Borderline Personality Pathology and the Stability of Interpersonal Problems

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Abstract

Features of borderline personality disorder (BPD) are associated with the presence and severity of interpersonal problems. At the same time, individuals with BPD are heterogeneous with regard to the types of interpersonal problems they display. BPD is also associated with temporal instability in various domains (e.g., affective lability), and this characteristic raises questions about whether BPD is associated with changes in the expression of interpersonal dysfunction over time, which may contribute to the observed heterogeneity. The focus of the present study was to evaluate the relationship between BPD features and the stability of interpersonal problems over the course of one year. Participants ($N = 150$) were assessed for borderline personality pathology at baseline and also completed the Inventory of Interpersonal Problems-Circumplex Scales at baseline and every three months over the course of a year. Baseline BPD was used to predict structured (i.e., latent growth trajectories) and unstructured (i.e., mean square of successive differences) change parameters in generalized interpersonal distress, agentic problems, and communal problems across assessment waves. Baseline BPD predicted individual means in generalized distress and unstructured change (i.e., instability) in agentic and communal problems across the year. Baseline BPD was not predictive, however, of structured change (i.e., linear change trajectories) for any aspect of interpersonal problems. These findings support the conclusion that interpersonal dysfunction in borderline pathology is stable in its severity but unstable in its manifestation.

Keywords

Interpersonal Problems; Borderline Personality Disorder; Longitudinal Stability; Interpersonal Instability

Borderline personality disorder (BPD) is defined, in part, by interpersonal impairments such as "frantic efforts to avoid real or imagined abandonment" and "unstable and intense interpersonal relationships" (American Psychiatric Association, 2013). Other diagnostic features, such as affect dysregulation and recurrent suicidal gestures, also tend to occur in interpersonal contexts (Herpetz, 1995; Sadikaj, Russell, Moskowitz, & Paris, 2010). Interpersonal theory uses the interpersonal circumplex (IPC; see Figure 1) to organize interpersonal functioning around the broad domains of agency and communion (Wiggins, 1991). As both a conceptual and quantitative model, the IPC is attractive for the study of personality disorders (PDs) because it differentiates between severity and specific style of dysfunction (Tracey, Rounds, & Gurtman, 1996). Research linking IPC-based interpersonal dispositions to the *Diagnostic and Statistical Manual of Mental Disorders* (DSM) PDs has corroborated that many of these disorders (e.g., avoidant, antisocial, histrionic, etc.) have characteristic interpersonal themes reflected in extreme and rigid blends of agentic and

communal behavior (e.g., Pincus & Wiggins, 1990). However, recent studies of BPD and the Inventory of Interpersonal Problems-Circumplex Scales (IIP-C; Horowitz, Alden, Wiggins, & Pincus, 2000) demonstrated that, although BPD symptoms were correlated with generalized interpersonal distress, individuals with BPD were interpersonally heterogeneous and no single style was characteristic of the disorder (Salzer et al., 2013; Wright et al., 2013).

Further differentiating BPD from other disorders is a "pervasive pattern of [temporal] instability" across functional domains (American Psychiatric Association, 2013, p. 663). This assertion is supported by evidence of affective instability on the momentary and daily levels (e.g., Ebner-Priemer et al., 2007; Russell et al., 2007; Trull et al., 2008). Additional evidence suggests that BPD patients, even relative to individuals with other PDs, display more change in conscientiousness, openness, and neuroticism over the course of years (Hopwood et al., 2009). This feature may contribute to the heterogeneity of interpersonal styles observed in those with borderline pathology. In other words, the cross-sectional results capture a snapshot of what is actually an unstable and dynamic phenomenon characterized by shifts in interpersonal style over time. However, temporal instability in interpersonal functioning remains an understudied phenomenon in BPD. The one study to examine momentary interpersonal fluctuations in BPD did find that variability in dominant, quarrelsome, and agreeable behavior differentiated individuals with BPD from those without the disorder (Russell et al., 2007).

Assessment of temporal instability can be made more precise by contrasting *structured* and *unstructured* change. Structured change is characterized by a specific pattern that unfolds over time, such as a linear decrease in symptoms, whereas unstructured change is unrelated to a specific trend, being defined in terms of variability that does not follow a clear pattern or de-trended fluctuation (Ebner-Priemer, Eid, Kleindienst, Stabenow, & Trull, 2009). The volatility or instability most commonly attributed to BPD (i.e., short-term vacillations in emotions and behavior) is more closely associated with the concept of unstructured change. In the current study, we sought to clarify the recent findings that BPD is related to the severity of interpersonal dysfunction but unrelated to any specific interpersonal style (Salzer et al., 2013; Wright et al., 2013) by evaluating whether BPD is characterized by instability in style over time, but relatively stable in severity of dysfunction. Thus, we grounded our study in the IPC model as operationalized in the IIP-C scales, which include dimensions for generalized interpersonal distress, agentic problems (i.e., difficulties with being domineering and overbearing versus nonassertive and obsequious), and communal problems (i.e., difficulties with being intrusive and overly affectionate versus indifferent and aloof). We evaluated variability on a time scale that is clinically informative by assessing participants at five points over a year (i.e., baseline and every three months) to mimic typical assessment periods of PD treatment studies (Clarkin et al., 2007; Leichsenring & Leibing, 2003; Linehan et al., 2006).

In the service of these aims, we first characterized structured change and instability (i.e., unstructured change) in interpersonal problems over the year, and then tested whether borderline pathology assessed at baseline was predictive of distinct aspects of change. Our sample ($N = 150$) covered the full range of BPD severity, and we combined analytic approaches used to investigate both structured and unstructured patterns of change. We calculated mean and individual trajectories of structured change in interpersonal problems using latent growth curve models (LGCMs). To quantify instability, we calculated the mean square of successive differences in individual scores (i*MSSD*; Ebner-Priemer et al., 2009; von Neumann, Kent, Bellinson, & Hart, 1941).

We hypothesized BPD at baseline would be associated with modest structured decline (i.e., linear trajectories) in generalized interpersonal distress (i.e., severity), given that decline in pathology and related domains is frequently observed in longitudinal studies of PDs (Morey & Hopwood, 2012). We made no prediction with regard to structured change agentic and communal problems (i.e., style), given the lack of association between BPD and interpersonal problem style. Moreover, we expected BPD to predict an individual's mean level of generalized interpersonal problems over the course of the study, but not individual means in agentic or communal problems. We then tested whether BPD was also predictive of instability in generalized severity and interpersonal style across assessments, with the expectation that BPD would predict instability in style.

Method

Participants and Recruitment

The sample consisted of 150 participants (*M* age = 44.9, *SD* = 10.4, *Range* = 22 to 61 years old; 65% female), recruited from general outpatient psychiatric clinics (*n*=75) and the community (*n* = 75). The recruitment procedures for the current study sample have been described in detail elsewhere (Scott et al., 2013). Briefly, the recruitment criteria were designed to sample the full range of BPD severity (i.e., 0–9 criteria). Participants identified primarily as white (57%) or African American (38%). Thirteen participants (9%) had not completed high school, 28 (19%) were high school graduates, 63 (42%) had some college or vocational training, 28 (19%) had completed a four-year college degree, and 18 (12%) had attended graduate or professional school. Sixty-five participants (43%) were employed, and 46 (31%) reported an annual household income of less than $10,000. The University of Pittsburgh Institutional Review Board approved all study procedures.

Assessment Procedures

At the initial assessment, participants completed a battery of self-report questionnaires and clinical interviews, and then completed selected self-report questionnaires at three-month intervals over the course of the year (i.e., five assessment points). Interviewers were trained clinicians who had a master's or doctoral degree and at least five years of experience. At the conclusion of each participant's interviews, a consensus diagnostic case conference was conducted by a research team comprised of at least three judges reviewing all information collected during the intake process. A complete description of the consensus rating process used in this research program has been provided in previous reports (Pilkonis et al., 1995). In the current sample, 63.3% of participants met the threshold for a diagnosis of one or more clinical syndromes, the majority of which were mood (73.7%), anxiety (49.5%), and substance-related (31.6%) disorders. A majority (52.7%) of the sample met the threshold for a diagnosis of one or more PDs, of which BPD (32.9%) and PD not otherwise specified (31.7%) were the most common.

Measures

BPD Symptoms—BPD symptoms were rated by the consensus team using all available information from intake, including responses from administration of the Structured Interview for DSM-IV Personality (SIDP-IV; Pfohl, Blum, & Zimmerman, 1997). The individual DSM diagnostic criteria for BPD were rated on a 0–2 scale (0 = *absent*, 1 = *present*, 2 = *strongly present*). BPD dimensional scores were calculated by summing these scores. A randomly selected subsample (*n* = 15) of SIDP-IV interviews were videotaped and rated by the clinical judges for calculation of interrater reliability. ICC's were calculated based on one-way random effects models and demonstrated adequate inter-diagnostician agreement for BPD dimensional scores (ICC = .81) and individual criteria (*Mdn* ICC = .69, Range = .49–.77).

Interpersonal Problems—Interpersonal problems were measured using the *Inventory of Interpersonal Problems – Circumplex Scales* (IIP-C; Horowitz et al., 2000). The IIP-C is a 64-item self-report measure of interpersonal problems. Items assess behaviors that an individual does in excess (i.e., "I…too much") or finds difficult to do ("It is hard for me to…"). The IIP-C contains eight, 8-item scales (i.e., octant scales; see Figure 1) whose internal consistencies across all assessment points ranged from .77 to .91 (*Mdn* = .84). Scores from the octant scales were combined using circumplex weighting procedures to derive scores for the primary dimensions of Agentic Problems and Communal Problems. The IIP-C's dimensional scores were created from standardized octant scores using the normative sample fromHorowitz et al. (2000) to facilitate interpretation. In addition, generalized distress (i.e., severity) was computed as the average octant scale score in our analyses (Tracey et al., 1996). The dimensional scores for agentic and communal problems provide measures of problems in each domain, *net* of general severity. Importantly, each domain is bipolar, such that agentic problems range from being forceful and controlling to being overly submissive and servile, whereas communal problems range from being cold and withdrawn to overly nurturing and smothering.

Analyses

We computed Pearson correlation coefficients between time-points to investigate rank-order stability in generalized distress and in agentic and communal problems. To quantify aggregate and individual differences in structured change over the course of the year, we calculated LGCMs that included intercept and linear slope growth factors. Factor means for the intercept and slope factors reflected the initial level of the curve at the baseline assessment and the rate of change over the one-year period, respectively. Individual differences in the components of the trajectory were measured by growth factor variances. To test whether borderline pathology assessed at baseline was predictive of individual differences in structured change in interpersonal problem domains, we computed a series of conditional LGCMs regressing the slopes on the dimensional BPD score and each individual BPD criterion.

LGCMs test for structured change (e.g., linear trajectories) but do not test *instability* more germane to BPD. For example, consider the case in which scores are decreasing in an orderly linear trend, documenting a stable decline rather than an unstable process.. By contrast, the *MSSD* removes gradual changes over time by detrending the data, such that more erratic changes result in higher scores, whereas changes that conform to a trend receive more modest scores. As such, a large *MSSD* is suggestive of temporal variability resulting from an unstable process. We calculated individual *MSSD*s, or i*MSSD*s, for generalized distress, agentic, and communal problems. In addition, we calculated individual means (i*M*s) across assessment waves for each of the study variables. These coefficients were all regressed on initial BPD scores.

Results

Attrition over the course of the study was low, with 139 participants (93%) completing all assessments. A total of 736 assessments (98%) were completed out of a possible 750, mitigating the impact of missing data. Means and SDs for the three interpersonal problem variables at each time point are presented in Table 1. Scores represent differences between this sample and the normative sample. Generalized distress was modestly elevated across the course of the study, with the highest average score at baseline. Both agentic and communal problem means remained close to the normative mean across the year. There was a high degree of rank-order stability in each of the study variables, although stability was modestly

lower between assessments that were more distant in time (see Table 2). No differences were noted between domains in rank-order stability.

Structured Change: Mean and Individual

For the generalized distress model, a pattern of linear growth was a poor fit to the data ($\chi^2_{(10)}$ = 31.65, p = < .001; RMSEA = .170; CFI = .00; SRMR = .14). Examining the residuals revealed that the model could not account adequately for the decrease in scores following the initial assessment. Therefore, we fit a piecewise LGCM with an additional slope factor that accounted for the initial drop in scores (i.e., 0–3 months), followed by a linear slope for the remaining assessments (i.e., 3–12 months) resulting in excellent fit to the data in Table 3. This model indicated that following an initial decline of ~.3 *SD*s, the sample did not change on average in level of distress over the course of a year, but that individual trajectories varied significantly around the mean.

A linear LGCM proved to be a poor fit for growth in agentic problems as indicated by a significant χ^2 ($\chi^2_{(10)}$ = 29.57, p = < .001) and high RMSEA (.114), although CFI (.97) and SRMR (.05) were good. More complex models (e.g., quadratic, latent basis) provided only small gains in fit and did not offer more compelling descriptions of change (e.g., quadratic slopes in the quadratic model had non-significant means and variances). Therefore, we report the linear model in Table 3, which is most parsimonious although poorly fitting by some standards (i.e., χ^2, RMSEA). There was no average change in agentic problems, but individuals differed significantly in their trajectories. For communal problems, the linear LGCM fit the data well, but was improved by fixing a non-significant slope variance to zero, suggesting neither average change in communal problems nor individuals differences in rates of change.

Baseline borderline pathology was not predictive of rates of change in generalized distress and agentic problems. We did not test whether borderline pathology predicted communal slope due to lack of significant variance.

Unstructured Change: Instability

Descriptive statistics for i*M*s and i*MSSD*s can be found in Table 4. Figure 2 illustrates the dramatic differences between those high and low in i*MSSD* scores. Results of regression analyses predicting i*M*s and i*MSSD*s from baseline BPD features can be found in Table 5.[1],[2] The total BPD score was a strong predictor of generalized distress i*M*, but was not predictive of style of problems. In contrast, global BPD and individual criteria did not predict variability in generalized distress, but did predict i*MSSD*s in agentic and communal problems, suggesting that individuals with borderline pathology do fluctuate in their interpersonal style over time. In terms of specific BPD criteria, unstable relationships, affective instability, intense anger, and transient paranoia/dissociation were all predictive of instability in both agentic and communal problems. Instability in agentic problems was related more specifically to identity disturbances and impulsivity, whereas instability in communal problems was related to chronic feelings of emptiness.

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[1]Some researchers have argued for including i*M*s and the squares of i*M*s as covariates when predicting coefficients of variability/instability in order to control for possible floor and ceiling effects, whereas others have debated the necessity of this approach (Ebner-Priemer et al., 2009). Here we calculated the results both ways, as standardized regressions without covariates and controlling for i*M*s and their squares. In every case, controlling for the i*M* and i*M*^{2} did not affect the magnitude of association between BPD features and i*MSSD* scores. Therefore we present the regressions without covariates in the interest of brevity, but will provide expanded tables upon request.

[2]To test whether our results were specific to BPD as opposed to general personality pathology, we reran all analyses controlling for the sum score of all non-BPD PD criteria. Results remained virtually identical.

Discussion

This study is the first to examine within-person instability in interpersonal problems measured repeatedly over the course of one year and to associate aspects of instability on this time-scale with borderline personality pathology. We performed analyses of both structured and unstructured change and found that BPD features predicted individual differences in the degree of instability (i.e., unstructured change) in agentic and communal problems, but not generalized distress, whereas BPD primarily predicted mean levels of generalized distress but not agentic or communal problem means. Taken together, our findings depict borderline pathology as stable in terms of the severity of interpersonal problems but unstable in terms of the specific manifestations of these problems.

On average, we found that generalized interpersonal distress, agentic problems, and communal problems did not display appreciable mean change and that rank-order stability was high. Contrary to our hypothesis, the level of BPD features at baseline did not predict declines in growth trajectories of interpersonal problems. One possibility is that the time span of one year is too brief to find evidence of substantial decline. However, in samples comprised of patients diagnosed with PDs, the decline over one year in core symptomatology can be significant (e.g., Grilo et al., 2004). It may be that, by stratifying the sample across the spectrum of BPD severity, we protected against regression to the mean frequently found in prospective studies exclusive to severe psychopathology. In this vein, we found a small but significant drop in generalized distress from baseline to the first 3-month assessment. Alternatively, it may be that interpersonal dysfunction, being a central impairment in PD, is particularly resistant to change. We note that past longitudinal studies of PD stability have found that functional impairments remain even as the DSM-defined symptoms decline (Morey & Hopwood, 2012).

As hypothesized, total BPD and almost all individual criteria predicted the mean level of general interpersonal problem severity over the course of the year. Conversely, the total BPD score was not predictive of the mean level of the problem style (i.e., agentic and communal dimensions), although individual criteria were predictive in understandable ways (e.g., intense anger predicted higher mean agentic problems, chronic feelings of emptiness predicted lower mean agentic problems). This result was expected following the recent cross-sectional results (Salzer et al., 2013; Wright et al., 2013) that demonstrated significant positive association with severity but no association with style. The opposite pattern emerged when predicting instability—BPD was not predictive of instability in generalized distress, but was predictive of instability in both stylistic dimensions of the IIP-C. Further corroborating our interpretation, we found that the individual BPD criteria showed discriminant validity: criteria that were most central to descriptions of instability were the strongest predictors of i*MSSD*s. Wright and colleagues (2013) questioned whether the high degree of interpersonal heterogeneity in BPD was reflective of diverse but stable interpersonal profiles, or whether cross-sectional studies were capturing snapshots of dynamically shifting interpersonal difficulties. Although the current study did not sample exclusively from those high in borderline pathology, the fact that BPD symptoms were predictive of *variability in stylistic elements* of problems suggests that interpersonal heterogeneity in BPD reflects what is, in part, a dynamic phenomenon.

The findings reported here provide empirical support for the clinical observation that interpersonal variability is a major feature of borderline pathology (Kernberg, 1975; Linehan, 1993). It is also interesting that BPD was as strong a predictor of agentic variability as communal variability. A stronger effect for communion would not have been surprising, given that vacillation in affiliativeness is a prominent feature of the BPD prototype as individuals with the disorder navigate issues of distance and closeness in relationships

(Gunderson, 2001). However, as others have noted, volatile anger may motivate shifts towards interpersonally domineering and hostile stances (Linehan, 1993). An alternative possibility is that fluctuating agency is reflective of self-pathology (Pincus, 2011), which is also borne out in the results here.

Relatedly, the primary limitation of this study is that the measures of interpersonal problems relied exclusively on self-report. Although this approach is consistent with the majority of personality pathology research (Bornstein 2003), a fuller understanding of instability would benefit from other-reported and clinician-reported interpersonal dysfunction. In particular, informants would help clarify the extent to which our results reflect changes in behavior observable to others versus shifts in self-perception. Regardless, our findings suggest that regular assessments of interpersonal problems should augment other forms of clinical assessment during treatment for borderline pathology.

Although the defining features of borderline pathology point to the importance of studying instability, our results raise questions about whether other forms of personality pathology are similarly predictive of patterns of change and variability across time. For instance, given that intense anger and impulsivity are each significant predictors of instability in the style of interpersonal problems, it is likely that disorders associated with antagonism, aggression, and impulsivity (e.g., paranoid, narcissistic, and antisocial PDs) may display similar patterns. To date, the research on variability in functioning in personality pathology is almost exclusively limited to BPD, but we believe that pursuing the study of dynamic processes in other forms of PD would be a fruitful endeavor.

In summary, this study examined borderline pathology in relation to the (in)stability of interpersonal problems over one year. By distinguishing between severity and style of interpersonal problems and contrasting structured and unstructured change processes, we were able to clarify that BPD features are associated with elevated and stable interpersonal dysfunction. Furthermore, we found that borderline pathology was linked with instability in the expression of interpersonal problems over time, extending prior cross-sectional results.

Acknowledgments

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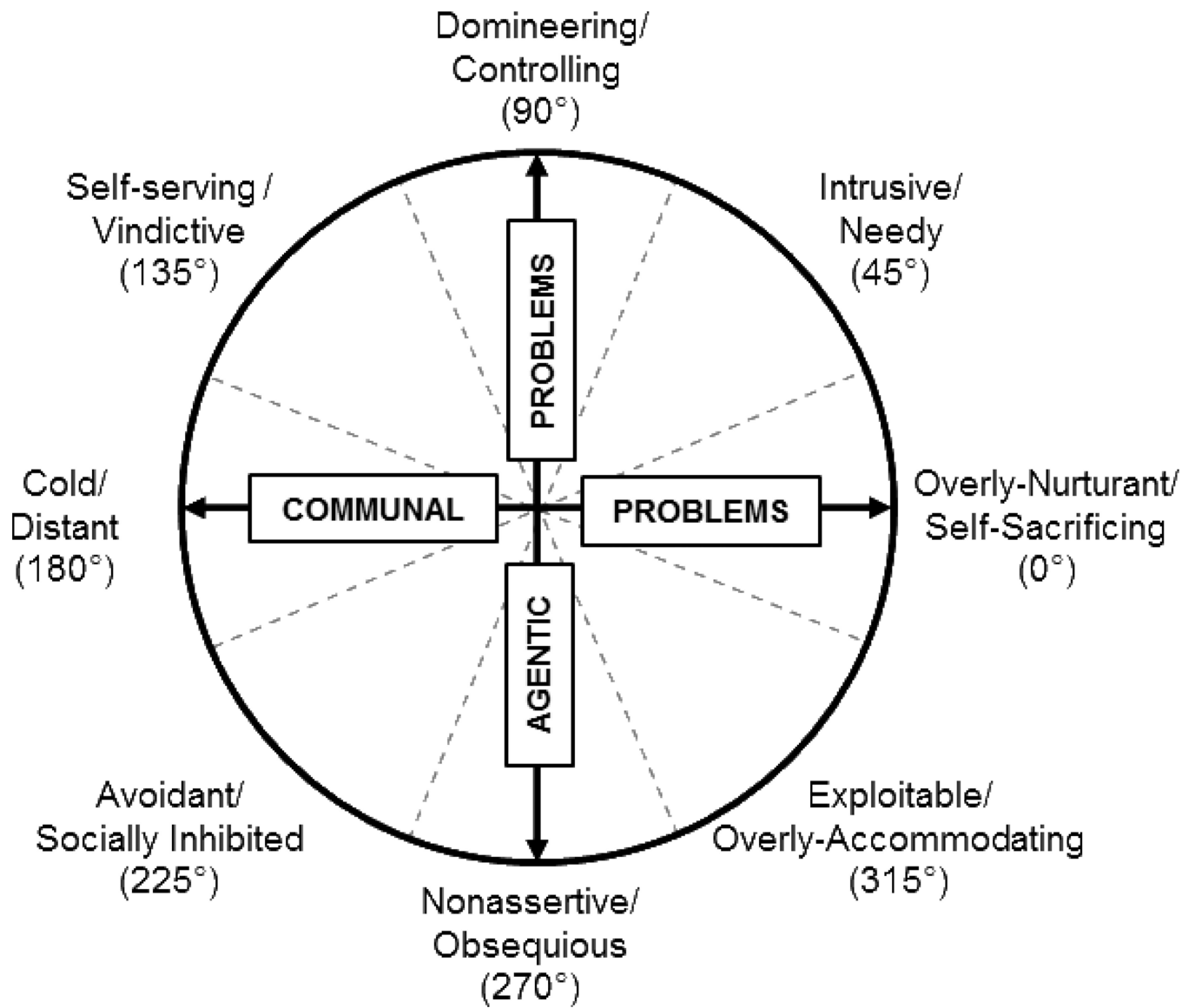
Figure 1.
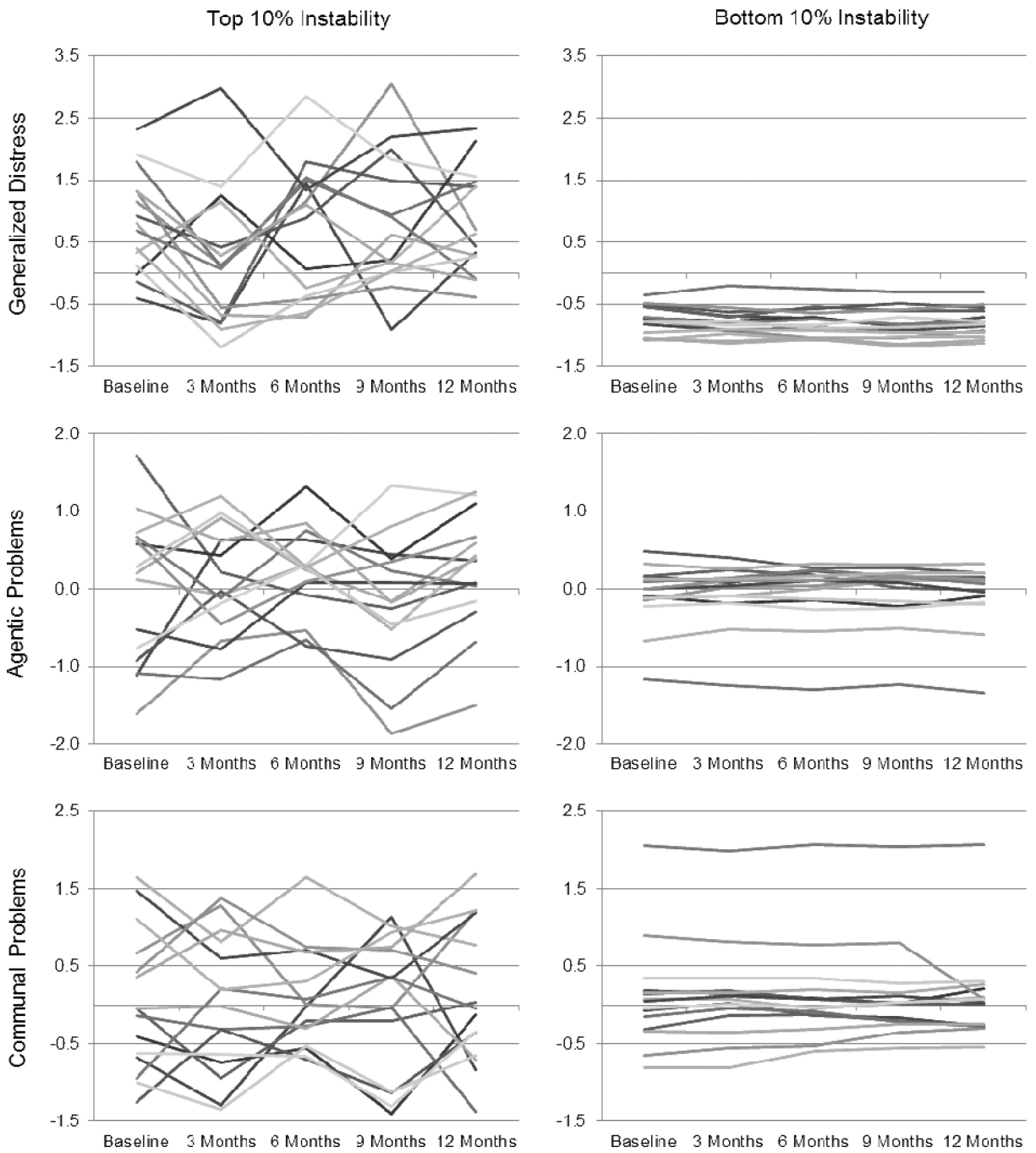The Inventory of Interpersonal Problems – Circumplex Scales

Figure 2.
Graphical depiction of the observed interpersonal problem trajectories for individuals in the upper and lower 10% of instability scores in generalized distress, agentic, and communal problems.

Table 1

Means of Interpersonal Problem Variables by Time-Point

	Baseline		3 Months		6 Months		9 Months		12 Months	
	M	*(SD)*	*M*	*(SD)*	*M*	*(SD)*	*M*	*(SD)*	*M*	*(SD)*
Generalized Distress	.55	(.94)	.28	(.96)	.32	(.96)	.31	(.96)	.40	(.93)
Agentic Problems	−.06	(.64)	−.14	(.56)	−.04	(.58)	−.11	(.61)	−.04	(.65)
Communal Problems	.03	(.62)	.04	(.54)	.01	(.50)	.03	(.51)	.04	(.56)

Table 2

Differential Stability in Interpersonal Problems as a Function of Time

	3 Months	6 Months	9 Months	12 Months
Generalized Distress	.86	.82	.82	.78
Agentic Problems	.82	.78	.74	.74
Communal Problems	.78	.77	.75	.75

Note. The coefficients for three, six, and nine months differential stabilities reflect the average of all possible associations for a given time-span (e.g., six month coefficient is average of correlations between baseline and six month, three month and nine month, and six month and twelve month).

Table 3

Average and Individual Variability in Growth of Interpersonal Problems

Scale	Intercept		Slope 1		Slope 2		Goodness-of-fit			
	Mean	Variance	Mean	Variance	Mean	Variance	χ^2	RMSEA	CFI	SRMR
Generalized Distress	.55***	.79***	−.29***	n/a	.03	.01***	15.63	.070	.99	.02
Agentic Problems	−.11*	.27***	n/a	n/a	.01	.01***	29.57**	.114*	.97	.05
Communal Problems	.03	.22***	n/a	n/a	.00	n/a	11.17	.000	1.00	.05

Note. Because Slope 1 for generalized interpersonal distress only pertains to the difference between baseline and 3 months, it was estimated without a variance in order to avoid problems with estimation.

*
$p < .05$;

**
$p < .01$;

***
$p < .001$

Table 4

Means and Standard Deviations for Coefficients of Year-Long Means and Individual Instability

Coefficient	Min	Max	M	SD
Generalized Distress Mean	−1.11	2.49	0.37	0.89
Agentic Problems Mean	−1.55	1.52	−0.08	0.55
Communal Problems Mean	−1.74	2.04	0.03	0.49
Generalized Distress Instability	0.00	3.06	0.27	0.44
Agentic Problem Instability	0.00	0.77	0.13	0.15
Communal Problem Instability	0.00	1.79	0.13	0.20

Note. $N = 150$.

Table 5

Predicting Year-Long Individual Interpersonal Problem Means and Instability from Borderline Personality Disorder Features

	Borderline	BPD1	BPD2	BPD3	BPD4	BPD5	BPD6	BPD7	BPD8	BPD9
Individual Means										
Generalized Distress Mean	.57***	.01	.28***	.27**	.40***	.37***	.53***	.47***	.39***	.33***
Agentic Problems Mean	.10	.20**	.19*	−.08	.20*	−.13	.06	−.17*	.26**	−.03
Communal Problems Mean	.04	−.06	.00	.07	.02	.17*	.10	.03	−.12	.08
Individual Instability										
Generalized Distress Instability	.11	.05	.04	.05	.12	−.01	.07	.10	.15	.00
Agentic Problem Instability	.28**	.05	.26**	.27**	.22**	−.01	.25**	.07	.25**	.19*
Communal Problem Instability	.30**	.11	.33***	.03	.09	.10	.35**	.17*	.21*	.29**

Note. Borderline = Dimensional count of borderline personality disorder criteria; BPD1 = frantic efforts to avoid abandonment; BPD2 = unstable and intense relationships; BPD3 = identity disturbance; BPD4 = impulsivity; BPD5 = suicidal/self-harm behavior; BPD6 = affective instability; BPD7 = chronic feelings of emptiness; BPD8 = intense anger; BPD9 = transient paranoia/dissociation.

*
$p < .05$;

**
$p < .01$;

***
$p < .001$