sizes were assessed with Cohen's d (i.e., $d = (Mean_1 - Mean_2)/(\sqrt{(SD_1^2 - SD_2^2)/2})$; Cohen, 1988).

Results

Participant characteristics

Demographic and diagnostic characteristics of the groups are presented in Table 1. The BPD group was older than the healthy control group. Correlations between age and evaluation scores were however not significant (BPD: $rs < .113$; $ps > .10$; DEP: $rs < .356$; $ps > .10$; HC: $rs < .175$; $ps > .10$). Additionally, the inclusion of age as a covariate in the ANOVA did not change any of the significant findings reported below. The borderline group displayed significantly higher degrees of psychopathology than the healthy group, but not in comparison to the depressive group.

There was a high rate of comorbidity of BPD with affective disorders (87%), anxiety disorders (46%), substance abuse/dependence (21%), somatoform disorders (42%), eating disorders (25%), and post-traumatic stress disorder (PTSD; 68%). The frequency of co-occurring axis II disorders was 29% for cluster A PDs, 14% for (other) cluster B PDs, and 64% for cluster C PDs

Table 1
Demographic and diagnostic characteristics and SCL-90-R scores of borderline patients (BPD), depressive individuals (DEP), and healthy controls (HC).

	BPD (n = 51)		DEP (n = 23)		HC (n = 41)		BPD vs.	
							DEP	HC
							p	p
	M	SD	M	SD	M	SD		
Gender (% male)	9.8		8.7		14.6		1.00	.531
Age	27.1	7.4	28.9	8.0	23.4	2.6	.453	.011
SCL-90								
Somatization	.93	.68	.88	.75	.16	.22	.905	<.001
Obsessive-compulsive	1.52	.82	1.38	.65	.25	.28	.601	<.001
Interpersonal sensitivity	1.45	.72	1.30	1.00	.19	.26	.625	<.001
Depression	1.62	.86	1.67	.87	.20	.28	.946	<.001
Anxiety	1.33	.76	1.03	.84	.14	.18	.123	<.001
Anger–hostility	1.07	.94	.86	.65	.18	.19	.390	<.001
Phobic anxiety	.94	.94	.61	.93	.02	.07	.173	<.001
Paranoid ideation	1.08	.85	.73	.79	.10	.16	.087	<.001
Psychoticism	.83	.60	.68	.57	.06	.12	.410	<.001
GSI	1.26	.63	1.04	.65	.15	.13	.182	<.001

Note: SCL-90-R: DEP vs. HC: all scales $p < .01$.

Table 2a
Evaluation scores for the big-five traits in borderline patients (BPD), depressive individuals (DEP), and healthy controls (HC).

Scales	BPD (n = 51)		DEP (n = 23)		HC (n = 41)		BPD vs.			
							DEP		HC	
	M	SD	M	SD	M	SD	p	d	p	d
Neuroticism	2.73	.37	2.63	.30	2.50	.34	.245	.29	.002	−.64
Extraversion	3.77	.36	3.87	.22	3.96	.22	.142	.31	.003	.62
Openness to Experience	3.77	.33	3.83	.21	3.97	.23	.343	.20	.001	.69
Agreeableness	3.75	.32	3.80	.25	4.00	.27	.435	.17	<.001	.84
Conscientiousness	3.89	.39	3.96	.27	4.12	.29	.369	.20	.002	.66

Notes: HC vs. DEP: neuroticism, extraversion: n.s.; openness to experience: $F = 5.68$, $p = .010$, agreeableness: $F = 8.57$, $p = .002$; conscientiousness: $F = 4.43$, $p = .019$.

Evaluation scores

ANOVAs of the evaluation scores yielded significant group effects for several traits. Post-hoc-analysis showed that the evaluations of the BPD group differed significantly from those of the healthy controls for all traits ($.62 \leq ds \leq .84$), with the borderline patients evaluating the persons as more neurotic, less extraverted, less open, less agreeable and less conscientious (big-five traits). The BPD group further evaluated the persons as less nice, respectful, and serious, and more exploitive, brutal, and mischievous (additional traits). Evaluation differences between the borderline and depressive group were significant for two traits ($ds = .51$) and trends were found for four traits ($.36 \leq ds \leq .45$). The BPD group evaluated the persons as less serious and more mischievous, and tended to rate the persons as less nice and respectful, and more exploitive and brutal than the depressive group. See Table 2a for the evaluation scores and outcomes of the post-hoc tests for the big-five traits and Table 2b for those of the additional traits.

Analysis of the evaluation score differences for aggressive, negative, and positive traits resulted in a clearer pattern. For this analysis, we transformed the evaluation score for each trait group into a z-score, using the control group as reference and inverted evaluation scores for the positive traits, so that higher z-scores reflect more negative evaluations. The four z-scores showed satisfying internal consistencies (Cronbach's αs): aggressive traits: $\alpha = .94$, negative (non-aggressive) traits: $\alpha = .62$, positive traits: $\alpha = .93$.

ANOVAs indicated that judgments for all three composite z-scores (aggressive, negative, and positive) differed between groups. The BPD group showed significantly more negative evaluations than the healthy group for aggressive ($p < .01$, $d = .88$), negative ($p < .01$, $d = .67$), and positive traits ($p < .01$, $d = .77$), and also more negative evaluations for aggressive traits than the

Table 2b
Evaluation scores for the traits taken from the GNAL-list (Hager & Hasselhorn, 1994) of the BPD, depressive (DEP) and healthy (HC) group.

	BPD (N = 51)		DEP (N = 23)		HC (N = 41)		BPD[a] vs.			
							DEP		HC	
	M	SD	M	SD	M	SD	p	d	p	d
Serious	3.73	.45	3.93	.21	3.96	.38	.037	.51	.004	.55
Respectful	4.23	.39	4.39	.34	4.43	.34	.066	.43	.008	.54
Nice	4.17	.40	4.35	.40	4.38	.36	.051	.45	.008	.55
Exploitive	2.22	.61	1.96	.53	1.88	.44	.053	.44	.003	.62
Brutal	1.76	.58	1.56	.52	1.30	.31	.091	.36	<.001	.96
Mischievous	2.04	.61	1.74	.53	1.58	.41	.025	.51	<.001	.87

[a] Dunnett test (one-tailed); HC vs. DEP: brutal: $F = 6.40$, p (one-tailed) $= .007$, $d = .65$; other traits n.s.
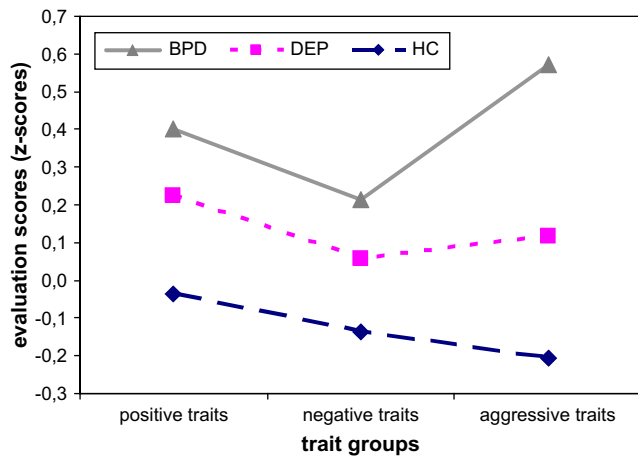
Fig. 1. Composite evaluation scores for the positive, negative (non-aggressive) and aggressive traits of the borderline (BPD), depressive (DEP) and healthy control group (HC). *Notes*: higher evaluation scores mean less positive and more negative evaluations. **Between-group differences**: BPD vs. HC: positive traits ($p < .01$, $d = .77$), negative traits ($p < .01$, $d = .67$), aggressive traits ($p < .01$, $d = .88$); BPD vs. DEP: aggressive traits ($p = .040$, $d = .45$); **within-group differences**: BPD: aggressive traits vs. negative traits: $p < .05$.

depressive group ($p = .040$, $d = .45$) but not for the negative ($p = .200$, $d = .29$) and positive traits ($p = .174$, $d = .29$). Analyses of within-group differences revealed significant differences in the BPD group only ($F(2, 49) = 4.36$, $p < .05$) with significantly higher z-scores for aggressive traits than for negative traits ($p < .05$). Fig. 1 shows the evaluation z-scores for each participant group.

Interpersonal styles

Table 3 displays the IIP-C scores for the subscales, quadrant and central dimensions of the three groups. The scores differed significantly between the groups. Scores of the BPD group were lower for Affiliation, similar for Dominance and higher for all other scales in comparison to the healthy control group. The BPD group further demonstrated lower scores relative to the depressive group for

Table 3
Group comparisons for interpersonal styles (IIP-C scores) of the borderline (BPD), depressive (DEP), and healthy group (HC).

	BPD ($n = 32$)		DEP ($n = 23$)		HC ($n = 41$)		BPD vs.	
							DEP	HC
							p	p
Subscales								
Domineering	8.75	5.61	3.70	3.14	3.00	2.89	<.001	<.001
Vindictive	13.22	5.62	7.35	5.53	3.52	2.73	<.001	<.001
Cold	14.84	6.66	9.57	6.96	4.59	4.32	.003	<.001
Socially Avoidant	18.88	7.30	13.39	9.10	6.13	5.04	.009	<.001
Non-assertive	17.78	7.37	18.22	7.80	9.20	6.33	.964	<.001
Exploitable	15.59	6.11	14.68	7.41	8.43	5.56	.816	<.001
Overly Nurturing	15.92	5.74	15.57	7.37	7.90	5.39	.967	<.001
Intrusive	11.43	4.86	8.48	5.47	5.78	4.29	.049	<.001
Quadrants								
Hostile Dominant	29.90	12.62	16.72	10.92	8.88	6.87	<.001	<.001
Hostile Submissive	41.94	14.87	33.03	17.57	15.87	10.97	.043	<.001
Friendly Dominant	28.87	8.77	22.10	10.68	13.48	8.69	.016	<.001
Friendly Submissive	39.42	14.04	38.57	17.16	20.51	12.75	.966	<.001
Central dimensions								
Dominance	−4.00	4.08	−5.80	4.08	−2.48	2.87	.127	.138
Affiliation	−0.63	4.25	1.93	3.99	1.64	2.15	.014	.012
Total Score	1.82	.49	1.42	.62	.76	.45	.010	<.001

Affiliation, similar scores for Dominance and higher scores for most of the other dimensions and scales, including Hostile Dominant, Hostile Submissive and Social Avoidant, but not including Friendly Submissive.

Discussion

The present study investigated interpersonal evaluation bias in BPD with the thin slices paradigm. As hypothesized, BPD appeared to be characterized by a negativistic interpersonal evaluation bias. Evaluations of others by patients with BPD appeared less positive, more negative and more aggressive than those by non-disordered controls. These findings are consistent with those of other studies (e.g., Arntz, Dreessen, Schouten, & Weertman, 2004; Arntz & Veen, 2001; Sieswerda, Arntz, & Verheul, still in review process), although these studies examined this phenomenon using quite different methods. Negative interpersonal evaluation biases further appeared rather specific to BPD with stronger biases in BPD patients compared to both depressive and non-BPD patients. These findings are again in line with other studies showing more negativistic interpretations of non-standardized stimuli in BPD compared to depressive disorder (e.g., Benjamin & Wonderlich, 1994).

The present findings further corroborate our second hypothesis, viz. that negative interpersonal evaluative bias in BPD is most pronounced for traits that can be characterized as aggressive and threatening (e.g., brutal, exploitive, and mischievous). Patients with BPD, but not the control groups, were found to show particularly more negative evaluations on aggressive relative to non-aggressive negative (e.g., depressive and anxious) traits. This specific evaluation bias might reflect the many negative interpersonal experiences of these patients, which often include childhood sexual, physical or emotional abuse, or physical or emotional neglect (Barnow et al., 2005; Barnow, Spitzer, Grabe, Kessler, & Freyberger, 2006; Zanarini, 2000; Zanarini & Frankenburg, 1997).

Several studies have shown that individuals with BPD have more difficulty in their adaptive functioning and interpersonal behavior compared to healthy individuals and individuals with non-BPD cluster B PDs (Kraus & Reynolds, 2001) or axis I disorders (Zittel, Conklin, & Westen, 2005). Indeed, interpersonal problems are a hallmark of BPD: seven of the nine DSM-IV BPD criteria directly affect close relationships (e.g., fears of abandonment, unstable sense of self, inappropriate anger). Moreover, the consideration of interpersonal behavior style is important because it is one of the proposed maintaining mechanisms in the cognitive theory assuming that schemas do not only influence the way how we perceive and judge others (and the environment) but also how we behave in social situations.

Our third main finding was that individuals of the BPD group showed higher scores than the healthy control group on all of the eight IIP-C subscales, and had higher values relative to the depressed control subjects on the subscales: Domineering, Vindictive, Cold, Socially Avoidant, and Intrusive. Regarding the quadrant dimensions, individuals with BPD also had elevated values with regard to Hostile Dominance, Hostile Submissiveness and Friendly Dominance than the controls, but lower scores than the other groups on the dimension of Affiliation. These results are consistent with clinical descriptions (e.g., Gunderson, 1996, 2001; Horowitz, 2004) and the results of a recent study by Russel et al. (2007) suggesting that BPD is associated with increased hostility and increased submissiveness, though the present study only found increased hostile submissiveness (i.e., social inhibition) and not friendly submissiveness (i.e., over-accommodation) in BPD. In addition, the present study indicates that individuals with BPD also characterize their interpersonal behavior as overly nurturing, exploitable, and socially avoidant. These findings indirectly support

clinical descriptions showing that individuals with BPD fluctuate between proactive reassurance seeking, socially avoidant behavior, and overly nurturing behavior in response to separation from significant others (Gunderson, 1996). Furthermore, Russel et al. (2007) found that subjects with BPD reported elevated levels of quarrelsome behavior, but did not report lower levels of agreeable behavior, and also displayed greater individual variability in agreeableness. The authors suggested that individuals with BPD shift in their perception of others: while idealization of, and dependency on, another may trigger warm and friendly social behavior, devaluation and avoidance of intimacy may lead to elevated hostility. The findings of the present study provide some support for this interpretation. Further research should, however, examine interpersonal behavior of individuals with BPD in more detail using a multi-method approach and longitudinal data.

Our findings hold potentially clinical implications. Firstly, an improved understanding of the evaluation bias and interpersonal characteristics of BPD may help clinicians more effectively navigate through the relational problems that often occur during treatment with these patients. For example, several studies have shown that lower scores on the affiliation dimension are associated with a more negative therapeutic alliance and with more negative outcomes in psychotherapy in general (Dinger et al., 2007; Puschner, Bauer, Horowitz, & Kordy, 2005; Schauenburg, Kuda, Sammet, & Strack, 2000); and past research has reported the importance of the therapeutic relationship with this specific clinical population (e.g., Gunderson et al., 1989; Spinhoven, Giesen-Bloo, van Dyck, Kooiman, & Arntz, 2007; Yeomans, Selzer, & Clarkin, 1993). Secondly, we recommend that research on therapy effectiveness should consider the extent of evaluation bias and interpersonal behavior problems as additional outcome measures.

Some limitations of this study should be noticed. First, this study investigated *immediate* impressions. Secondary evaluations are as important for interpersonal functioning and may be more amenable to treatment. Second, our assessment of interpersonal behavior was based on self-report (IIP-C) and could be improved by the inclusion of a more objective measure based on reports of others. Third, this study did not examine the causal relations of Beck's model of BPD. We did neither study traumatic precursors (for example by including childhood trauma data), nor examine the meditational role of schema-activation (for example by manipulating it experimentally), nor directly investigated the correlation between negativistic evaluation bias and dysfunctional interpersonal behavior (for example with a state- instead of a trait-measure of interpersonal problems). Fourth, the healthy control group consisted of medical and psychology students, who may have relatively friendly attitudes, particularly to the to-be-evaluated persons who were students as well. However, we compared the evaluations of these students with the judgments of a group of 16 healthy non-students taken from another ongoing study of our group, and found the evaluations of the students in comparison to those of the non-students to be (non-significantly) less negative ($p = .37$), but also equally positive and (non-significantly) more aggressive ($p = .40$). Evaluations of the students were thus not so positive and actually rather similar to those of non-students.

In conclusion, our study provides further evidence for the cognitive theory of BPD supporting the hypothesis of a specific negative evaluation bias among BPD patients. Here, subjects with BPD judged others as more negative and aggressive, and less positive and supportive. We also found that the evaluation bias was most pronounced for aggressive traits, which is consistent with other findings suggesting that BPD patients are specifically characterized by representations of others as being malevolent (Arntz, Appels, & Sieswerda, 2000; Arntz et al., 1999; Arntz et al., 2004; Arntz, Klokman, & Sieswerda, 2005; Arntz & Veen, 2001). However,

it should be mentioned that personality disorders cannot be explained from a single theoretical perspective. Instead, empirical evidence has found that a set of distal (e.g., temperament) and proximal (e.g., invalidation and cognitive schemas) factors converge to create the characteristics of BPD (Barnow et al., 2006; Beck et al., 2004; Zanarini, Frankenburg, & Frances, 2007). For example, Meyer, Pilkonis, and Beevers (2004) found that borderline personality disorder features related to anxious attachment, and anxious attachment was in turn linked with tendencies to appraise emotionally neutral faces more negatively. Thus, much more work will be needed to articulate empirically the nature of social–cognitive bias in BPD. Here, the importance of biological factors (e.g., temperament), cognitive and social conditions (e.g., schemas and attachment) and traumatic life events including invalidation and their interactive effects should be considered and tested in a more complex model of BPD (for review and a new theoretical biosocial model of personality disorders see Barnow, 2007).

Acknowledgments

References

Alden, L. E., Wiggins, J. S., & Pincus, A. L. (1990). Construction of circumplex scales for the inventory of interpersonal problems. *Journal of Personality Assessment, 55*, 521–536.

Ambady, N., Bernieri, F. J., & Richeson, J. A. (2000). Toward a histology of social behavior: judgmental accuracy from thin slices of the behavioral stream. In M. P. Zanna (Ed.), *Advances in experimental social psychology, Vol. 32* (pp. 201–271). San Diego, CA: Academic Press.

Ambady, N., & Rosenthal, R. (1992). Thin slices of expressive behavior as predictor of interpersonal consequences: a meta-analysis. *Psychological Bulletin, 111*, 256–274.

Ambady, N., Shih, M., Kim, A., & Pittinsky, T. L. (2001). Stereotype susceptibility in children: effects of identity activation on quantitative performance. *Psychological Science, 12*, 385–390.

American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (4th ed.). Washington, DC: American Psychiatric Association.

Arntz, A. (2004). Cognitive theory of personality disorders. In A. Beck, A. Freeman, D. Davis, & Associates. (Eds.), *Borderline personality disorder* (pp. 187–215). New York: The Guilford Press.

Arntz, A., Appels, C., & Sieswerda, S. (2000). Hypervigilance in borderline disorder: a test with the emotional stroop paradigm. *Journal of Personality Disorders, 14*, 366–373.

Arntz, A., Dietzel, R., & Dreessen, L. (1999). Assumptions in borderline personality disorder: specificity, stability and relationship with etiological factors. *Behaviour Research and Therapy, 37*, 545–557.

Arntz, A., Dreessen, L., Schouten, E., & Weertman, A. (2004). Beliefs in personality disorders: a test with the Personality Disorder Belief Questionnaire. *Behaviour Research and Therapy, 42*, 1215–1225.

Arntz, A., Klokman, J., & Sieswerda, S. (2005). An experimental test of the schema mode model of borderline personality disorder. *Journal of Behavior Therapy and Experimental Psychiatry, 36*, 226–239.

Arntz, A., & Veen, G. (2001). Evaluations of others by borderline patients. *Journal of Nervous and Mental Disease, 189*, 513–521.

Baker, L., Silk, K. R., Westen, D., Nigg, J. T., & Lohr, N. E. (1992). Malevolence, splitting, and parental ratings by borderlines. *Journal of Nervous and Mental Disease, 180*, 258–264.

Bargh, J. A. (1994). The four horsemen of automaticity: awareness, intention, efficiency, and control in social cognition. In R. S. Wyer, Jr., & T. K. Srull (Eds.), *Handbook of social cognition* (2nd ed.). (pp. 1–40) Hillsdale, NJ: Erlbaum.

Barnow, S. (2007). *Persönlichkeitsstörungen: Ursachen und Behandlung*. Bern: Huber.

Barnow, S., Herpertz, S. C., Spitzer, C., Stopsack, M., Preuss, U. W., Grabe, H. J., et al. (2007). Temperament and character in patients with borderline personality disorder taking gender and comorbidity into account. *Psychopathology, 40*, 369–378.

Barnow, S., Plock, K., Spitzer, C., Hamann, N., & Freyberger, H. J. (2005). Traumatic life events, temperament and character in patients with borderline personality disorder and complex posttraumatic stress disorder. *Verhaltenstherapie, 15*, 148–156.

Barnow, S., Spitzer, C., Grabe, H. J., Kessler, C., & Freyberger, H. J. (2006). Individual characteristics, familial experience, and psychopathology in children of mothers with borderline personality disorder. *Journal of the American Academy of Child & Adolescent Psychiatry, 45*, 965–972.

Beck, A. T. (1976). *Cognitive therapy and the emotional disorders*. New York: New American Library.

Beck, A. T., Freeman, A., & Associates. (1990). *Cognitive therapy of personality disorders*. New York: Guilford Press.

Beck, A. T., Freeman, A., & Davis, D. (2004). *Cognitive therapy of personality disorders* (2nd ed.). New York: Guilford Press.

Benjamin, L. S., & Wonderlich, S. A. (1994). Social perceptions and borderline personality disorder: the relation to mood disorders. *Journal of Abnormal Psychology, 103*, 610–624.

Bower, G. H. (1981). Mood and memory. *American Psychologist, 36*, 129–148.

Bucholz, K. K., Cadoret, R., Cloninger, C. R., Dinwiddie, S. H., Hesselbrock, V. M., Nurnberger, J. I., Jr., et al. (1994). A new, semi-structured psychiatric interview for use in genetic linkage studies: a report on the reliability of the SSAGA. *Journal of Studies on Alcohol, 55*, 149–158.

Butler, A. C., Brown, G. K., Beck, A. T., & Grisham, J. R. (2002). Assessment of dysfunctional beliefs in borderline personality disorder. *Behaviour Research and Therapy, 40*, 1231–1240.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale: Lawrence Erlbaum Associates.

Derogatis, L. R. (1983a). *Symptom checklist-90-R*. Baltimore: Clinical Psychometric Research.

Derogatis, L. R. (1983b). Misuse of the symptom checklist 90. *Archives of General Psychiatry, 40*, 1152–1153.

Dreessen, I., & Arntz, A. (1995). *The personality disorder beliefs questionnaire*. Maastricht.

Dinger, U., Strack, M., Leichsenring, F., & Schauenburg, H. (2007). Influences of patients' and therapists' interpersonal problems and therapeutic alliance on outcome in psychotherapy. *Psychotherapy Research, 17*, 149–161.

First, M. B., Spitzer, R. L., Gibbon, M., & Williams, J. B. W. (1997). *Structured Clinical Interview for DSM-IV axis I disorders (SCID-I)*. New York: New York State Psychiatric Institute.

First, M. B., Spitzer, R. L., Gibbon, M., Williams, J. B. W., Davies, M. P. H., Borus, J. S., et al. (1995). The Structured Clinical Interview for DSM-III-R personality disorders (SCID-II), part II: multi-site test-retest reliability study. *Journal of Personality Disorders, 9*, 92–104.

Franke, G. H. (2002). *Die SCL-90R. Die Symptomcheckliste von Derogatis*. Deutsche Version: Manual. Weinheim: Beltz.

Giesen-Bloo, J., & Arntz, A. (2005). World assumptions and the role of trauma in borderline personality disorders. *Journal of Behavior Therapy and Experimental Psychiatry, 36*, 197–208.

Gotlib, I. H., Kasch, K. L., Traill, S., Joormann, J., Arnow, B. A., & Johnson, S. L. (2004). Coherence and specificity of information-processing biases in depression and social phobia. *Journal of Abnormal Psychology, 113*, 386–398.

Gotlib, I. H., Krasnoperova, E., Yue, D. N., & Joormann, J. (2004). Attentional biases for negative interpersonal stimuli in clinical depression. *Journal of Abnormal Psychology, 113*, 121–135.

Gunderson, J. G. (1996). The borderline patient's intolerance of aloneness: insecure attachments and therapist availability. *The American Journal of Psychiatry, 153*, 752–758.

Gunderson, J. G. (2001). *Borderline personality disorder: A clinical guide*. Washington, DC: American Psychiatric Press.

Gunderson, J. G., Frank, A. F., Ronningstam, E., Wachter, S., Lynch, V., & Wolf, P. J. (1989). Early discontinuance of borderline patients from psychotherapy. *Journal of Nervous and Mental Disorders, 177*, 38–42.

Hager, W., & Hasselhorn, M. (1994). *Handbuch deutschsprachiger Wortnormen*. Göttingen: Hogrefe.

Horowitz, L. M. (2004). Split identity and instability: borderline personality disorder and related conditions. In L. M. Horowitz (Ed.), *Interpersonal foundations of psychopathology* (pp. 205–220). Washington, DC: American Psychological Association.

Horowitz, L. M., Alden, L. E., Wiggins, J. S., & Pincus, A. L. (2000). *Inventory of interper-sonal problems (IIP)*. Manual. Odessa: Psychological Corporation.

Horowitz, L. M., Rosenberg, S. E., Baer, B. A., Ureno, G., & Villasenor, V. S. (1988). Inventory of interpersonal problems: psychometric properties and clinical applications. *Journal of Consulting and Clinical Psychology, 56*, 885–892.

Horowitz, L. M., Strauß, B., & Kordy, H. (2000). *Inventar zur Erfassung interpersonaler Probleme (IIP-D)*. Handanweisung. Weinheim: Beltz.

Kraus, G., & Reynolds, D. J. (2001). The "A-B-C's" of the cluster B's: identifying, understanding, and treating cluster B personality disorders. *Clinical Psychology Review, 21*, 345–373.

LeDoux, J. E. (1996). *The emotional brain: The mysterious underpinnings of emotional life*. New York: Simon & Schuster.

Linehan, M. M., Tutek, D. A., Heard, H. L., & Armstrong, H. E. (1994). Interpersonal outcome of cognitive behavioral treatment for chronically suicidal borderline patients. *The American Journal of Psychiatry, 151*, 1771–1776.

Meyer, B., Pilkonis, P. A., & Beevers, C. G. (2004). What's in a (neutral) face? Personality disorders, attachment styles, and the appraisal of ambiguous social cues. *Journal of Personality Disorders, 18*, 320–336.

Nigg, J. T., Lohr, N. E., Westen, D., Gold, L. J., & Silk, K. R. (1992). Malevolent object representations in borderline personality disorder and major depression. *Journal of Abnormal Psychology, 101*, 61–67.

Pretzer, J. (1990). Borderline personality disorder. In A. T. Beck, A. Freeman, J. Pretzer, D. D. Davis, B. Fleming, & R. Ottaviani et al. (Eds.), *Cognitive therapy of personality disorders* (pp. 176–207). New York: Guilford Press.

Puschner, B., Bauer, S., Horowitz, L. M., & Kordy, H. (2005). The relationship between interpersonal problems and the helping alliance. *Journal of Clinical Psychology, 61*, 415–429.

Robins, L. N., Helzer, J. E., Croughan, J. L., & Ratcliff, K. S. (1981). National institute of mental health diagnostic interview schedule: its history, characteristics and validity. *Archives of General Psychiatry, 38*, 381–389.

Ruiz, M. A., Pincus, A. L., Borkovec, T. D., Echemendia, R. J., Castonguay, L. G., & Ragusea, S. A. (2004). Validity of the inventory of interpersonal problems for predicting treatment outcome: an investigation with the Pennsylvania practice research network. *Journal of Personality Assessment, 83*, 213–222.

Russel, J. J., Moskowitz, D. S., Zuroff, D. C., Sookman, D., & Paris, J. (2007). Stability and variability of affective experience and interpersonal behavior in borderline personality disorder. *Journal of Abnormal Psychology, 116*, 578–588.

Schauenburg, H., Kuda, M., Sammet, I., & Strack, M. (2000). The influence of interpersonal problems and symptom severity on the duration and outcome of short-term psychodynamic psychotherapy. *Psychotherapy Research, 10*, 133–146.

Segal, H. G., Westen, D., Lohr, N. E., & Silk, K. R. (1993). Clinical assessment of object relations and social cognition using stories told to the picture arrangement subtest of the WAIS-R. *Journal of Personality Assessment, 61*, 58–80.

Sieswerda, S., Arntz, A., & Verheul, R. Not dichotomous, but negative interpersonal evaluations characterize borderline patients, submitted for publication.

Spinhoven, P., Giesen-Bloo, J., van Dyck, R., Kooiman, K., & Arntz, A. (2007). The therapeutic alliance in schema-focused therapy and transference-focused psychotherapy for borderline personality disorder. *Journal Consulting Clinical Psychology, 75*, 104–115.

Stern, M. I., Herron, W. G., Primavera, L. H., & Kakuma, T. (1997). Interpersonal perceptions of depressed and borderline inpatients. *Journal of Clinical Psychology, 53*, 41–49.

Stuart, J., Westen, D., Lohr, N., Benjamin, J., Becker, S., Vorus, N., et al. (1990). Object relations in borderlines, depressives, and normals: an examination of human responses on the Rorschach. *Journal of Personality Assessment, 55*, 296–318.

Wagner, A. W., & Linehan, M. M. (1999). Facial expression recognition ability among woman with borderline personality disorder: implications for emotion regulation? *Journal of Personality Disorders, 13*, 329–344.

Westen, D., Lohr, N., Silk, K. R., Gold, L., & Kerber, K. (1990). Object relations and social cognition in borderlines, major depressives, and normal's: a thematic apperception test analysis. *A Journal of Consulting and Clinical Psychology, 2*, 355–364.

Westen, D., Ludolph, P., Silk, K., Kellam, A., Gold, L., & Lohr, N. (1990). Object relations in borderline adolescents and adults: developmental differences. *Adolescent Psychiatry, 17*, 360–384.

Williams, J. B., Gibbon, M., First, M. B., Spitzer, R. L., Davies, M., Borus, J., et al. (1992). The Structured Clinical Interview for DSM-III-R (SCID). II. Multisite test–retest reliability. *Archives of General Psychiatry, 49*, 630–636.

Wittchen, H. U., Lachner, G., Wunderlich, U., & Pfister, H. (1998). Test–retest reliability of the computerized DSM-IV version of the Munich-Composite International Diagnostic Interview (M-CIDI). *Social Psychiatry and Psychiatric Epidemiology, 33*, 568–578.

Wittchen, H. U., & Pfister, H. (1997). *Diagnostisches Expertensystem für psychische Störungen; DIA-X Interviews*: Harcourt Test Service.

Wittchen, H. U., Wunderlich, U., Gruschwitz, S., & Zaudig, M. (1997). *Strukturiertes Klinisches Interview für DSM-IV. Achse I: Psychische Störungen (SKID-I)*. Göttingen: Hogrefe.

Wittchen, H.-U., Zaudig, M., & Fydrich, T. (1997). *SKID-I. Strukturiertes Interview für DSM-IV. Achse I und II*. Göttingen: Hogrefe.

World Health Organisation. (1991). *International classification of disorders*. 10th revision, ICD-10. Bern: Huber.

Yeomans, F., Selzer, M., & Clarkin, J. (1993). Studying the treatment contract in intensive psychotherapy with borderline patients. *Psychiatry, 56*, 254–263.

Zanarini, M. C. (2000). Childhood experiences associated with the development of borderline personality disorder. *Psychiatric Clinics of North America, 23*, 89–101.

Zanarini, M. C., & Frankenburg, F. R. (1997). Pathways to the development of borderline personality disorder. *Journal of Personality Disorders, 11*, 93–104.

Zanarini, M. C., Frankenburg, F. R., & Frances, R. (2007). The essential nature of borderline psychopathology. *Journal of Personality Disorders, 21*, 518–535.

Zittel, C., Conklin, C., & Westen, D. (2005). Borderline personality disorder in clinical practice. *The American Journal of Psychiatry, 162*, 867–875.