Integrating structure and dynamics in personality assessment: First steps toward the development and validation of a Personality Dynamics Diary

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Abstract

Both theories and cutting-edge research highlight the dynamic nature of personality and personality pathology, thereby posing significant challenges for an exclusively between-person, trait-based approach to personality assessment. In a series of three studies, we explored the viability of integrating within-person, dynamic aspects into clinical personality assessment by means of daily diary methods. In Study 1, 314 students filled out a 73-item questionnaire capturing daily behaviors and situation experiences across seven to ten consecutive days. We used multilevel exploratory factor analyses to construct a shortened version, the Personality Dynamics Diary (PDD). In Study 2, the PDD was applied in a sample of 77 psychotherapy inpatients across 40 days, on average. In Study 3, 35 psychotherapy outpatients as well as their therapists judged the clinical utility of a smartphone version of the PDD. Taken together, we were able to construct a relatively brief self-report measure that assesses major dimensions of within- and between-person differences of situations and behaviors in daily life with acceptable reliability. Application in clinical samples provided further evidence for the reliability, validity, and clinical utility of the PDD, but also highlighted possible obstacles in clinical practice as well as the need for further replication and refinement. We conclude that daily diary methods have the potential to integrate between- and within-person approaches to personality assessment. By applying measures like the PDD, clinicians may gain insight into the psychological mechanisms that give rise to, and maintain, a person's maladaptive dispositions, and ultimately find individualized leverage points for targeted therapeutic interventions.

Keywords: Ambulatory assessment; daily diary; multilevel structural equation modeling; personality dynamics; personality disorders

Public Significance Statement: We developed a brief self-report inventory that can be applied on a daily base for assessing a person's level and dynamic interplay of behaviors and situational experiences. Results suggest that this inventory may provide reliable and clinically useful insights, but that it should be refined in future research.

Integrating structure and dynamics in personality assessment: First steps toward the development and validation of a Personality Dynamics Diary

Clinical assessments tend to be single session, and aimed at understanding the patient's personality and pathology in relative terms, as they compare to healthy and unhealthy populations. Consequently, important information regarding how behaviors or symptoms shift within the patient across time and circumstance are not directly assessed, but have to be inferred from retrospective reports or clinical observation (Hengartner, Zimmermann, & Wright, in press; Hopwood, Zimmermann, Pincus, & Krueger, 2015). In recent years, researchers have increasingly used intensive longitudinal designs (ILD) for the assessment of dynamic processes underlying an individual patient's personality and psychopathology (Fisher, 2015; Fisher & Boswell, 2016; Roche, Pincus, Rebar, Conroy, & Ram, 2014; van Os, Delespaul, Wigman, Myin-Germeys, & Wichers, 2013). A major hurdle in advancing the assessment of dynamic processes is the lack of available inventories designed to measure these processes. Here we describe initial efforts to develop and validate a broad measure of personality dynamics intended for use in research and clinical practice.

Structure: An Emerging Consensus

Over the past century, personality science prioritized the study of between-person differences, with the major goal of identifying the major dimensions of personality. This nomothetic approach resulted in the well-known five-factor model of personality, which has emerged as the dominant structural model in basic personality, and represents a foundational achievement of the field (John, Naumann, & Soto, 2008). As a result of the consensus surrounding the Big Five domains of Extraversion, Agreeableness, Conscientiousness, Neuroticism, and Openness, much is known about the influence of individual differences in personality on a host of critical domains throughout psychology (Ozer & Benet-Martínez, 2006). Moreover, strong empirical evidence now demonstrates that the latent structure of personality pathology resembles basic personality in important ways, such as sharing a five-

factor model (e.g., Hengartner et al., in press; Krueger & Markon, 2014; Leising & Zimmermann, 2011). Although the offered solutions may vary, these proposals all emphasize the need for future personality disorder (PD) nosologies to adopt the quantitatively- and empirically-driven approach that has served basic personality science well (Widiger & Costa, 2012). The alternative model of PD in DSM-5 (American Psychiatric Association, 2013) represents a step in this direction by featuring an evidence-based, hierarchical taxonomy of maladaptive personality traits (Krueger & Markon, 2014).

The structural similarities do not stop at the PDs, and recent quantitative empirical research suggests that the meta-structure of psychopathology aligns remarkably well with the structure of basic personality (e.g., Markon, 2010; Wright & Simms, 2015). Although work incorporating additional diagnoses (e.g., autism, dissociation) and refining the higher- and lower-order structure of the psychopathology hierarchy are needed, the broad outlines of individual differences in adaptive and maladaptive functioning appear to be more similar than otherwise (Kotov et al., 2017). The identified broad domains (and their personality analogues) include Negative Affectivity (Neuroticism), Disinhibition (low Conscientiousness), Antagonism (low Agreeableness), Detachment (low Extraversion), and Psychoticism (Openness).¹ These domains offer a synthetic view of psychopathology as impairments or dysfunction in the major systems of human behavior (Harkness, Reynolds, & Lilienfeld, 2014), promising more rapid and robust research on an integrated set of constructs.

Dynamic Processes: The Vanguard of Personality Assessment

Despite the advances in terms of *between-person* structure, it does little to inform our understanding of *within-person* processes, especially when considering the relations among variables at the within-person level (Molenaar & Campbell, 2009). Personality theorists (e.g.,

¹ These domain labels differ somewhat from Kotov et al. (2017), who used Internalizing instead of Negative Affectivity, and Thought Disorder instead of Psychoticism. Considerable debate remains about the relationship between Psychoticism and Openness.

Allport, 1968; Mischel & Shoda, 1995) have long argued that our dispositions are contextualized, and recent theories highlight that it is the characteristic manner in which individuals interface with their environments that defines personality (e.g., DeYoung, 2015; Fleeson & Jayawickreme, 2015). In line with this view, contemporary models of psychopathology generally assume that many symptoms are dynamic, varying within individuals across time and circumstances (e.g., Nelson, McGorry, Wichers, Wigman, & Hartmann, 2017). Arguably, however, the focus on between-person differences in personality and psychopathology may have been artifact of technological limitations. Only recently has there been significant advancements in the designs and technologies available to repeatedly and intensively sample human behavior in daily life (Trull & Ebner-Priemer, 2013). This is reflected in the dramatic rise in research using ILD to study within-person psychological processes (Hamaker & Wichers, 2017).

Findings from ILD research demonstrate that individuals vary widely in their behavior across time, regardless of which domain is being sampled (Fleeson & Gallagher, 2009; Moskowitz & Zuroff, 2004; Wright & Simms, 2016). Furthermore, shifts in situation tend to reliably predict shifts in behavior (Sherman, Rauthmann, Brown, Serfass, & Jones, 2015). That is, at least some portion of fluctuations in behavior can be explained by individuals moving between situations. Even more important, findings indicate that the links between shifts in situations and shifts in behavior vary between individuals. In other words, some individuals' behavioral repertoires appear to be more sensitive to certain situational cues than others (Berenson, Downey, Rafaeli, Coifman, & Paquin, 2011; Sherman et al., 2015; Wright, Hopwood, & Simms, 2015). These *interindividual* differences in *intraindividual* processes may prove important in understanding maladaptive personality functioning, as severity of personality pathology has been shown to predict context sensitivity (Miskewicz et al., 2015; Sadikaj, Moskowitz, Russell, Zuroff, & Paris, 2013; Zimmermann et al., 2016).

Currently there is a great deal of expressed enthusiasm for integrating dynamics into

basic and applied assessment (Fisher, 2015; Roche et al., 2014; van Os et al., 2013). The enthusiasm stems, in large part, from the promise of more fully understanding the mechanisms underlying constructs of interest, and identifying actionable targets of intervention in the form of processes that can be disrupted and/or augmented. However, appropriately developed broadband inventories for the assessment of personality dynamics in research and practice are currently lacking. For example, in clinical settings, assessment instruments are often individually tailored and based on a collection of single-item measures (e.g., Haynes, Mumma, & Pinson, 2009), which may limit the reliability and comparability of the results. For research purposes, some multi-item measures of trait relevant behaviors exist, such as measures of personality states (e.g., Fleeson, 2001), dominant and affiliative behavior (e.g., Moskowitz, 1994), and positive and negative affect (e.g., Watson, Clark, & Tellegen, 1988). However, these measures do not provide coverage of explicitly maladaptive behaviors. In ILD studies of psychopathology, researchers often use adaptations of DSM criteria for specific disorders (e.g., Borderline PD; Hawkins et al., 2014) or measures of specific maladaptive trait facets (e.g., impulsivity; Tomko et al., 2014). Though this may be reasonable for the study of fine-grained processes associated with specific symptoms, it is not an ideal approach when considering a comprehensive assessment of behavioral problems, and important areas of functioning often go unassessed. In addition, progress has been made in developing a valid taxonomy of and assessment tools for situations (Parrigon, Woo, Tay, & Wang, 2017; Rauthmann et al., 2014), augmenting more longstanding assessment of contextual features such as interpersonal perception (e.g., Moskowitz & Zuroff, 2005) and stressors (e.g., Almeida, 2005). Given the goals of understanding personality and psychopathology as ensembles of contextualized dynamic processes, incorporating the assessment of major classes of situational features into a comprehensive inventory seems particularly relevant.

A Step Towards Integrating Structure and Dynamic Processes: The Current Research

Here we report on initial steps in developing and validating the Personality Dynamics Diary (PDD), an inventory that (a) provides coverage of major dimensions of adaptive and maladaptive trait expressions as well as of major classes of situational experiences, (b) uses multi-item scales to provide adequate reliability at both the between- and within-person levels of analysis, and (c) is sufficiently brief to facilitate use in clinical settings and ILD research. In measuring both adaptive and maladaptive trait expression, it incorporates the benefits of basic personality's dimensional approach into the assessment of personality pathology. By measuring situations, the proposed measure is able to integrate personality traits and situation characteristics, consistent with the situational contingency model. And by using an ILD and Multilevel Exploratory Factor Analysis (MEFA; Reise, Ventura, Nuechterlein, & Kim, 2005) for scale development, it disentangles and (potentially) harmonizes the within- and between-person factor structures that remain confounded in traditional cross-sectional research designs (Hamaker, Schuurman, & Zijlmans, 2017).

We selected as a measurement "resolution" the daily sampling frame (as compared to more frequent or less frequent assessment schedules) for three reasons. First, this is an intuitive time unit that can be relatively easily implemented in many clinical contexts. Second, one day is long enough to ask people to answer a longer questionnaire, which is necessary to capture all major dimensions and to achieve minimum within-person reliability. Third, many of the relevant behaviors are not so common that hour-to-hour assessments would be necessary and not so rare that week-to-week assessment would suffice.

In sum, the PDD was designed to incorporate state-of-the-art assessment of dimensional personality and personality pathology to assist in treatment planning. Study 1 introduces the measure and explores its psychometric properties, including reliability and associations with maladaptive personality traits. Study 2 replicates these findings in a clinical sample. Study 3 documents the clinical utility of the PDD in a field trial in which therapists were given

automatically-generated summaries of their patients' individual mean levels and within-person associations of behavior and situations.

Study 1

The aim of Study 1 is to develop the PDD based on a comprehensive item pool of situations and behaviors, and to provide initial estimates of its psychometric properties.

Procedure

We invited students at a German university to participate in an online daily diary study. Participants had to fill out a baseline questionnaire including the Personality Inventory for DSM-5 (PID-5; Krueger, Derringer, Markon, Watson, & Skodol, 2012), and then subsequently report on their daily experiences and behaviors across several consecutive days. They were instructed to endorse whether they had experienced specific situations and engaged specific behaviors during the last 24 hours (see below). The interval for completion of the daily questionnaires ranged from 6 p.m. until 2 a.m. of the subsequent day, and participants were instructed that they should answer the questionnaires preferably at the same time each day. Items were presented in the same order across participants and days.

Sample

In total, 314 students agreed to participate and provided at least one daily diary. Of these, 104 took part in the first round of data collection spanning a period of seven days, and 210 took part in the second round of data collection spanning a period of ten days. Mean age of participants was 23.3 years ($SD = 5.3$), and 71.3% were female. In total, we received 2,466 diaries. Fourteen diaries with five or more missing item values were excluded, resulting in a final data set of 2,452 diaries. On average, participants provided 7.8 diaries ($SD = 1.9$). This corresponds to a response rate of 87.2%, which suggests that the task was manageable for most participants.

Measures

Personality Inventory for DSM-5 (PID-5). The PID-5 is a 220-item questionnaire for assessing maladaptive personality traits according to the DSM-5 trait model (Krueger et al., 2012; German version: Zimmermann et al., 2014). Items are presented with a 4-point response format ranging from 0 (very false) to 3 (very true). The PID-5 comprises 25 trait facet and five trait domain scales. For both the English and the German language versions, facet scales show acceptable to good internal consistencies (with median Cronbach's alphas of $\sim .85$), as well as high loadings on the five higher-order domains of Negative Affectivity, Detachment, Antagonism, Disinhibition, and Psychoticism (Krueger & Markon, 2014; Zimmermann et al., 2014). For the present study, we only used trait domain scales (see online supplemental material, Table S1, for descriptive statistics).

Initial item pool for daily assessments. The initial pool of items for developing the PDD was comprised of 20 positive and negative situation experiences and 53 adaptive and maladaptive behaviors (see online supplemental material, Table S2 and S3). Negative situation experiences were derived from established measures of chronic stress (Petrowski, Paul, Albani, & Brähler, 2012), adverse experiences (Bernstein et al., 1994), and aversive interpersonal behaviors of others (Hopwood et al., 2011). In total, we wrote 14 items representing specific negative situation experiences, plus one nonspecific item (i.e., "Something else happened that was stressful"). Moreover, we added five items representing positive social or task-related experiences. Maladaptive behaviors were mainly compiled from a list of 30 symptoms representing daily expressions of personality pathology (Wright & Simms, 2016). In particular, 28 items were directly translated into German and the remaining two items (related to psychoticism) were omitted because they were considered as being too difficult for non-clinical samples. Ten items were newly written, especially to capture maladaptive behaviors in the affiliative domain (e.g., intrusiveness) that are somewhat underrepresented in the DSM-5 model (Wright et al., 2012). Finally, we added 15 items representing "adaptive" or "normal" behaviors linked to the general personality traits

neuroticism, extraversion, dominance, agreeableness, and conscientiousness (Leising & Zimmermann, 2011). Participants endorsed whether each item applied to them during the last 24 hours using 4-point scales ranging from 0 (very false) to 3 (very true).

Statistical analyses

We conducted MEFAs separately for the 20 situations and 53 behavior items. To deal with the ordinal and often non-normally distributed items, we used robust weighted least squares estimation based on the polychoric correlation matrix (Moshagen & Musch, 2014). As we were interested in capturing as many factors as possible, we inspected the scree plot for within- and between-person eigenvalues and extracted all factors on the left to the last visible drop. We also required the fit of the model to be close to what is usually regarded as good model fit in single-level models (i.e., CFI > .95, RMSEA < .06; SRMR < .08; Hu & Bentler, 1999). The within- and between loading matrix was rotated using oblique Geomin rotation. For each of the resulting factors, we tried to select two marker items with “clean” factor loadings (i.e., a loading > |.30| on the target factor and loadings < |.30| on the remaining factors) that showed consistent patterns across the within- and between loading matrix. Although an equivalent factor structure across levels is not required, we believed it advantageous in this context, because we would like the PDD to be suitable both for N=1 applications, which includes the calculation of within-person associations among scales, as well as the N>1 comparison of individuals or comparison of individuals to norms. Finally, we reran the MEFA with the selected marker items to explore whether the structure of the reduced item set was acceptable.

After finishing the scale construction, we computed the intraclass correlation coefficient (ICC) for each scale using intercept-only multilevel models. The ICC indicates the relative amount of variance that is due to differences between persons. We also estimated each scale’s within- and between-person reliability using multilevel coefficient alpha based on polychoric correlations (Geldhof, Preacher, & Zyphur, 2014). Next, we calculated individual

means (*iMs*) for each scale across all days, and correlated these means with PID-5 domain scales. Finally, we computed the within-person correlation matrix for each participant. The resulting distributions of correlation coefficients were summarized using the median and interquartile range (IQR), indicating the normative level and heterogeneity of within-person correlations across persons. All statistical analyses were conducted with Mplus 7 (Muthén & Muthén, 2012) or R 3.3 (R Core Team, 2016).

Results

Developing scales on situations. Based on the results of a MEFA with six within- and six between-factors, we were able to select ten items showing a consistent pattern of factor loadings across levels on five factors that were labeled agentic reward, communal reward, hostility, disappointments, and workload (see Appendix A for the wordings and online supplemental material for further details). When repeating the MEFA using only these ten items, a model with three within- and three between-person factors showed good fit to the data: $\chi^2(36) = 118.0, p < .001$, CFI = .97, RMSEA = .03, SRMR_{within} = .03, SRMR_{between} = .03. Panel A of Figure 1 visualizes the substantial loadings after oblique Geomin rotation (see online supplemental material, Table S6). With only one secondary loading in the within-person matrix and no secondary loading in the between-person matrix, the structure was deemed acceptable. The three factors were labeled as Positive Events (including agentic and communal reward), Social Stress (including hostility and disappointments), and Workload.

Developing scales on behaviors. Based on the results of a MEFA with nine within- and eight between-person factors, we were able to select 19 items showing a consistent pattern of factor loadings across levels on eight factors that were labeled internalizing symptoms (including negative affect, detachment, and emotional instability), daydreaming, impulsivity, externalizing symptoms (including impulsivity and aggression), perfectionism, outgoingness, agreeableness, and attention-seeking (see Appendix B for the wordings and online supplemental material for further details). When repeating the MEFA using only these

19 items, a model with five within- and five between-person factors showed good fit to the data: $\chi^2(172) = 523.0, p < .001$, CFI = .96, RMSEA = .03, SRMR_{within} = .03, SRMR_{between} = .05. Panel B of Figure 1 visualizes the substantial loadings after oblique Geomin rotation (see online supplemental material, Table S9). With only one secondary loading in the within-person matrix and three secondary loadings in the between-person matrix, results were deemed acceptable. Four factors were largely consistent across levels and were labeled as Sociability (including outgoingness and agreeableness), Externalizing Symptoms, Internalizing Symptoms, and Perfectionism. In addition, Attention Seeking did only emerge at the between-person level as a distinct factor and was part of Sociability at the within-person level, and Daydreaming did only emerge at the within-person level as a distinct factor and was part of Internalizing Symptoms at the between-person level.

Psychometric properties of the PDD scales. The left columns of Table 1 present descriptive statistics, ICCs and reliability estimates for each of the PDD scales. Sample means were relatively high for Positive Events, Sociability and Perfectionism, and relatively low for Social Stress and Externalizing Symptoms. The average ICC was .45, ranging from .36 for Positive Events and Sociability to .58 for Attention Seeking. Reliabilities were largely acceptable, with $M = .67$ ($Range = .40 - .81$) for within-person differences and $M = .87$ ($Range = .71 - .97$) for between-person differences. Note that low within-person reliability for Attention-Seeking was expectable, as this factor did not emerge at the within-person level.

Table 2 presents results from a between-person perspective, i.e., intercorrelations of individual means as well as their correlations with PID-5 domain scales. On average, correlations within situation as well as within behavior scales were rather small, $M_{|r|} = .22$ ($Max_{|r|} = .52$), suggesting that the scales measured relatively independent facets of daily life. Note that the high correlation between Daydreaming and Internalizing Symptoms was expectable, as they emerged as a joint factor at the between-person level. Moreover, correlations between situation and behavior scales were moderate in size, $M_{|r|} = .30$ ($Max_{|r|} =$

.74). The highest correlations became apparent between Positive Events and Sociability, as well as between Social Stress and Internalizing and Externalizing Symptoms. With regard to associations with maladaptive trait domains, Positive Events were most strongly associated with low Detachment, Social Stress was consistently associated with all maladaptive trait domains, and Workload was consistently associated with all trait domains except for Antagonism. Sociability was associated with low Detachment, Attention Seeking was most strongly associated with Antagonism, Externalizing Symptoms were most strongly associated with Disinhibition, Internalizing Symptoms were most strongly associated with Negative Affectivity and Detachment, Daydreaming was most strongly associated with Psychoticism, and Perfectionism was associated with low Disinhibition.

Table 3 summarizes the normative level and heterogeneity of within-person correlations between PDD scales. On average, median within-person correlations within situation as well as within behavior scales were small, $M_{|r|} = .14$ ($Max_{|r|} = .37$). The moderate association between Attention-Seeking and Sociability was expectable, as they emerged as a joint factor at the within-person level. Moreover, the median within-correlations between situation and behavior scales were only slightly larger, $M_{|r|} = .17$ ($Max_{|r|} = .48$). Similar to the between-person level, the highest associations became apparent between Positive Events and Sociability, as well as between Social Stress and Internalizing/Externalizing Symptoms. The IQRs indicated that heterogeneity of within-person correlations was substantial: the average difference between the 25th and 75th percentile of these distributions was .63 ($Range = .52-.76$).

Discussion

We were able to construct a relatively brief self-report measure that assesses major dimensions of within- and between-person differences of situations and behaviors in daily life with acceptable reliability. Daily situation characteristics were captured by three scales, including Positive Events, Social Stress, and Workload. Notably, these dimensions resemble

the higher-order structure of the Situational Eight DIAMONDS, which delineates the dimensions of negativity, positivity, and duty at the third level of its hierarchy (Rauthmann et al., 2014). This suggests that the structure underlying the PDD situation scales may not be due to specificities of the item pool or current sample, but represents a generalizable higher-order structure of psychological situation characteristics. Moreover, correlations of individual means with baseline maladaptive personality traits indicate that people construe or select situations according to their personality pathology: Detached persons tend to experience less positive events, and persons with more severe personality pathology (across all trait domains) tend to experience more social stress and workload. This is in line with research showing that PDs shape the experience and processing of situations (e.g., Herpertz & Bertsch, 2014; Miskewicz et al., 2015).

Daily behaviors were captured by six scales, including Sociability, Attention Seeking, Externalizing Symptoms, Internalizing Symptoms, Daydreaming, and Perfectionism. The scales of Internalizing and Externalizing Symptoms show a remarkable resemblance with the higher-order domains of internalizing and externalizing pathology, which are featured at the second level of many hierarchical models of personality pathology (Krueger & Markon, 2014). Correlations with baseline traits confirmed that these two scales cover typical daily expressions of the DSM-5 trait domains negative affectivity and detachment (i.e., Internalizing Symptoms) as well as disinhibition and, at least in part, antagonism (i.e., Externalizing Symptoms). Moreover, the fact that the two scales were highly correlated (both at the within- and between-person level) suggests that they may represent core features of a general factor of PD symptom expression. The scale of Sociability assesses adaptive social behavior including being outgoing, helpful, and cooperative. Its negative and unique association with trait detachment indicates that it may mainly capture daily expressions of extraversion. The remaining three scales were narrower in content: The scale of Perfectionism assesses thorough and perfectionistic behavior. Its negative and unique

association with DSM-5 disinhibition suggests that it may mainly capture daily expressions of conscientiousness. The Daydreaming scale may capture some facets of DSM-5 psychoticism (e.g., cognitive and perceptual dysregulation), although the high overlap with Internalizing Symptoms questions its incremental validity at the between-person level. Finally, the scale of Attention Seeking may capture some facets of DSM-5 antagonism (e.g., attention seeking). However, within-person reliability of this scale was low, probably limiting its validity at the within-person level.

Study 2

The aim of Study 2 is to replicate the psychometric properties of the PDD in an inpatient sample.

Procedure

Across a period of nine months, we invited all newly admitted patients at a large inpatient psychotherapy clinic in Germany to take part in a research project on personality assessment. After providing informed consent, the participants completed an extensive online questionnaire including the PID-5. In addition, they received a paper booklet with at least 40 PDD sheets that could be torn off individually. Participants were instructed to complete the PDD every evening until discharge, assessing the situations and behaviors they experienced during the past day. Completed PDD sheets were collected in prepared boxes to ensure anonymity. When a booklet was used up, a new booklet with 40 PDD sheets was handed out to the participant. The protocol for this study (and for Study 3) was approved by the ethics committee of the Faculty of Human Sciences at the University of Kassel.

Sample

In total, 77 inpatients agreed to participate and provided at least one daily diary. Mean age of participants was 38.5 years ($SD = 13.3$), and 68.8% were female. The average duration of the inpatient treatment was 76.8 days ($SD = 23.7$). In total, we received 3,087 diaries. Eight diaries with five or more missing item values were excluded, resulting in a final data set

of 3,079 diaries. On average, participants provided 40.0 diaries ($SD = 26.0$). This corresponds to an average response rate of 51.4%. Due to organizational difficulties, only 54 participants completed the online survey including the PID-5.

Measures

Personality Inventory for DSM-5 (PID-5). See Study 1 and online supplemental material, Table S1, for descriptive statistics.

Personality Dynamics Diary (PDD). The PDD is a self-report measure capturing daily situations and behaviors (see Appendices A and B). We used the 30 items that were selected in Study 1 and added two items to the daily behaviors: one item to supplement the facet of emotional instability (Item 20), and one item to enrich the item pool in terms of positive affect (Item 21). The latter item is not part of any PDD scale (similar to Item 11 of daily situations).

Statistical Analyses

We used the same procedures as in Study 1 to compute the psychometric properties of PDD scales. In addition, we combined the data from Study 1 and 2 and computed multilevel models with random intercepts for comparing scale means between students and inpatients. Moreover, the ICC was used for comparing the correlation matrices between Study 1 and 2, indicating the generalizability of the results.

Results

Similar to Study 1, sample means were relatively high for Positive Events, Sociability and Perfectionism, and relatively low for Social Stress and Externalizing Symptoms (see right columns of Table 1). However, Social Stress, Workload, Internalizing Symptoms, and Daydreaming were higher, and Sociability and Attention-Seeking were lower compared to the student sample in Study 1 ($ps < .05$). The average ICC was .47, ranging from .34 for Positive Events to .57 for Daydreaming. Reliabilities were slightly higher than in Study 1, with $M = .73$ ($Range = .59 - .82$) for within-person differences and $M = .88$ ($Range = .79 - .95$) for

between-person differences.

The size and pattern (i.e., rank-order) of correlations between individual means of PDD scales were very similar to Study 1 (see online supplemental material, Table S10). In particular, correlations within situation as well as within behavior scales were rather small, $M_{|r|} = .21$ ($Max_{|r|} = .50$), and correlations between situation and behavior scales tended to be moderate in size, $M_{|r|} = .30$ ($Max_{|r|} = .72$). The pattern of these 36 correlation coefficients was highly stable between Study 1 and 2, with ICC = .92. With regard to associations with maladaptive trait domains, we found that Social Stress and Workload were associated with Negative Affectivity, whereas Positive Events were unrelated to trait domains. Sociability was associated with low Detachment, Attention Seeking was most strongly associated with Antagonism, Externalizing Symptoms were most strongly associated with Disinhibition, Internalizing Symptoms and Daydreaming were most strongly associated with Negative Affectivity, and Perfectionism was unrelated to trait domains. The pattern of these 45 correlation coefficients was relatively stable between Study 1 and 2, with ICC = .81.

With regard to the normative level of within-person correlations between PDD scales, we observed similar results as in Study 1 (see online supplemental material, Table S11). That is, median within-person correlations within situation as well as within behavior scales were small, $M_{|r|} = .16$ ($Max_{|r|} = .44$), and median within-person correlations between situation and behavior scales were only slightly larger, $M_{|r|} = .19$ ($Max_{|r|} = .51$). The pattern of these 36 median within-person correlations was very stable between Study 1 and 2, with ICC = .92. A notable difference was that the negative associations between Internalizing Symptoms and Positive Events/Sociability were more pronounced in Study 2. In addition, the IQRs indicated that heterogeneity of within-person correlations was smaller: the average difference between the 25th and 75th percentile of these distributions was .35 ($Range = .26-.49$).

Discussion

We were able to replicate the psychometric properties of the PDD in an independent

sample of participants who were receiving inpatient psychotherapy. More specifically, within- and between-person reliabilities of PDD scales were acceptable, and the correlational patterns among PDD scales and with maladaptive trait domains were highly similar compared to Study 1. This is important for three reasons: First, in Study 1 the scales were developed and evaluated in the same sample, which may have inflated reliability estimates. Results of Study 2 suggest that this was not the case. Second, as the PDD is intended to be used as a clinical tool, ensuring that psychometric properties generalize to clinical samples is necessary. Third, results suggest that the PDD can also be applied in a more traditional paper-and-pencil version, although this is probably not the preferred mode of application in the future.

In addition, results point to characteristic differences between students and inpatients with regard to daily situations and behaviors. Despite the normative pattern of high Positive Events, Sociability, and Perfectionism, and low Externalizing Symptoms that was typical for both samples, we found that Social Stress, Workload, Internalizing Symptoms, and Daydreaming were higher, and Sociability and Attention-Seeking were lower in patients compared to students. Obviously, these differences may be confounded by sociodemographic (e.g., age) or contextual factors (e.g., inpatient treatment), but they could also indicate a pattern of impaired daily functioning that is common to many mental disorders. Finally, we note that the reduced heterogeneity of within-person correlations in the patient sample may be a statistical artefact of the sampling rate: The number of diaries per person was roughly five times greater in the patient sample, thereby considerably reducing sampling error in within-person estimates.

Study 3

The aim of Study 3 is to explore the feasibility and clinical utility of the PDD in an outpatient setting, and to demonstrate its application using a case example.

Procedure

We identified 1065 therapists, located in the 15 biggest German cities, from public

online directories and invited them to participate in a study on personality assessment via email. Therapists who expressed interest in participating received further information about the study and were asked to recruit voluntary patients with ongoing psychotherapy. The task of the recruited patients was to fill out the PDD every evening using a smartphone app. The duration of the assessment period could be individually negotiated, but the general recommendation was to use the PDD for at least 14 days. As soon as the patient had finished the assessment period, he or she was asked to evaluate his or her experience with the PDD. The results of the PDD were sent to the therapist, and the therapist was asked to evaluate the utility of the patient's individual results. The results consisted of a three-page document that visualizes and elucidates patient's individual means and within-person correlations of PDD scales. In addition, after finishing the study, the therapist was asked to take part in a short final survey. As response rates of therapists were generally low, we asked therapists who declined to participate in the study to communicate their reasons using a short online survey regarding their non-participation. Therapists who dropped out during the study were also asked to take part in this survey. Thus, Study 3 includes three sets of participants, the participating therapists (PT), participating patients (PP), and the non-participating therapists (NPT). Each group completed separate evaluation questionnaires.

Samples

Participating therapists (PT). Of the 1065 therapists we contacted, 53 requested to be sent further information about participating (5.0%). Out of these 53 therapists, 15 (28.3%) agreed to participate and shared the instructions with their clients. Eleven of the PT (73.3%) completed 25 individual evaluations (i.e., for each patient) of the utility of the resulting data. Eight of the PT (53.3%) filled out their final questionnaire after participating in the study. These eight PT had a mean age of 37.5 years ($SD = 17.0$) and ten years of practice ($SD = 5.9$). All of them were female. Six practiced behavioral therapy and two practiced "other" forms of psychotherapy.

Non-participating therapists (NPT). Of the remaining therapists, 129 (12.1%) completed a short survey regarding their non-participation. The NPT were 73.6% female with a mean age of 46.1 years ($SD = 10.3$) and an average of 13.7 years in practice ($SD = 10.5$). From this sample $n = 75$ (58.1%) practiced behavioral therapy, $n = 37$ (28.7%) practiced psychodynamic therapy, $n = 12$ (9.3%) practiced analytical therapy, and $n = 41$ (31.8%) therapists practiced “other” forms of therapy (it was possible to endorse more than one response option).

Participating patients (PP). Of the 15 PT there were 35 participating patients recruited. They filled out the PDD for 20.1 days ($SD = 9.1$), ranging from four to 40 daily assessments per person. Twenty-nine (82.8%) of the PP completed the evaluation questionnaire after finishing the PDD assessment period. Their average age was 38.3 years ($SD = 11.1$), and 26 (89.7%) were female. Of the 25 PP who were evaluated by their therapists, 14 patients (56%) were diagnosed with affective disorders (F30-F39; ICD-10), seven (28%) were diagnosed with anxiety, dissociative, stress-related, somatoform and other nonpsychotic mental disorders (F40-F48; ICD-10), three (12%) were diagnosed with disorders of adult personality and behavior (F60-F69; ICD-10) and for one patient no information regarding the diagnosis was given. On average, PP had completed 23.8 sessions ($SD = 17.8$) with their therapist at the time of the assessment.

Measures

Personality Dynamics Diary (PDD). The online version of the PDD was designed as a mobile website with an app framework displaying the website and reminding the patient as soon as it was time to submit the daily PDD. All items from the PDD were displayed as visual analogue scales (VAS) ranging from 0 (very false) to 100 (very true), which had a slider interface that could be dragged by the patients (see online supplemental material, Table S12, S13, and S14, for results).

Evaluation questionnaire for patients. After having completed the PDD assessment period, PP were asked to complete a final questionnaire containing 25 items: three demographic items, nine items assessing the digital literacy of the patient, three items regarding technical issues, and 10 items regarding the evaluation of the PDD. The latter items covered different aspects of clinical utility, including ease of usage and comprehensiveness (cf. Spitzer, First, Shedler, Westen, & Skodol, 2008), and were mostly rated on VAS ranging from 0 (very false) to 100 (very true). Here we analyze only these latter items.

Evaluation questionnaire for therapists. After each individualized assessment result was made available to the PT, they were asked to complete a questionnaire containing 14 items. Three of the items covered information about the patient and the status of the therapy. The remaining 11 items assessed the clinical utility of the PDD results, including ease of interpretation and usefulness for treatment planning (cf. Spitzer et al., 2008) as well as information gain and anticipated acceptance by patients. Clinical utility items were rated on VAS ranging from 0 (very false or very bad) to 100 (very true or very good). In addition, PT were asked to answer a final questionnaire after finishing the study, but results will not be considered here because only eight PT completed this survey.

Evaluation questionnaire for non-participating therapists (NPT). The questionnaire for NPT contained 30 items. Four of the items covered demographic and professional information, 10 assessed the respondents' digital literacy, and 16 covered possible reasons for non-participation (including one item with free response format for reporting "other" reasons). Here we analyze only the latter items, which were rated on VAS ranging from 0 (very false) to 100 (very true).

Results

Clinical utility from patients' perspective. Patients reported having no difficulty getting started with the PDD ($M = 3.2$, $SD = 8.6$), probably because the quality of instructions was rated as very high ($M = 85.1$, $SD = 22.5$). The PDD was perceived as moderately

successful at providing a comprehensive assessment of all relevant aspects of daily life ($M = 51.1$, $SD = 19.7$). Missing aspects that were mentioned by PP included compulsive symptoms, self-doubts, rumination, sexual behavior, physical activity, and relaxation. On average, PP needed five minutes daily to complete the PDD ($M = 4.6$, $SD = 2.5$). They found the PDD very easy to use in its digital form ($M = 87.6$, $SD = 21.0$) and not unnecessarily complex with regard to its technical implementation ($M = 3.8$, $SD = 8.3$). In line with being not skeptical about digital diagnostic instruments in general ($M = 19.7$, $SD = 25.1$), PP would not have preferred filling out the PDD on paper ($M = 8.6$, $SD = 22.1$). Importantly, PP reported that submitting daily questionnaires was not overly difficult ($M = 13.6$, $SD = 27.4$).

Clinical utility from therapists' perspective. On average, therapists expressed reservations with regard to the clinical utility of the PDD, although the large standard deviations indicated that they differed considerably in their evaluations. More specifically, the PT reported having gained relatively little information from the results on individual means ($M = 33.4$, $SD = 27.2$) and within-person correlations ($M = 21.4$, $SD = 27.8$). Results led to rather few new ideas for exploration, both for individual means ($M = 36.5$, $SD = 33.0$) and within-person correlations ($M = 25.4$, $SD = 33.3$). The conformity with their own explorations was rather high, both for individual means ($M = 65.9$, $SD = 29.7$) and for within-person correlations ($M = 67.4$, $SD = 35.1$). When asked about the ease of interpreting the results, the PT reported little difficulty for the individual means ($M = 30.6$, $SD = 36.1$) and the within-person correlations ($M = 28.6$, $SD = 35.2$). Evaluating the complete results for their patients, the PT reported having made little use of the new information for planning future sessions ($M = 29.8$, $SD = 28.7$). The relation between effort and new insights was rated as fair to middling ($M = 46.2$, $SD = 25.7$). Finally, the patient's acceptance of the method was anticipated to be rather good ($M = 76.2$, $SD = 25.3$).

To illustrate the potential clinical utility of the PDD from therapists' perspective, we selected a case example whose PDD results received relatively high clinical utility ratings (see

online supplemental material for more details). This case was a 37-year old male patient, who was diagnosed with a dependent personality disorder (F60.7; ICD-10). In total, he provided 31 daily assessments with the PDD. His female therapist was 43-years old and had five years of practice. At the point of the evaluation she had completed 16 sessions with the patient. Figure 2 visualizes the results of the PDD. Panel A and B show normative comparisons of patient's individual means to the sample from Study 1 (using z -values and 95% confidence intervals). The patient from this case study experienced elevated levels of Social Stress (i.e., hostility and disappointments) and reduced levels of Workload and Positive Events (i.e., agentic and communal reward). Regarding his daily behaviors, he experienced reduced levels of Sociability (i.e., outgoingness), Attention-Seeking, Perfectionism, and Daydreaming, and elevated levels of Internalizing Symptoms (i.e., emotional instability). Panel C and D of Figure 2 show statistically significant ($p < .01$) contemporaneous and lagged within-person correlations, respectively. Sociability was associated with experiencing less Internalizing Symptoms and more Positive Events at the same day. Moreover, Social Stress predicted experiencing more Workload the next day, and Internalizing Symptoms showed an autocorrelation indicating a carry-over effect.

Reasons for non-participation of therapists. Table 4 presents the reasons for non-participation given by NPT. Again, standard deviations were generally large, indicating that therapists differed considerably in their rationale for non-participation. However, one theme was especially prominent: Many therapists considered filling out a daily questionnaire as a burden that they did not want to expect from their patients.

Discussion

Our results provide initial evidence for the clinical utility of the PDD from the perspective of patients in outpatient settings: Patients reported little difficulty in maintaining compliance with submitting the questionnaires. They spend only about five minutes a day with the PDD and reported that the daily logs required little effort and were easy to

understand and to complete. However, the involved therapists were more critical with regard to the clinical utility of the PDD. Interestingly, the perceived information gained from the PDD was not very high and the PTs found their own explorations more often confirmed than not. Whether the PDD results were stating the obvious or there is some kind of hindsight bias involved is impossible to evaluate with the design of the current study. Nevertheless, the relatively large standard deviations suggest that the evaluation may differ considerably between therapists or cases. The case example illustrates that there are scenarios in which the PDD, and especially its focus on within-person correlations, can provide interesting insights that are regarded as clinically useful. Moreover, when interpreting these findings we also have to keep in mind that we do not know whether therapists' skepticism is specific to the PDD or psychological assessment methods in general.

One of the important lessons from this clinical utility study is how unexpectedly difficult it was to find at least a few participants on the practitioners' side. This may be partially explained by the burden of therapists having to submit one questionnaire per patient as well as a final questionnaire. When this added work was combined with therapists' already tight schedules and no monetary incentive for participation, it is perhaps not surprising that we had trouble getting a reasonably sized sample. However, the most common reason given for not participating was the therapists' hesitancy to burden their patients with daily questionnaires. Given that all dynamic assessment approaches require some kind of ILD, these results suggest that it may be a challenge to elicit practitioner buy-in for these kinds of instruments, especially among those who report having no need for new personality questionnaires.

The small samples of PT and PP considerably limit our ability to draw generalizable conclusions. For example, there may have been some selection bias for PP who were comfortable with digital devices, which might influence our findings. Examining the reasons among therapists given for not participating in the study suggests that new ambulatory

assessments developed for clinical settings will not see widespread utilization barring a shift in the culture of clinicians. It is therefore important that researchers prioritize demonstrating the usefulness and possible benefits of instruments based on ILD. Such efforts may build on recent studies showing the usability (van der Krieke et al., 2017), prognostic value (Lutz et al., in press) and therapeutic effect (Kramer et al., 2014) of automated diary assessments and/or personalized feedback.

General Discussion

In a series of three studies, we took initial steps toward the development and validation of a self-report measure that captures personality dynamics as they unfold in daily life. Our research endeavor was motivated by the fact that the vast majority of validated assessment instruments in the domain of personality and personality pathology are derived from nomothetic models focusing on differences between persons, whereas the structure of within-person differences remains relatively unexplored (Hengartner et al., in press). This is unfortunate as assessments of within-person dynamics have the capability to deliver models of an individual's personality pathology that inform treatment, identifying factors that exacerbate, ameliorate, and perpetuate maladaptive processes (Hopwood et al., 2015; Roche et al., 2014). Further, the broader psychopathology treatment literature has already begun to integrate such assessments, and has provided preliminary evidence of this method's utility (Fisher & Boswell, 2016; Lutz et al., in press). Thus, we aimed at extending recent efforts on scale development for the ambulatory assessment of personality pathology (e.g., Roche, in press; Wright & Simms, 2016) by developing an initial version of a PDD. This daily diary self-report measure should (a) provide coverage of major dimensions of adaptive and maladaptive trait expressions as well as of major classes of situational experiences, (b) contain multi-item scales to provide adequate reliability at both the between- and within-person levels of analysis, and (c) be sufficiently brief to facilitate use in clinical settings and ILD research.

Starting with an item pool of 20 situations and 53 behaviors, we were able to construct a PDD comprised of 10 items for situations and 20 items for behaviors that can be aggregated to nine scales: Positive Events, Social Stress, and Workload assess within- and between-person differences in daily situational experiences, and Sociability, Attention Seeking, Externalizing Symptoms, Internalizing Symptoms, Daydreaming, and Perfectionism assess within- and between-person differences in daily behaviors. The PDD scales cover major domains featured in current dimensional models of psychological situations (Rauthmann et al., 2014) and personality pathology (Krueger & Markon, 2014), although their exact structure differ to some extent. This is understandable, as current models were developed using cross-sectional data, and thus an evidence-based model that disentangles and harmonizes within- and between-person structures is still lacking (Hopwood et al., 2015). We tried to address this issue by selecting items that show consistent loadings across the within- and between-person matrix. As a result, the majority of our scales can be regarded as equivalent across levels, suggesting that they may represent useful building blocks in developing an overarching model that integrates within- and between-person structures (Wright, Beltz, Gates, Molenaar, & Simms, 2015). Exceptions were the scales of Daydreaming and Attention Seeking, which predominantly captured distinct within-person (Daydreaming) and between-person (Attention Seeking) differences.

Our results regarding the psychometric properties of the PDD are promising: Within- and between-person reliabilities were acceptable, correlations of individual means with baseline maladaptive trait domains were largely in line with theoretical expectations, the reliabilities and patterns of correlations could be replicated in a psychotherapy inpatient sample, and students and patients differed in characteristic ways in their mean-level profile of daily situations and behaviors. Moreover, we found initial evidence for the feasibility and clinical utility of a smartphone version of the PDD from the perspective of psychotherapy outpatients. Our results are also informative beyond the issue of psychometric properties and

may guide future interpretation of individual PDD results. For example, the correlation matrices of the scales showed that, at both levels of analyses, Positive Events and Sociability, as well as Social Stress and Internalizing/Externalizing Symptoms were highly associated. To some extent, this may be due to normative psychological and interpersonal mechanisms linking situational perceptions and behavioral responses (e.g., interpersonal complementarity; Roche et al., 2014). However, the heterogeneity of within-person correlations was substantial, as indicated by relatively large IQRs (especially in the student sample). That is, even if there is a normative tendency to exhibit internalizing symptoms when faced with social stress, the strength of this situational contingency differs between persons and may inform individual case formulation and treatment planning (Beltz, Wright, Sprague, & Molenaar, 2016; Hopwood et al., 2015; Miskewicz et al., 2015; van Os et al., 2013).

Although we argue that our initial steps in developing and validating a PDD were successful, we do not claim that this is the final product. In contrast, our work may be regarded as a first attempt or blueprint for a collective endeavor that requires much more resources than we had available. That is, we recommend continuing the development of a PDD using a more comprehensive item pool, a larger and more heterogeneous sample of participants, and a more extensive sampling period. For example, when starting with our own data collection, major taxonomies of psychological situations were not published yet (Parrigon et al., 2017; Rauthmann et al., 2014), and thus our item pool of situations was not exhaustive in this regard. In addition, our item pool of behaviors also lacked specific content domains, e.g., behaviors related to openness, emotional stability, or positive affect. Thus, the structure of our PDD needs further replication and refinement, ideally using research designs that allow for recruiting large samples from the general population (e.g., crowdsourcing designs; van der Krieke et al., 2017). Moreover, the process of validating the PDD is preliminary. For example, future studies should investigate the replicability of the multilevel factor structure in larger clinical samples, and explore the convergent and discriminant

validity of within-person scales with regard to established structural models of personality states and situational experiences (e.g., Fleeson, 2001; Hopwood et al., 2015).

The salient point we wish to emphasize is that personality assessment can be enriched by developing person-specific, contextualized, dynamic assessment approaches that are based on a common structural model of within- and between-person differences. Our paper shows that this may be possible, although many questions remain open. For example, from a psychometric perspective, it will be important to clarify the extent to which within-person factor structures differ between persons (Adolf, Schuurman, Borkenau, Borsboom, & Dolan, 2014; Molenaar & Campbell, 2009), and whether such differences can result in biased estimates of within-person correlations. It also will be important to clarify the number of data points that are necessary to obtain reliable estimates of within-person correlations (Mejía, Hooker, Ram, Pham, & Metoyer, 2014). Moreover, the repertoire of data-analytic strategies to deal with multilevel and multivariate time series is rapidly increasing (Epskamp et al., in press; Wright et al., in press), suggesting that raw within-person correlations may not be the optimal choice to look at. From the perspective of clinical research, it will be interesting to explore subgroups of persons with similar within-person structures (Beltz et al., 2016; Wright et al., in press), and to test whether specific within-person dynamics (e.g., autocorrelations) are important risk factors for psychopathology (van de Leemput et al., 2014). Finally, from the perspective of psychological assessment, more systematic research is needed addressing the barriers and obstacles of implementing ambulatory assessments in everyday practice. Even when researchers agree with each other in their enthusiasm about the possibilities of such assessments and patients find them useful, these methods may not see widespread utilization as long as their usefulness is not convincingly demonstrated to practitioners.

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Table 1

Descriptive statistics and reliability of PDD scales in Study 1 and Study 2

<i>Scale</i>	Study 1					Study 2				
	<i>M</i>	<i>SD</i>	<i>ICC</i>	<i>Rel_{within}</i>	<i>Rel_{between}</i>	<i>M</i>	<i>SD</i>	<i>ICC</i>	<i>Rel_{within}</i>	<i>Rel_{between}</i>
Positive Events	1.52	0.66	.36	.62	.82	1.57	0.71	.34	.73	.85
Social Stress	0.29	0.47	.44	.79	.96	0.41	0.56	.49	.75	.93
Workload	0.72	0.72	.43	.62	.89	0.93	0.88	.42	.80	.95
Sociability	1.65	0.71	.36	.63	.77	1.50	0.71	.48	.68	.79
Attention Seeking	0.77	0.79	.58	.40	.87	0.46	0.62	.51	.59	.91
Externalizing Symptoms	0.37	0.50	.39	.81	.88	0.34	0.52	.53	.79	.91
Internalizing Symptoms	0.75	0.66	.48	.79	.92	1.24	0.71	.39	.82	.84
Daydreaming	0.67	0.75	.56	.73	.97	0.72	0.80	.57	.78	.95
Perfectionism	1.48	0.76	.43	.63	.71	1.51	0.79	.48	.64	.81

Note. Study 1 was based on data from 314 participants and 2,452 diaries; Study 2 was based on data from 77 participants and 3,079 diaries. ICC = Intraclass correlations coefficient. Rel = Reliability. Note that in Study 1 the scale on Internalizing Symptoms did not include item 20.

Table 2

Correlations of PDD scales' individual means with each other and with maladaptive personality traits in Study 1

Scale	Maladaptive trait domains					Daily situations and behaviors							
	NA	DET	ANT	DIS	PSY	PE	SS	W	S	AS	ES	IS	D
Positive Events (PE)	-.14*	-.35***	.06	-.14*	-.08								
Social Stress (SS)	.37***	.31***	.23***	.33***	.35***	-.05							
Workload (W)	.27***	.31***	.07	.20***	.26***	.02	.44***						
Sociability (S)	-.07	-.35***	.08	-.06	-.07	.74***	.04	.03					
Attention Seeking (AS)	.22***	-.00	.39***	.23***	.24***	.29***	.23***	.25***	.31***				
Externalizing Symptoms (ES)	.32***	.15**	.30***	.43***	.37***	.06	.60***	.28***	.13*	.31***			
Internalizing Symptoms (IS)	.52***	.50***	.10	.40***	.49***	-.18**	.61***	.53***	-.11	.24***	.50***		
Daydreaming (D)	.34***	.38***	.18**	.37***	.54***	-.02	.35***	.28***	-.04	.26***	.36***	.52***	
Perfectionism (P)	-.03	-.01	.01	-.28***	-.01	.33***	.03	.20***	.24***	.12*	-.03	.03	-.05

Note. $N = 314$. NA = Negative Affectivity. DET = Detachment. ANT = Antagonism. DIS = Disinhibition. PSY = Psychoticism. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 3

Medians and interquartile ranges for within-person correlations of PDD scales in Study 1

Scale	PE	SS	W	S	AS	ES	IS	D
Positive Events (PE)								
Social Stress (SS)	-.14 [-.42, .20]							
Workload (W)	.08 [-.24, .46]	.11 [-.19, .46]						
Sociability (S)	.48 [.18, .71]	-.10 [-.38, .18]	-.04 [-.38, .29]					
Attention Seeking (AS)	.28 [-.04, .52]	.02 [-.28, .36]	.07 [-.23, .44]	.34 [-.02, .54]				
Externalizing Symptoms (ES)	-.02 [-.43, .30]	.33 [-.11, .65]	.13 [-.20, .51]	.04 [-.26, .32]	.09 [-.22, .42]			
Internalizing Symptoms (IS)	-.28 [-.56, .05]	.32 [-.06, .63]	.22 [-.13, .57]	-.29 [-.55, .03]	-.07 [-.38, .30]	.37 [.06, .66]		
Daydreaming (D)	-.05 [-.35, .24]	-.07 [-.31, .40]	.00 [-.27, .31]	-.05 [-.39, .28]	.00 [-.25, .36]	.13 [-.21, .48]	.22 [-.07, .51]	
Perfectionism (P)	.29 [-.03, .54]	-.02 [-.37, .28]	.23 [-.05, .50]	.18 [-.11, .45]	.23 [-.09, .47]	-.01 [-.35, .30]	-.17 [-.47, .24]	-.01 [-.38, .28]

Note. On average, sample size for each distribution of within-person correlations was $M = 265.7$ ($Range = 221-304$). Missings are due to cases with within-person variance equaling zero.

Table 4

Reasons for non-participation of therapists in Study 3

Reason	<i>M</i>	<i>Md</i>	<i>SD</i>	< 25 (%)	> 75 (%)
I do not want to expect my patients to complete a questionnaire every day.	62.83	78	39.32	24.81	53.49
I have no need for new personality questionnaires. My current procedures are sufficient.	50.76	55	40.27	35.66	37.21
The PDD questionnaire does not fit my way of working.	46.91	50	41.9	41.09	34.88
I don't work with questionnaires.	38.48	22	41.63	51.16	29.46
A daily questionnaire in the evening disrupts the therapy process.	36.92	22	40.03	51.94	26.36
My patients don't want to take part in the survey.	31.18	16	34.90	53.49	14.73
I have concerns that the patient data is not stored sufficiently securely.	28.35	13	33.40	58.91	12.40
I am concerned that the therapist data is not stored sufficiently securely.	21.91	0	29.02	65.12	7.75
I do not want to leave the evaluation of a questionnaire to an unknown computer procedure/algorithm.	18.74	0	30.52	73.64	10.08
If the PDD was a classic paper questionnaire, I would have used it.	18.49	0	30.37	71.32	7.75
I was not made sufficiently clear about the sense/benefit of the questionnaire.	18.25	0	29.66	75.97	8.53
My patients do not have the necessary technical skills to participate in such a survey.	15.85	0	24.40	72.87	3.88
I am sceptical about the use of modern technology in psychotherapeutic assessment.	15.60	0	26.66	75.97	4.65
I have no interest in participating in scientific research.	11.57	0	21.31	80.62	1.55
I am afraid that using the PDD (this study) could cause technical problems that overtax me.	11.10	0	23.40	85.27	3.10

Note. $N = 129$. The numbers in the last two columns refer to the percentage of participants scoring in the upper and lower quartile of the rating scale.

Panel A

Panel B

Figure 1. Results of Multilevel Exploratory Factor Analyses (MEFA) for 10 selected situational items (Panel A) and 19 selected behavior items (Panel B). Solid paths represent substantially positive loadings ($> .30$); dashed paths represent substantially negative loadings ($< -.30$). Circles on the left side represent within-person factors; circles on the right side represent between-person factors. Residual variances of items are omitted. The items 11, 20 and 21 were not part of the MEFA. AS = Attention-seeking. D = Daydreaming. ES = Externalizing Symptoms. IS = Internalizing Symptoms. P = Perfectionism. PE = Positive Events. S = Sociability. SS = Social Stress. W = Workload.

Figure 2. Visualized feedback on PDD results for the case example. The upper panels present standardized individual means of daily situations (Panel A) and behaviors (Panel B), including 95% confidence intervals. The lower panels show significant positive (blue lines) and negative (red lines) within-person correlations, representing contemporaneous (Panel C) and lagged (Panel D) associations between daily situations (grey squares) and behaviors (white squares). ES = Externalizing Symptoms. IS = Internalizing Symptoms. PE = Positive Events. S = Sociability. SS = Social Stress. W = Workload.

Appendix A

Personality dynamics diary items representing daily situation experiences

	English	German	Facet	Domain
1	I had a good time with others (e.g., interesting or funny conversations).	Ich hatte eine gute Zeit mit anderen (z.B. interessante oder lustige Gespräche).	Communal Reward	Positive Events
2	I was ignored or rejected by others.	Ich wurde von anderen ignoriert, abgelehnt oder zurückgewiesen.	Hostility	Social Stress
3	I had to deal with too many, or too difficult tasks.	Ich musste zu viele oder zu schwierige Aufgaben erledigen.	Workload	Workload
4	I received praise or recognition from others.	Ich bekam von anderen Lob oder Anerkennung.	Agentic Reward	Positive Events
5	I was left in the lurch by a close person.	Ich wurde von einer nahestehenden Person im Stich gelassen.	Disappointments	Social Stress
6	I received support from others.	Ich bekam von anderen Unterstützung.	Communal Reward	Positive Events
7	I was blamed, criticized, or devalued by someone.	Ich wurde von jemandem beschuldigt, kritisiert oder schlecht gemacht.	Hostility	Social Stress
8	I was under high pressure to succeed while getting done with my tasks.	Ich stand beim Erledigen meiner Aufgaben unter großem Erfolgsdruck.	Workload	Workload
9	I had a success in school or work.	Ich hatte ein Erfolgserlebnis im Studium/bei der Arbeit.	Agentic Reward	Positive Events
10	I was exploited or cheated by someone.	Ich wurde von jemandem ausgenutzt oder betrogen.	Disappointments	Social Stress
11	I was alone or had hardly any social contacts.	Ich war allein oder hatte kaum soziale Kontakte.		

Note. Item 11 is not part of any scale but was retained due to its psychological relevance.

Appendix B

Personality dynamics diary items representing daily behaviors

	English	German	Facet	Domain
1	I met, or arranged to meet, others.	Ich traf oder verabedete mich mit anderen.	Outgoingness	Sociability
2	I was not interested in doing much of anything.	Ich hatte keine Lust, irgendwas zu tun.	Detachment	Internalizing Symptoms
3	I wanted people to notice my body.	Ich wollte, dass anderen mein Körper auffällt.	Attention-Seeking	Attention-Seeking
4	I felt like I wanted to hurt someone.	Ich hatte Lust jemandem wehzutun.	Aggression	Externalizing Symptoms
5	I spent a lot of time day dreaming.	Ich verbrachte viel Zeit mit Tagträumen.	Daydreaming	Daydreaming
6	I made sure everything I did was perfect.	Ich achtete darauf, alles perfekt zu machen.	Perfectionism	Perfectionism
7	I felt depressed.	Ich fühlte mich niedergeschlagen.	Negative Affect	Internalizing Symptoms
8	I gave a present to someone or shared something with others.	Ich schenkte jemandem etwas oder teilte etwas mit anderen.	Agreeableness	Sociability
9	I did something on impulse.	Ich handelte impulsiv.	Impulsivity	Externalizing Symptoms
10	My mood was up and down.	Meine Stimmung schwankte.	Emotional Instability	Internalizing Symptoms
11	I was self-confident when interacting with others.	Ich trat im Kontakt mit anderen selbstsicher auf.	Outgoingness	Sociability
12	I didn't want to be around others.	Ich wollte niemanden um mich haben.	Detachment	Internalizing Symptoms
13	I wanted people to notice my talents.	Ich wollte, dass anderen meine Fähigkeiten auffallen.	Attention-Seeking	Attention-Seeking
14	I acted aggressively towards someone.	Ich verhielt mich gegenüber jemandem aggressiv.	Aggression	Externalizing Symptoms
15	I got lost in my fantasies.	Ich war ganz in meine Fantasien versunken.	Daydreaming	Daydreaming
16	I finished my tasks thoroughly.	Ich erledigte meine Aufgaben gründlich.	Perfectionism	Perfectionism
17	I felt anxious.	Ich fühlte mich ängstlich.	Negative Affect	Internalizing Symptoms
18	I cared for someone or helped someone voluntarily with something.	Ich kümmerte mich um jemanden oder half jemandem freiwillig bei etwas.	Agreeableness	Sociability
19	I acted on impulse while feeling upset.	Ich reagierte impulsiv während ich aufgebracht war.	Impulsivity	Externalizing Symptoms
20	My emotions were like a roller coaster.*	Ich hatte Gefühlsausbrüche.	Emotional Instability	Internalizing Symptoms
21	I was happy.*	Ich war glücklich.		

Note. * Items were not included in Study 1. Item 21 is not part of any scale but was added due to its psychological relevance.

Supplementary Material

Additional Information on Item Selection in Study 1

Developing scales on situations. We observed clear drops after the 4th eigenvalue in the within-person matrix, and after the 3rd eigenvalue in the between-person matrix. However, to be as comprehensive as possible, we decided to extract six within- and six between-factors as we noticed slight further drops after the 6th factor, respectively. A MEFA specifying such a model yielded a good fit to the data, $\chi^2(170) = 327.0, p < .001$, CFI = .97, RMSEA = .02, SRMR_{within} = .04, SRMR_{between} = .03. After oblique Geomin rotation, all items showed at least one substantial loading ($> |.30|$) on one of the six factors both in the within- and the between-person matrix. In the within-person matrix, three items had secondary loadings; in the between-person matrix, six items had secondary loadings (see Table S4 and S5).

Although it was not possible to select two “clean” marker items for each factor, we succeeded in finding at least two items for each within-person factor that showed a consistent pattern of between-person loadings. We decided to omit marker items for one factor representing sexual and physical threat due to very low prevalence in this sample (i.e., $< 0.2\%$ “very true” responses). Moreover, we decided to keep one interstitial item due to its psychological and clinical relevance (i.e., Item 11: “I was alone or had hardly any social contacts”). Panel A of Figure S1 visualizes the substantial loadings of the 11 selected marker items. The following five within-person factors were represented with two items, respectively: agentic reward (W1; Item 4 and 9), communal reward (W4; Item 1 and 6), hostility (W3; Item 2 and 7), disappointments (W5; Item 5 and 10) and workload (W2/B3; Item 3 and 8). The within-person factors of agentic and communal reward (B1) as well as hostility and disappointments (B2) were indistinguishable from a between-person perspective.

Developing scales on behaviors. We noticed the last visible drop after the 9th eigenvalue in the within-person matrix, and after the 8th eigenvalue in the between-person

matrix. A MEFA specifying nine within- and eight between-person factors yielded an acceptable model fit, $\chi^2(1919) = 2886.9, p < .001$, CFI = .95, RMSEA = .01, SRMR_{within} = .03, SRMR_{between} = .04. After oblique Geomin rotation, 4 items showed no substantial loadings ($> |.30|$) on all nine within-person factors, 38 items showed one substantial loading, and 11 items showed two substantial loadings (see Table S7). Regarding the between-person matrix, all items showed at least one substantial loading. That is, 22 items showed exactly one substantial loading, 22 items showed two, and nine items showed three substantial loadings (see Table S8).

Although it was not possible to select two “clean” marker items per factor, we succeeded in finding at least two items for each between-person factor that showed a consistent pattern of within-person loadings. Panel B of Figure S1 visualizes the substantial loadings of the 19 selected marker items. Due to its breadth in content, we decided to keep five items representing the first factor of internalizing symptoms (W1/B1), which covered daily negative affect (Item 7 and 17), detachment (Item 2 and 12), and emotional instability (Item 10). In addition, the following between-person factors were represented with two to four items, respectively: daydreaming (W8/B8; Item 5 and 15), impulsivity (W9/B5; Item 9 and 19), externalizing symptoms (W3/B2) comprising both impulsivity (Item 9 and 19) and aggression (Item 4 and 14), perfectionism (W6/B6, Item 6 and 16), outgoingness (W4/B4; Item 1 and 11), agreeableness (B3, Item 8 and 18) and attention-seeking (B7, Item 3 and 13). The latter two between-person factors were indistinguishable from a within-person perspective (W2).

Therapist Evaluation of the Case Example in Study 3

The therapist reported the results on individual means were only modestly informative (= 24), but did endorse having developed some new ideas for exploration (= 71). The conformity with her own explorations was very high (= 93). With regard to within-person correlations, the therapist reported having gained a lot of new information (= 84), which led to

many new ideas for exploration (= 100). The conformity with her own explorations was partly given (= 65). When giving an overall evaluation of the PPD's generated information, the therapist reported having used some of the new information for planning future sessions (= 85). The relation between effort and new insights (= 100) as well as the acceptance of the method by the patient was rated as very good (= 100).

Table S1

Descriptive statistics and reliability of PID-5 domain scales in Study 1 and Study 2

<i>Domain Scale</i>	Study 1 (N = 314)			Study 2 (N = 54)		
	<i>M</i>	<i>SD</i>	<i>α</i>	<i>M</i>	<i>SD</i>	<i>α</i>
Negative Affectivity	1.19	0.60	.82	1.57	0.58	.69
Detachment	0.64	0.44	.73	1.33	0.52	.66
Antagonism	0.82	0.41	.72	0.50	0.38	.78
Disinhibition	0.88	0.44	.72	0.95	0.48	.80
Psychoticism	0.72	0.46	.80	0.83	0.51	.85

Note. Cronbach's Alpha (α) of maladaptive trait domain scales was computed based on the three corresponding facet scales (see <https://www.psychiatry.org/psychiatrists/practice/dsm/educational-resources/assessment-measures>).

Table S2

Initial item pool representing daily situation experiences

PDD	English	German	Theoretical Domain
4	I received praise or recognition from others.	Ich bekam von anderen Lob oder Anerkennung.	Positive social experience
1	I had a good time with others (e.g., interesting or funny conversations).	Ich hatte eine gute Zeit mit anderen (z.B. interessante oder lustige Gespräche).	Positive social experience
6	I received support from others.	Ich bekam von anderen Unterstützung.	Positive social experience
9	I had a success in school or work.	Ich hatte ein Erfolgserlebnis im Studium/bei der Arbeit.	Positive task-related experience
	I received good news.	Ich erhielt gute Nachrichten.	Positive experience
	I was physically threatened, harmed, or abused by someone.	Ich wurde von jemandem körperlich bedroht, verletzt oder misshandelt.	Negative social experience
	I was sexually harassed by someone.	Ich wurde von jemandem sexuell belästigt.	Negative social experience
2	I was ignored or rejected by others.	Ich wurde von anderen ignoriert, abgelehnt oder zurückgewiesen.	Negative social experience
7	I was blamed, criticized, or devalued by someone.	Ich wurde von jemandem beschuldigt, kritisiert oder schlecht gemacht.	Negative social experience
10	I was exploited or cheated by someone.	Ich wurde von jemandem ausgenutzt oder betrogen.	Negative social experience
11	I was alone or had hardly any social contacts.	Ich war allein oder hatte kaum soziale Kontakte.	Negative social experience
5	I was left in the lurch by a close person.	Ich wurde von einer nahestehenden Person im Stich gelassen.	Negative social experience
	I was patronized or ordered about by someone.	Ich wurde von jemandem bevormundet oder herumkommandiert.	Negative social experience
	I had to deal with uninteresting, unchallenging, or annoying tasks.	Ich musste uninteressante, anspruchslose oder lästige Aufgaben erledigen.	Negative task-related experience
3	I had to deal with too many, or too difficult tasks.	Ich musste zu viele oder zu schwierige Aufgaben erledigen.	Negative task-related experience
8	I was under high pressure to succeed while getting done with my tasks.	Ich stand beim Erledigen meiner Aufgaben unter großem Erfolgsdruck.	Negative task-related experience
	I had a setback or failure at my study/job.	Ich hatte einen Rückschlag oder Misserfolg im Studium/Beruf.	Negative task-related experience
	I had no time for myself due to my social contacts and obligations.	Ich hatte aufgrund meiner sozialen Kontakte und Verpflichtungen keine Zeit für mich selbst.	Negative experience
	I was physically ill (i.e., with a sick note or incapable of working).	Ich war körperlich krank (d.h. krank geschrieben oder arbeitsunfähig).	Negative experience
	Something else happened that was stressful.	Es ist irgendetwas anderes Belastendes passiert.	Negative experience

Table S3

Initial item pool representing daily behaviors

PDD	English	German	Theoretical Domain
7	I felt depressed.*	Ich fühlte mich niedergeschlagen.	Negative Affectivity
17	I felt anxious.*	Ich fühlte mich ängstlich.	Negative Affectivity
10	My mood was up and down.*	Meine Stimmung schwankte.	Negative Affectivity
	I worried about being abandoned.*	Ich machte mir Sorgen darüber, verlassen zu werden.	Negative Affectivity
	I had a hard time controlling my emotions.	Ich hatte Schwierigkeiten, meine Gefühle zu kontrollieren.	Negative Affectivity
19	I acted on impulse while feeling upset.*	Ich reagierte impulsiv während ich aufgebracht war.	Urgency
	I acted on my emotions.*	Ich handelte aus meinen Gefühlen heraus.	Urgency
2	I was not interested in doing much of anything.*	Ich hatte keine Lust, irgendwas zu tun.	Detachment
12	I didn't want to be around others.*	Ich wollte niemanden um mich haben.	Detachment
	My relationships felt empty.*	Meine Beziehungen fühlten sich bedeutungslos an.	Detachment
	I avoided other people.	Ich ging anderen Menschen aus dem Weg.	Detachment
3	I wanted people to notice my body.*	Ich wollte, dass anderen mein Körper auffällt.	Exhibitionism
13	I wanted people to notice my talents.*	Ich wollte, dass anderen meine Fähigkeiten auffallen.	Exhibitionism
	I thought about sex.*	Ich dachte an Sex.	Exhibitionism
4	I felt like I wanted to hurt someone.*	Ich hatte Lust jemandem wehzutun.	Hostility
14	I acted aggressively towards someone.*	Ich verhielt mich gegenüber jemandem aggressiv.	Hostility
	I lost my temper.*	Ich verlor meine Beherrschung.	Hostility
	I said something offensive to someone.*	Ich sagte etwas Beleidigendes zu jemandem.	Hostility
	I took advantage of someone.*	Ich nutzte jemanden aus.	Manipulativeness
	I lied to someone.*	Ich log jemanden an.	Manipulativeness
9	I did something on impulse.*	Ich handelte impulsiv.	Impulsivity
	I did something dangerous just for the thrill.*	Ich tat etwas Gefährliches nur wegen des Nervenkitzels.	Impulsivity
	I behaved irresponsibly.*	Ich verhielt mich verantwortungslos.	Impulsivity
6	I made sure everything I did was perfect.*	Ich achtete darauf, alles perfekt zu machen.	Compulsivity
	I insisted things be done my way.*	Ich bestand darauf, dass Dinge auf meine Weise gemacht werden.	Compulsivity
	I put work above everything else.*	Ich stellte meine Arbeit über alles andere.	Compulsivity
	I made sure that one adheres to rules and arrangements.	Ich achtete darauf, dass Regeln oder Abmachungen eingehalten werden.	Compulsivity
	I got lost in details on tasks.	Ich verlor mich bei Aufgaben in Details.	Compulsivity

15	I got lost in my fantasies.*	Ich war ganz in meine Fantasien versunken.	Psychoticism
	My thoughts were confusing.*	Meine Gedanken waren verwirrend.	Psychoticism
	I did things others might find unusual.*	Ich tat Dinge, die andere möglicherweise ungewöhnlich finden.	Psychoticism
	I was suspicious of others.*	Ich war anderen gegenüber misstrauisch.	Psychoticism
5	I spent a lot of time day dreaming.	Ich verbrachte viel Zeit mit Tagträumen.	Psychoticism
	I had superstitious thoughts.	Ich hatte abergläubische Gedanken.	Psychoticism
	I imposed on somebody.	Ich drängte mich jemandem auf.	Intrusiveness
	I told personal things to someone I hardly know.	Ich erzählte jemandem persönliche Dinge, den ich kaum kenne.	Intrusiveness
	I interfered in other people's business.	Ich mischte mich in die Angelegenheiten anderer Leute ein.	Intrusiveness
	I talked insistently to someone.	Ich redete eindringlich auf jemanden ein.	Intrusiveness
	I was angry.	Ich war wütend.	Neuroticism
	I felt ashamed or guilty.	Ich schämte mich oder fühlte mich schuldig.	Neuroticism
	I was envy or jealous.	Ich war neidisch oder eifersüchtig.	Neuroticism
1	I met, or arranged to meet, others.	Ich traf oder verabredete mich mit anderen.	Extraversion
	I flirted with someone.	Ich flirtete mit jemandem.	Extraversion
	I told someone something personal about myself.	Ich erzählte jemandem etwas Persönliches über mich.	Extraversion
11	I was self-confident when interacting with others.	Ich trat im Kontakt mit anderen selbstsicher auf.	Dominance
	I asserted myself or I put my own interests first.	Ich setzte meine eigenen Interessen durch.	Dominance
	I took the initiative during joint activities.	Ich ergriff bei gemeinsamen Aktivitäten die Initiative.	Dominance
8	I gave a present to someone or shared something with others.	Ich schenkte jemandem etwas oder teilte etwas mit anderen.	Agreeableness
18	I cared for someone or helped someone voluntarily with something.	Ich kümmerte mich um jemanden oder half jemandem freiwillig bei etwas.	Agreeableness
	I was considerate of others or made compromises.	Ich nahm auf andere Rücksicht oder ging Kompromisse ein.	Agreeableness
16	I finished my tasks thoroughly.	Ich erledigte meine Aufgaben gründlich.	Conscientiousness
	I set goals for myself.	Ich setzte mir selbst Ziele.	Conscientiousness
7	I adhered to agreements and commitments.	Ich hielt Vereinbarungen und Verpflichtungen ein.	Conscientiousness

Note. * Items were taken verbatim from Wright & Simms (2016).

Table S4

Within-person factor structure of daily situation experiences

PDD	English	W1	W2	W3	W4	W5	W6
4	I received praise or recognition from others.	<u>.45</u>	.01	-.08	.27	.05	.17
1	I had a good time with others (e.g., interesting or funny conversations).	.24	-.17	-.01	<u>.58</u>	.01	-.03
6	I received support from others.	.11	.02	-.04	<u>.43</u>	.00	.32
9	I had a success in school or work.	<u>.48</u>	.26	-.03	.07	.03	.06
	I received good news.	<u>.64</u>	.03	.14	-.01	-.26	.00
	I was physically threatened, harmed, or abused by someone.	.00	.04	.16	.09	.22	<u>.30</u>
	I was sexually harassed by someone.	-.01	-.01	.28	-.02	-.09	<u>.40</u>
2	I was ignored or rejected by others.	.02	-.02	<u>.59</u>	-.08	.20	-.02
7	I was blamed, criticized, or devalued by someone.	-.01	.00	<u>.89</u>	.03	.02	.02
10	I was exploited or cheated by someone.	-.05	.04	.27	-.03	<u>.36</u>	.18
11	I was alone or had hardly any social contacts.	.02	.00	-.02	<u>-.85</u>	.04	<i>.51</i>
5	I was left in the lurch by a close person.	.03	-.04	.04	-.15	<u>.86</u>	-.04
	I was patronized or ordered about by someone.	-.03	.13	<u>.40</u>	.03	.19	-.05
	I had to deal with uninteresting, unchallenging, or annoying tasks.	-.01	<u>.55</u>	.00	-.16	.00	-.03
3	I had to deal with too many, or too difficult tasks.	-.02	<u>.83</u>	-.19	-.03	-.02	-.01
8	I was under high pressure to succeed while getting done with my tasks.	.07	<u>.56</u>	.05	.04	-.02	.19
	I had a setback or failure at my study/job.	-.23	<u>.37</u>	.08	-.05	.07	.19
	I had no time for myself due to my social contacts and obligations.	.03	<u>.44</u>	.03	.22	.04	-.20
	I was physically ill (i.e., with a sick note or incapable of working).	-.18	-.01	.17	-.02	-.02	<u>.42</u>
	Something else happened that was stressful.	<i>-.41</i>	.05	.00	.16	<u>.50</u>	.09

Note. The largest loading in each row is underlined. Loadings > |.30| but are not the highest loading within that row are presented in italics.

Table S5

Between-person factor structure of daily situation experiences

PDD	English	B1	B2	B3	B4	B5	B6
4	I received praise or recognition from others.	<u>.79</u>	.05	.03	-.02	.18	.12
1	I had a good time with others (e.g., interesting or funny conversations).	<u>.82</u>	-.09	-.06	-.09	.01	-.14
6	I received support from others.	<u>.83</u>	.01	.23	.04	-.20	.01
9	I had a success in school or work.	<u>.45</u>	-.03	.03	.15	-.05	<u>.69</u>
	I received good news.	<u>.59</u>	.04	-.11	-.05	.03	<u>.40</u>
	I was physically threatened, harmed, or abused by someone.	-.08	.10	.01	<u>.89</u>	-.01	.02
	I was sexually harassed by someone.	-.02	.24	-.17	<u>.85</u>	.03	.01
2	I was ignored or rejected by others.	-.05	<u>1.08</u>	-.05	-.14	-.14	.07
7	I was blamed, criticized, or devalued by someone.	.06	<u>.90</u>	-.04	.06	.06	-.13
10	I was exploited or cheated by someone.	.01	<u>.72</u>	.07	.28	.06	.03
11	I was alone or had hardly any social contacts.	<u>-.50</u>	<u>.46</u>	.14	.02	-.02	.03
5	I was left in the lurch by a close person.	-.06	<u>.86</u>	-.02	.08	.03	-.03
	I was patronized or ordered about by someone.	.12	<u>.88</u>	.09	.05	-.11	-.01
	I had to deal with uninteresting, unchallenging, or annoying tasks.	-.06	.37	<u>.50</u>	-.13	-.09	-.13
3	I had to deal with too many, or too difficult tasks.	.02	.00	<u>.91</u>	.19	.00	.03
8	I was under high pressure to succeed while getting done with my tasks.	-.03	.22	<u>.61</u>	-.10	.11	.30
	I had a setback or failure at my study/job.	.02	<u>.57</u>	.32	.10	.04	.11
	I had no time for myself due to my social contacts and obligations.	.00	.01	.53	.03	<u>.60</u>	-.01
	I was physically ill (i.e., with a sick note or incapable of working).	.02	.01	.21	<u>.50</u>	-.06	-.09
	Something else happened that was stressful.	.02	<u>.72</u>	.17	.02	.07	-.05

Note. The largest loading in each row is underlined. Loadings > |.30| but are not the highest loading within that row are presented in italics.

Table S6

Within- and between-person factor structure of selected personality dynamics diary items representing daily situation experiences

PDD	English	PE (W1/ W4)	SS (W3/ W5)	W (W2)	PE (B1)	SS (B2)	W (B3)
4	I received praise or recognition from others.	<u>.64</u>	-.02	-.01	<u>.91</u>	.07	.01
9	I had a success in school or work.	<u>.38</u>	.00	.27	<u>.58</u>	.10	.21
1	I had a good time with others (e.g., interesting or funny conversations).	<u>.71</u>	.00	-.33	<u>.72</u>	-.21	-.15
6	I received support from others.	<u>.51</u>	.06	.04	<u>.78</u>	-.02	.11
2	I was ignored or rejected by others.	-.02	<u>.79</u>	-.07	-.01	<u>.94</u>	.04
7	I was blamed, criticized, or devalued by someone.	.01	<u>.77</u>	-.01	.03	<u>.86</u>	-.03
5	I was left in the lurch by a close person.	-.05	<u>.59</u>	.05	-.04	<u>.93</u>	.01
10	I was exploited or cheated by someone.	.02	<u>.64</u>	.14	.03	<u>.99</u>	-.01
3	I had to deal with too many, or too difficult tasks.	-.10	-.01	<u>.67</u>	-.01	.22	<u>.68</u>
8	I was under high pressure to succeed while getting done with my tasks.	.01	.15	<u>.69</u>	.03	-.01	<u>1.00</u>

Note. The largest loading in each row is underlined. Loadings > |.30| but are not the highest loading within that row are presented in italics. PE = Positive Events. SS = Social Stress. W = Workload.

Table S7

Within-person factor structure of daily behaviors

PDD	English	W1	W2	W3	W4	W5	W6	W7	W8	W9
7	I felt depressed.	<u>.73</u>	-.19	.04	-.02	-.17	-.02	-.03	.02	-.04
17	I felt anxious.	<u>.61</u>	.00	.02	-.04	-.01	.13	.04	-.03	-.10
10	My mood was up and down.	<u>.64</u>	-.13	.17	.12	-.11	-.01	-.04	.02	-.01
	I worried about being abandoned.	<u>.44</u>	.06	.03	-.06	.07	.02	.21	-.04	.08
	I had a hard time controlling my emotions.	.35	.10	<u>.57</u>	.01	-.10	.02	-.03	.04	-.02
19	I acted on impulse while feeling upset.	-.06	-.08	<u>.77</u>	-.03	-.09	.10	.19	-.04	.37
	I acted on my emotions.	.19	.02	.07	<u>.34</u>	.02	-.11	.01	.05	<u>.39</u>
2	I was not interested in doing much of anything.	<u>.41</u>	-.30	-.07	-.10	-.03	-.05	-.03	.17	.07
12	I didn't want to be around others.	<u>.44</u>	-.42	.07	-.09	.08	.07	-.06	.06	.05
	My relationships felt empty.	<u>.36</u>	-.17	.09	-.04	.09	.07	.07	.00	-.03
	I avoided other people.	<u>.36</u>	-.34	.14	-.05	.16	.04	.02	.01	.03
3	I wanted people to notice my body.	.00	<u>.47</u>	-.02	-.05	.18	.02	-.04	.11	-.03
13	I wanted people to notice my talents.	.16	<u>.35</u>	-.01	.11	.06	.29	.07	-.06	.04
	I thought about sex.	-.04	<u>.35</u>	-.07	.04	.09	.00	-.07	.21	.28
4	I felt like I wanted to hurt someone.	.16	-.14	<u>.49</u>	.04	.16	-.10	.04	.07	.01
14	I acted aggressively towards someone.	.09	.00	<u>.77</u>	.01	.17	-.06	-.16	.00	.00
	I lost my temper.	.19	.06	<u>.77</u>	-.03	-.01	-.03	-.05	.03	-.09
	I said something offensive to someone.	.02	.07	<u>.56</u>	-.01	.22	-.09	-.02	-.09	.06
	I took advantage of someone.	-.06	.06	.22	-.08	<u>.37</u>	.05	.06	.01	-.14
	I lied to someone.	<u>.26</u>	.13	.01	-.13	.22	-.06	.12	.02	-.06
9	I did something on impulse.	.05	.01	<u>.48</u>	.02	-.02	.05	.12	.02	<u>.50</u>
	I did something dangerous just for the thrill.	.15	<u>.40</u>	.13	-.22	.01	.19	.19	.05	.17
	I behaved irresponsibly.	.05	-.14	<u>.24</u>	-.20	.19	-.10	.23	.15	.08
6	I made sure everything I did was perfect.	-.06	.25	.02	.06	-.03	<u>.62</u>	-.07	-.01	-.02
	I insisted things be done my way.	.01	.09	.16	.17	<u>.31</u>	.18	-.16	.05	.02
	I put work above everything else.	.04	-.07	.01	-.07	.00	<u>.69</u>	.09	-.04	.02
	I made sure that one adheres to rules and arrangements.	.06	-.08	-.04	<u>.57</u>	.00	.13	-.02	-.02	-.01
	I got lost in details on tasks.	.22	-.03	-.04	-.03	.08	<u>.41</u>	-.02	.06	.05
15	I got lost in my fantasies.	-.01	.01	.07	.01	.00	.05	.00	<u>.85</u>	-.04
	My thoughts were confusing.	<u>.59</u>	.12	-.01	.09	-.09	.01	.08	.20	.03
	I did things others might find unusual.	<u>.24</u>	.15	.04	.00	.17	-.05	-.03	.02	.18
	I was suspicious of others.	<u>.44</u>	.08	.09	.05	.07	.00	.08	-.05	-.02
5	I spent a lot of time day dreaming.	.11	-.03	-.02	-.02	.02	-.01	.01	<u>.64</u>	.05
	I had superstitious thoughts.	.25	.06	.00	.02	-.03	-.03	<u>.31</u>	.14	.00
	I imposed on somebody.	.14	-.07	.04	.02	<u>.41</u>	.00	.34	.01	-.02
	I told personal things to someone I hardly know.	-.04	.05	-.01	.04	-.03	.07	<u>.75</u>	-.04	-.01
	I interfered in other people's business.	-.03	-.01	<u>.37</u>	.11	.24	.00	<u>.29</u>	.06	-.18

	I talked insistently to someone.	.00	.14	<u>.40</u>	.01	.26	.02	.01	-.09	-.11
	I was angry.	.35	-.12	<u>.49</u>	.04	.02	.04	-.02	-.08	.07
	I felt ashamed or guilty.	<u>.50</u>	.00	.04	-.13	.02	.00	.05	-.03	.06
	I was envy or jealous.	<u>.46</u>	.02	-.09	.03	.18	-.01	.15	-.02	-.02
1	I met, or arranged to meet, others.	-.07	.29	.07	<u>.45</u>	-.02	-.23	.12	-.01	.02
	I flirted with someone.	-.02	<u>.50</u>	.00	-.04	.10	-.04	.03	.12	.23
	I told someone something personal about myself.	.10	.09	-.06	.32	.06	-.09	<u>.50</u>	-.01	.05
11	I was self-confident when interacting with others.	-.15	.02	-.02	<u>.46</u>	.18	.03	.14	.02	.08
	I asserted myself or I put my own interests first.	-.01	.03	-.16	.25	<u>.27</u>	.00	-.12	-.02	.24
	I took the initiative during joint activities.	-.07	.14	-.01	<u>.41</u>	<i>.40</i>	.01	.01	-.06	.05
8	I gave a present to someone or shared something with others.	.01	<u>.39</u>	.04	.22	.02	-.10	-.03	-.05	.07
18	I cared for someone or helped someone voluntarily with something.	.09	<u>.36</u>	.03	.30	.04	.07	.01	-.07	-.06
	I was considerate of others or made compromises.	.06	.15	-.03	<u>.34</u>	.02	.01	.11	.06	-.10
16	I finished my tasks thoroughly.	-.20	.10	.02	.18	-.03	<u>.58</u>	.00	.03	-.03
	I set goals for myself.	.04	-.08	-.14	.25	<i>.31</i>	<u>.37</u>	.00	.01	.03
7	I adhered to agreements and commitments.	-.05	-.02	.05	<u>.63</u>	-.10	.13	.01	.03	-.15

Note. The largest loading in each row is underlined. Loadings > |.30| but are not the highest loading within that row are presented in italics.

Table S8

Between-person factor structure of daily behaviors

PDD	English	B1	B2	B3	B4	B5	B6	B7	B8
7	I felt depressed.	<u>.81</u>	.02	.04	.12	.27	.01	-.05	-.09
17	I felt anxious.	<u>.62</u>	.22	.06	-.18	.14	-.05	-.01	.00
10	My mood was up and down.	<u>.62</u>	.13	-.06	.10	.37	.09	.07	-.03
	I worried about being abandoned.	<u>.41</u>	.04	.15	.00	<u>.31</u>	-.07	.38	-.10
	I had a hard time controlling my emotions.	<u>.41</u>	<u>.40</u>	.01	.00	<u>.44</u>	.01	.03	.01
19	I acted on impulse while feeling upset.	.07	<u>.68</u>	.01	-.16	<u>.41</u>	.04	-.07	.19
	I acted on my emotions.	-.05	-.03	.39	-.14	<u>.57</u>	.02	.03	.32
2	I was not interested in doing much of anything.	<u>.73</u>	.08	-.04	-.09	.11	-.10	-.05	.00
12	I didn't want to be around others.	<u>.66</u>	.19	-.03	-.17	.00	.06	.02	.07
	My relationships felt empty.	<u>.59</u>	.12	-.17	-.04	.03	.02	.22	-.05
	I avoided other people.	<u>.56</u>	.33	.06	-.20	.06	.03	.10	.00
3	I wanted people to notice my body.	.07	-.06	-.04	.39	.04	.23	<u>.72</u>	.06
13	I wanted people to notice my talents.	.05	.00	.02	.20	.03	<u>.41</u>	<u>.66</u>	.12
	I thought about sex.	-.06	.19	-.04	<u>.63</u>	-.13	.01	.15	.08
4	I felt like I wanted to hurt someone.	-.11	<u>.76</u>	-.23	.04	.06	.02	.08	-.06
14	I acted aggressively towards someone.	-.18	<u>.99</u>	-.18	.01	.33	.07	-.08	-.02
	I lost my temper.	.01	<u>.78</u>	-.07	-.18	<u>.30</u>	-.04	-.02	.11
	I said something offensive to someone.	.04	<u>.84</u>	.00	.10	.02	-.13	.02	-.01
	I took advantage of someone.	.04	<u>.54</u>	.12	.03	-.12	.07	<u>.45</u>	-.03
	I lied to someone.	.13	<u>.57</u>	-.04	.23	-.08	-.09	.13	.07
9	I did something on impulse.	.09	<u>.40</u>	.04	.07	.35	-.05	.08	<u>.40</u>
	I did something dangerous just for the thrill.	-.03	<u>.72</u>	-.01	.01	-.15	.02	.14	.24
	I behaved irresponsibly.	.19	<u>.57</u>	.15	.02	-.01	-.23	.16	.15
6	I made sure everything I did was perfect.	.04	-.01	-.10	-.20	-.03	<u>.81</u>	.01	-.18
	I insisted things be done my way.	-.11	<u>.51</u>	.02	-.03	-.07	<u>.48</u>	.20	.03
	I put work above everything else.	.22	.20	-.09	-.19	-.03	<u>.52</u>	.10	-.06
	I made sure that one adheres to rules and arrangements.	-.01	-.05	.06	.10	.17	<u>.49</u>	-.17	.00
	I got lost in details on tasks.	<u>.51</u>	.09	.00	-.12	-.10	.24	.25	.16
15	I got lost in my fantasies.	<u>.75</u>	-.05	-.09	-.02	-.09	.00	.02	.52
	My thoughts were confusing.	<u>.74</u>	.21	.08	.08	.01	-.04	-.02	.15
	I did things others might find unusual.	<u>.49</u>	.38	.10	.08	-.17	.07	-.04	.28
	I was suspicious of others.	<u>.46</u>	.32	-.03	-.09	.14	.15	.12	.00
5	I spent a lot of time day dreaming.	<u>.67</u>	-.03	-.07	.01	-.03	-.07	-.02	.55
	I had superstitious thoughts.	.31	<u>.34</u>	.05	-.12	.16	.01	.04	.26
	I imposed on somebody.	.11	<u>.58</u>	.13	-.08	-.14	.06	<u>.36</u>	-.02
	I told personal things to someone I hardly know.	.13	.23	.10	-.11	.24	.01	<u>.40</u>	.04
	I interfered in other people's business.	.02	<u>.50</u>	.36	-.10	.05	-.04	<u>.40</u>	.01

	I talked insistently to someone.	.05	<u>.61</u>	.22	.00	-.02	.03	.14	-.12
	I was angry.	.10	<u>.74</u>	-.05	.05	.36	-.01	-.12	-.16
	I felt ashamed or guilty.	<u>.55</u>	.32	.08	.06	.02	.03	.08	-.02
	I was envy or jealous.	.22	.27	.01	.12	.09	-.03	<u>.46</u>	-.07
1	I met, or arranged to meet, others.	-.05	.07	<i>.46</i>	<u>.56</u>	-.09	-.01	-.04	-.03
	I flirted with someone.	-.11	.30	.33	<u>.34</u>	-.04	-.12	.26	-.07
	I told someone something personal about myself.	.01	-.15	<u>.54</u>	.14	.38	.09	.18	-.04
11	I was self-confident when interacting with others.	<i>-.44</i>	.07	.07	<u>.47</u>	.10	.42	-.04	.12
	I asserted myself or I put my own interests first.	<u>-.40</u>	.14	.15	.02	.03	.36	.00	.33
	I took the initiative during joint activities.	-.18	.10	.37	.15	.13	<u>.43</u>	.05	.27
8	I gave a present to someone or shared something with others.	.02	.02	<u>.70</u>	.02	-.03	.09	.04	.03
18	I cared for someone or helped someone voluntarily with something.	.02	.20	<u>.85</u>	-.04	-.05	.03	-.15	.01
	I was considerate of others or made compromises.	.34	-.06	<u>.53</u>	.29	.11	.17	<i>-.31</i>	.06
16	I finished my tasks thoroughly.	.01	.01	.11	-.02	-.07	<u>.66</u>	<i>-.44</i>	-.04
	I set goals for myself.	-.05	.02	.19	.04	.01	<u>.46</u>	-.13	.22
7	I adhered to agreements and commitments.	.17	-.10	.05	.39	.02	<u>.54</u>	<i>-.49</i>	-.11

Note. The largest loading in each row is underlined. Loadings > |.30| but are not the highest loading within that row are presented in italics.

Table S9

Within- and between-person factor structure of selected personality dynamics diary items representing daily behaviors

PDD	English	IS (W1)	S (W2/ W4)	ES (W3)	D (W8)	P (W6)	IS (B1)	S (B3/ B4)	ES (B2)	AS (B7)	P (B6)
7	I felt depressed.	<u>.77</u>	-.08	-.01	-.02	-.04	<u>.74</u>	.10	.05	.04	.05
17	I felt anxious.	<u>.61</u>	.03	.02	-.03	.12	<u>.75</u>	-.01	.17	-.05	.04
2	I was not interested in doing much of anything.	<u>.44</u>	-.24	-.05	.16	-.08	<u>.82</u>	-.08	.04	-.04	-.01
12	I didn't want to be around others.	<u>.50</u>	-.31	.09	.05	.01	<u>.79</u>	-.09	.08	.14	.10
10	My mood was up and down.	<u>.66</u>	.01	.13	.00	.04	<u>.55</u>	.06	.26	.14	.03
5	I spent a lot of time day dreaming.	-.01	.00	.01	<u>.81</u>	-.03	<u>.61</u>	.10	.01	.04	-.22
15	I got lost in my fantasies.	.03	-.01	.01	<u>.71</u>	.05	<u>.71</u>	.05	-.06	.12	-.14
9	I did something on impulse.	.03	.02	<u>.68</u>	.09	.02	.06	.26	<u>.61</u>	.06	-.27
19	I acted on impulse while feeling upset.	-.03	-.14	<u>.94</u>	-.03	.04	.13	.14	<u>.87</u>	-.10	-.05
4	I felt like I wanted to hurt someone.	.27	.08	<u>.47</u>	.06	-.16	.00	-.15	<u>.58</u>	.15	-.01
14	I acted aggressively towards someone.	.27	.03	<u>.54</u>	-.03	-.04	-.17	-.05	<u>1.08</u>	.01	.04
6	I made sure everything I did was perfect.	-.01	.00	.00	.01	<u>.74</u>	.11	.02	.01	.27	<u>.68</u>
16	I finished my tasks thoroughly.	-.06	.04	-.01	-.01	<u>.61</u>	-.03	.37	-.06	-.02	<u>.74</u>
1	I met, or arranged to meet, others.	-.11	<u>.62</u>	.06	.00	-.11	-.30	<u>.69</u>	-.03	.04	-.15
11	I was self-confident when interacting with others.	-.11	<u>.38</u>	.02	.02	.13	<u>-.60</u>	.42	.13	.24	.14
8	I gave a present to someone or shared something with others.	-.03	<u>.54</u>	.01	.01	-.06	.01	<u>.69</u>	-.05	.04	.01
18	I cared for someone or helped someone voluntarily with something.	.14	<u>.59</u>	-.05	-.05	.12	.04	<u>.86</u>	.06	-.18	.02
3	I wanted people to notice my body.	-.04	<u>.38</u>	-.03	.14	.02	.00	-.01	-.02	<u>.90</u>	-.13
13	I wanted people to notice my talents.	.16	<u>.39</u>	.03	.03	.29	.06	.10	.05	<u>.78</u>	-.01

Note. The largest loading in each row is underlined. Loadings > |.30| but are not the highest loading within that row are presented in italics. AS = Attention-seeking. D = Daydreaming. ES = Externalizing Symptoms. IS = Internalizing Symptoms. P = Perfectionism. S = Sociability.

Table S10

Correlations of PDD scales' individual means with each other and with maladaptive personality traits in Study 2

Scale	Maladaptive trait domains					Daily situations and behaviors							
	NA	DET	ANT	DIS	PSY	PE	SS	W	S	AS	ES	IS	D
Positive Events (PE)	-.09	-.22	.15	.00	.08								
Social Stress (SS)	.33*	-.08	.09	.23	.25	.02							
Workload (W)	.36**	.13	-.04	.20	.26	-.06	.50***						
Sociability (S)	-.18	-.44***	.19	-.10	-.15	.72***	-.01	-.15					
Attention Seeking (AS)	.28*	-.26	.35**	.24	.00	.23*	.29*	.24*	.11				
Externalizing Symptoms (ES)	.33*	-.11	.26	.46***	.21	.04	.63***	.29*	.07	.27*			
Internalizing Symptoms (IS)	.58***	.19	.10	.25	.43**	-.24*	.52***	.58***	-.27*	.07	.46***		
Daydreaming (D)	.41**	.26	.17	.34*	.36**	-.15	.21	.13	-.10	.23*	.35**	.50***	
Perfectionism (P)	.18	-.03	-.20	-.07	-.04	.16	.01	.39***	.13	.14	-.13	.14	-.10

Note. $N = 77$ for correlations between daily situations and behaviors; $N = 54$ for correlations with maladaptive trait domains. NA = Negative Affectivity. DET = Detachment. ANT = Antagonism. DIS = Disinhibition. PSY = Psychoticism. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table S11

Medians and interquartile ranges for within-person correlations of PDD scales in Study 2

Scale	PE	SS	W	S	AS	ES	IS	D
Positive Events (PE)								
Social Stress (SS)	-.19 [-.35, .01]							
Workload (W)	-.01 [-.17, .21]	.15 [-.01, .35]						
Sociability (S)	.51 [.38, .66]	-.16 [-.29, -.01]	-.06 [-.26, .16]					
Attention Seeking (AS)	.28 [.06, .46]	-.06 [-.18, .09]	.06 [-.07, .23]	.24 [.04, .43]				
Externalizing Symptoms (ES)	-.13 [-.26, .00]	.26 [.02, .51]	.13 [-.01, .30]	-.11 [-.21, .05]	.02 [-.12, .21]			
Internalizing Symptoms (IS)	-.41 [-.58, -.25]	.31 [.10, .49]	.27 [.12, .46]	-.44 [-.60, -.21]	-.07 [-.39, .07]	.32 [.14, .48]		
Daydreaming (D)	-.18 [-.34, -.01]	.05 [-.09, .25]	.07 [-.05, .28]	-.20 [-.42, -.06]	-.08 [-.24, .09]	.09 [-.09, .29]	.32 [.13, .53]	
Perfectionism (P)	.21 [.04, .38]	-.02 [-.16, .12]	.23 [.01, .43]	.20 [.03, .39]	.24 [.06, .40]	.03 [-.18, .16]	-.08 [-.28, .14]	-.04 [-.15, .19]

Note. On average, sample size for each distribution of within-person correlations was $M = 69.7$ ($Range = 64-74$). Missings are due to cases with within-person variance equaling zero.

Table S12

Descriptive statistics and reliability of PDD scales in Study 3

<i>Scale</i>	<i>M</i>	<i>SD</i>	<i>ICC</i>	<i>Rel_{within}</i>	<i>Rel_{between}</i>
Positive Events	1.07	0.73	.42	.62	.92
Social Stress	0.23	0.42	.32	.59	.91
Workload	0.79	0.95	.50	.75	.93
Sociability	1.22	0.76	.38	.61	.83
Attention Seeking	0.39	0.53	.41	.37	.56
Externalizing Symptoms	0.29	0.48	.31	.70	.55
Internalizing Symptoms	0.78	0.69	.47	.77	.87
Daydreaming	0.42	0.66	.57	.69	.95
Perfectionism	1.25	0.84	.36	.60	.67

Note. Study 3 was based on data from 35 participants and 705 diaries. To ensure comparability of descriptive statistics between studies, PDD items were rescaled to a theoretical range from 0 to 3. ICC = Intraclass correlations coefficient. Rel = Reliability. In contrast to Study 1 and 2, we used the within- and between-person covariance matrix (instead of the polychoric correlation matrix) to estimate reliability.

Table S13

Correlations of PDD scales' individual means with each other in Study 3

Scale	PE	SS	W	S	AS	ES	IS	D
Positive Events (PE)								
Social Stress (SS)	-.26							
Workload (W)	-.22	.45**						
Sociability (S)	.61***	.02	.28					
Attention Seeking (AS)	.43**	.08	.22	.49**				
Externalizing Symptoms (ES)	.12	.54***	.40*	.39*	.19			
Internalizing Symptoms (IS)	-.36*	.70***	.60***	-.00	-.12	.65***		
Daydreaming (D)	-.12	.52**	.20	-.08	.10	.44**	.65***	
Perfectionism (P)	.35*	.03	.18	.45**	.02	.19	.07	.01

Note. $N = 35$. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table S14

Medians and interquartile ranges for within-person correlations of PDD scales in Study 3

Scale	PE	SS	W	S	AS	ES	IS	D
Positive Events (PE)								
Social Stress (SS)	-.19 [-.35, .03]							
Workload (W)	.05 [-.10, .40]	.14 [-.01, .46]						
Sociability (S)	.56 [.45, .63]	-.14 [-.30, .02]	-.07 [-.25, .19]					
Attention Seeking (AS)	.31 [.14, .49]	.04 [-.16, .19]	-.01 [-.15, .16]	.22 [.09, .41]				
Externalizing Symptoms (ES)	-.02 [-.20, .16]	.38 [.19, .62]	.13 [.01, .34]	.02 [-.13, .16]	.06 [-.07, .16]			
Internalizing Symptoms (IS)	-.33 [-.58, -.12]	.27 [.11, .52]	.20 [-.01, .36]	-.31 [-.50, -.04]	-.08 [-.21, .09]	.44 [.15, .62]		
Daydreaming (D)	-.08 [-.32, .18]	.07 [-.06, .22]	-.15 [-.31, .12]	-.14 [-.30, .09]	-.08 [-.20, .23]	.13 [-.05, .35]	.27 [.02, .50]	
Perfectionism (P)	.35 [.08, .60]	-.03 [-.34, .27]	.40 [.11, .58]	.16 [-.02, .50]	.14 [.03, .49]	.16 [-.17, .35]	-.03 [-.30, .34]	.01 [-.27, .36]

Note. On average, sample size for each distribution of within-person correlations was $M = 32.2$ ($Range = 27-35$). Missings are due to cases with within-person variance equaling zero.

Panel A

Panel B

Figure S1. Results of Multilevel Exploratory Factor Analyses (MEFA) for 11 selected situational items (Panel A) and 19 selected behavior items (Panel B). The MEFA was based on the full set of 20 situational and 53 behavior items, respectively. Solid paths represent substantially positive loadings ($> .30$); dashed paths represent substantially negative loadings ($< -.30$). Circles on the left side represent within-person factors; circles on the right side represent between-person factors. Residual variances of items are omitted. Outwardly directed arrows should indicate that factors had additional marker items that were not selected.