Decentering Attenuates the Associations of Negative Affect and Positive Affect With Psychopathology

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Abstract
Theory on decentering—an observer perspective on one's ongoing internal experiences—suggests that decentering may be a protective factor against extreme affective states in predicting psychopathology. The current studies were the first to empirically test this, using multiple measures of decentering to capture two distinct components. Across three student samples and two clinical samples, we investigated whether trait decentering moderated the relationship of negative affect and positive affect with a variety of internalizing symptoms, as well as with narcissism, mania, and anhedonia. Greater decentering attenuated the associations of negative affect with dysphoria and panic symptoms, in both cross-sectional (Study 1) and ecological momentary assessment (Study 2) designs. Exploratory analyses in a single sample revealed that positive affect interacted with decentering to predict anhedonia and narcissism symptoms. Implications are discussed for understanding the effects of decentering on psychopathology and refining interventions, as well as the conceptualization and assessment of decentering.

Affective traits—and particularly trait negative affect—are powerful determinants of mental health and psychological adjustment. However, elevated negative affect does not invariably lead to psychological distress; rather, a person's response to their affect may predict whether extreme levels of affect undermine mental health. In the current research we explore *decentering*—a specific response to or perspective on one's affective/cognitive experiences—as a potentially critical moderator of the mental health consequences of negative and positive affect, testing whether decentering measures moderate affect-psychopathology relationships.

Trait Affect and Psychopathology

Affect is a central part of human experience that helps guide approach-avoidance responses and shapes cognition (Watson, Wiese, Vaidya, & Tellegen, 1999). Two broad dimensions of affective experience have been identified, each of which may be conceptualized and assessed as transitory mood states or as relatively stable personality traits. Negative affect (NA) refers to the subjective experience of an array of negative emotions (e.g., fear, anger, sadness, guilt), whereas positive affect (PA) refers to numerous positive emotions (e.g., joy, excitement, confidence; e.g., Watson & Naragon-Gainey, 2014). They are distinct dimensions, with modest negative or nonsignificant associations when assessed as traits (e.g., Tellegen, Watson, & Clark, 1999). NA and PA are closely associated with the personality traits neuroticism and extraversion, respectively, wherein NA and PA are subsumed in these broader traits (e.g., Watson & Naragon-Gainey, 2014). In this study, we chose to focus on trait affect, because this subjective feeling-state component of personality—rather than associated behaviors or attitudes—better captures the internal experiences from which one typically decenters.

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A large body of research over the past several decades has established the links between trait affect and psychopathology, with generally robust findings across clinical and nonclinical samples. Trait NA is elevated in many types of psychopathology (e.g., Brown, Chorpita, & Barlow, 1998; Watson & Naragon-Gainey, 2014), as it is closely aligned with the experience of "general distress" or demoralization that is pervasive among those with psychopathology (Naragon-Gainey, Prenoveau, Brown, & Zinbarg, 2016). Within the internalizing disorders (i.e., mood and anxiety disorders), the distress disorders (e.g., depression, generalized anxiety disorder, posttraumatic stress disorder) have particularly strong associations with NA, whereas its association with the fear disorders (e.g., specific phobia, social anxiety, panic disorder, agoraphobia) tends to be more moderate in magnitude (Brown et al., 1998; Mineka, Watson, & Clark, 1998; Watson & Naragon-Gainey, 2014).

In contrast, trait PA shows more specificity in its associations with different types of psychopathology, and its primary associations tend to be weaker. *Low* PA is relatively specific to depression and to social anxiety, with inconsistent or weak associations with other internalizing symptoms (Brown et al., 1998; Mineka et al., 1998; Watson & Naragon-Gainey, 2014). In particular, low PA is related to anhedonia, a transdiagnostic symptom that entails decreased enjoyment of pleasurable experiences in general or in specific domains (e.g., social, physical, etc.) and often leads to a failure to engage in pleasant activities (Shankman et al., 2014).

Researchers have begun investigating pathological outcomes associated with *high* PA, and a growing body of findings indicates that it is related to mania symptoms and bipolar disorder (e.g., Fulford, Johnson, & Carver, 2008; Stanton, Gruber, & Watson, 2017; Watson & Naragon-Gainey, 2014). PA also appears to be relevant to narcissism, as attention-seeking symptoms underlying narcissism (e.g., Wright et al., 2013) are linked to higher levels of PA (Stanton, Stasik-O'Brien, Ellickson-Larew, & Watson, 2016). However, narcissism is a heterogeneous construct, and different types of narcissism may relate differently to PA. Specifically, grandiose narcissism (i.e., narcissism characterized by aggression, dominance, and manipulativeness) is generally associated with elevated levels of PA and related traits, though results are somewhat mixed (Fulford et al., 2008; Giacomin & Jordan, 2016; Miller et al., 2011; Rhodewalt, Madrian, & Cheney, 1998; Stanton et al., 2016). In contrast, vulnerable narcissism (i.e., narcissism characterized by feelings of distress and inferiority) is generally negatively associated with PA and related constructs and is positively associated with NA (Fulford et al., 2008; Giacomin & Jordan, 2016; Rhodewalt et al., 1998).

Decentering as a Moderator of Affect-Psychopathology Relationships

It is likely that numerous moderators, both dispositional and situational, interact with one's level of trait affect to predict mental health outcomes. One such plausible moderator is decentering,[1] which may be defined as a detached, observer perspective on one's ongoing internal experiences (e.g., Bernstein et al., 2015; Lau et al., 2006; Naragon-Gainey & DeMarree, 2017; Teasdale et al., 2002). Low decentering—that is, immersion in and attachment to current mental experiences—is associated with a broad range of psychological symptoms (see Bernstein et al., 2015, for a review), though most studies are limited in focus to depression and anxiety. Decentering is a key skill taught in numerous therapies, and several studies found that it is a transdiagnostic mediator of symptom change and quality of life improvement during treatment (Bieling et al., 2012; Hayes-Skelton, Calloway, Roemer, & Orsillo, 2015; Hoge et al., 2015). Theoretically, when individuals view their affective experiences from a decentered perspective, their emotions and thoughts should less strongly determine their subsequent responses and behaviors, allowing for greater capacity for adaptive self-regulation and healthy functioning. Of note, decentering is a process that is typically assessed as an individual difference, such that scales measure one's general tendency to decenter (Bernstein et al., 2015). But like many psychological traits, decentering has a stable component *and* varies over time and situations; in other words, both individual differences (natural or trained abilities, tendencies, habits) and transient influences (context, mood, physical state, etc.) contribute to one's level of state decentering at any given time.

Several articles offer preliminary support for the idea that decentering may moderate the association between prepotent tendencies (such as levels of trait affect) and adaptive outcomes generally. First, Feltman, Robinson, and Ode (2009) examined the relationship between neuroticism (which is closely related to trait NA, as described earlier) and two of its maladaptive consequences—trait anger and depressive symptoms. They found that these relationships were attenuated among people who scored high on a trait mindfulness measure.[2] Similarly, Penner and colleagues (2015) found that the prospective association between trait anxiety and subsequent distress among caregivers for cancer patients was reduced in individuals with high levels of self-distancing—a construct closely related to decentering (Bernstein et al., 2015). Last, Papies, Pronk, Keesman, and Barsalou (2015) reported that a decentering exercise decreased the impact of people's drives (sexual motivation or hunger) on their subsequent drive-relevant responses.

These findings are consistent with the idea that increases in decentering and related constructs can reduce rigid responding elicited by dispositional (neuroticism, trait anxiety, trait sexual motivation) or situational (hunger) inputs into judgments and behavior. However, no studies have examined whether decentering may attenuate the well-documented associations between trait affect and psychological symptoms. Furthermore, recent work (described next) has hypothesized multiple decentering-related constructs, and no previous studies have examined these separate constructs with regard to the consequences of affective traits or states.

Decentering-Related Constructs

Bernstein and colleagues (2015) proposed three distinct components of decentering in their metacognitive process model of decentering-related constructs. The first component is *meta-awareness*, which represents a person's awareness of his or her current psychological experience (i.e., thoughts and feelings) and is a necessary precondition for the other processes. They labeled the two more active components *disidentification from experience* and *reduced reactivity to thoughts* (Bernstein et al., 2015). Disidentification from experience entails relating to one's thoughts and feelings in an objective, distant manner, whereas reduced reactivity to thoughts describes the decreased impact of one's thoughts and feelings on subsequent responses.

In our own work, we empirically characterized existing measures of decentering-related constructs (specifically, decentering and defusion).[3] Notably, we found that the convergent validity of these five measures was quite poor (mean *r* across several student samples = .29, mean *r* in a clinical sample = .47), and measure-specific variance appeared to contribute to (but not completely account for) these low correlations. However, when we examined the structure of these measures using methods that allowed us to remove scale-specific variance, we were able to identify two underlying factors, each marked by a subset of items (Naragon-Gainey & DeMarree, 2017). Across four independent samples, these factors roughly mapped onto the two active components of Bernstein and colleagues' (2015) model: The factor we labeled *Observer Perspective* (OP; standardized confirmatory factor loadings across samples = .31 to .75) corresponds with their disidentification from experience, and our *Reduced Struggle With Inner Experience* (RS; standardized confirmatory factor loadings across samples = .34 to .77) factor is similar to their reduced reactivity to thoughts.

Of note, we found distinct correlates for these two moderately associated factors, wherein they related differently to facets of mindfulness, emotion regulation, personality traits (see also Latzman & Masuda, 2013), and perseverative thought. For example, OP and RS were both strongly negatively related to neuroticism (though RS much more so), and both were weakly to moderately positively associated with extraversion and conscientiousness. However, agreeableness and openness to experience were more strongly positively associated with OP, with moderate correlations. Of particular relevance to the current study, OP was more strongly correlated with trait PA than was RS, whereas RS was more strongly correlated with trait NA. In fact, RS was so strongly associated with NA, psychopathology, and related constructs as to raise questions about the discriminant validity of RS measures. Although our analysis was limited by the content and construct validity of available decentering measures, it provides initial empirical support for Bernstein et al.'s conceptualization of decentering and its components.

There are reasons to believe that both of the active decentering-related constructs (OP and RS) might lead to less rigid responding to affective experiences. The psychological distance associated with OP should facilitate a number of relevant regulatory processes (for a review, see Kross & Ayduk, 2011). For example, it might directly decrease the intensity of the emotional experience or allow one to focus on the broader context, facilitating reappraisal processes that can change the emotional experience (cf. Gross, 2015). Indeed, our previous work found that OP was moderately correlated with self-reported habitual use of reappraisal (Naragon-Gainey & DeMarree, 2017). Furthermore, the broadened attentional focus associated with OP may lead to a consideration of other attitudes, goals, and desires, and consequently responses will stem from a larger set of factors than just the salient emotional state.

RS should also be associated with adaptive reactions to affective experiences (Bernstein et al., 2015; Naragon-Gainey & DeMarree, 2017). Low levels of RS are related to experiential avoidance (i.e., negatively evaluating one's internal states or attempting to control them), as well as to self-reported habitual use of expressive suppression (Naragon-Gainey & DeMarree, 2017). Trying to eliminate unwanted internal experiences can paradoxically strengthen their frequency and intensity, increasing psychological distress and symptoms over time (S. C. Hayes, Strosahl, & Wilson, 2012; Wenzlaff & Wegner, 2000). In contrast, accepting unwanted internal experiences and "letting go" of the struggle with them is associated with psychological well-being (e.g., S.C. Hayes et al., 2012). Thus, high levels of RS should facilitate the natural resolution of extreme affective experiences over time and free up cognitive resources to focus on other goals than trying to control one's internal states.

The Present Research

In the current studies, we investigated whether decentering-related constructs mitigate the typical maladaptive consequences (i.e., psychological symptoms) of extreme affect. This question was tested in five samples, including clinical samples and unselected student samples; we note that most of these datasets, with the exception of Study 1 Student Sample 3, were initially collected for other purposes (Naragon-Gainey & DeMarree, 2017; Naragon-Gainey, McMahon, Park, Kline, & Chacko, 2017), and thus the secondary data analyses presented here were limited to measures included in the original studies. As described earlier, trait NA is most consistently related to internalizing symptoms, and in particular to depression and other distress disorders. Consequently, we examined dysphoria (which captures the distress experiences common in depression) as our primary outcome, but also examined symptoms characteristic of other forms of psychopathology to explore the range of symptoms to which decentering applies. Because dysphoria represents the influence of NA across a variety of situations, we expected that the general dispositional tendency to decenter (i.e., trait decentering) would be particularly relevant. Specifically, we hypothesized that the typical positive relationship between NA and symptoms of dysphoria would be weaker as trait decentering increased. Worry symptoms—which underlie generalized anxiety disorder, another distress disorder—were not available in the Study 1 datasets but were included as an outcome in Study 2, with similar hypotheses as for dysphoria given the pervasive nature of worry and its close association with NA.

In addition, we explored how broadly the moderating influence of decentering would extend. First, we examined its effects on social anxiety and panic, both of which are fear disorders within the internalizing spectrum. It was not clear whether trait decentering would be sufficiently specific to the contexts relevant to these symptoms because panic and social anxiety are characterized by situationally constrained NA (i.e., in the context of physical sensations and social situations, respectively). In addition, these symptoms have a weaker relationship with trait NA, which might make it more difficult to detect a moderating influence. Consequently, the general tendency to engage in decentering may not strongly moderate the relationship between NA and these outcomes. Taken together, these four internalizing symptoms (i.e., dysphoria, worry, panic, and social anxiety) provide representation of distinct content focuses that vary in the extent to which they are contextually bound and they all highly prevalent (see descriptive statistics for each study), such that they provide a logical initial examination of the impact of

decentering across a range of internalizing disorders. Second, we explored whether decentering moderates the maladaptive consequences of PA, including those associated with high PA (e.g., manic, attention-seeking, and grandiose narcissistic tendencies) and low PA (e.g., general and social anhedonia, vulnerable narcissism). To our knowledge, no research has examined decentering from positive affective states, and the little research that has tested related constructs (e.g., mindfulness, self-distancing) and their influence on PA has produced mixed findings, with some studies finding effects that parallel those with NA, and some not (e.g., Kiken & Shook, 2014; Verduyn, Van Mechelen, Kross, Chezzi, & Van Bever, 2012).

Although we examined both PA and NA for each of the outcomes described later, we expected that if decentering moderates effects on a given set of symptoms, it would interact *specifically* with the type of affect that was relevant to the particular symptoms examined. That is, NA should interact with decentering for internalizing symptoms outcomes, and PA should interact with decentering for mania, narcissism, and anhedonia outcomes. However, some symptoms (i.e., dysphoria, social anxiety, vulnerable narcissism) have notable components of both NA and PA and therefore may show less specificity in the decentering by affect interactions.

Finally, we explored whether measures of the two decentering-related constructs characterized from existing measures—OP and RS—produced parallel or unique findings. In analyses, we included only the subset of decentering items that were strong and specific indicators of these two factors in a prior study (Naragon-Gainey & DeMarree, 2017) to enhance measurement reliability and validity. As reviewed previously, there are theoretical reasons to expect each component to moderate the affect-symptom association. Thus, in the absence of prior empirical work, we did not have specific differential predictions for OP versus RS, but we examined them separately to generate exploratory findings for use in future studies.

Study 1

Method

Participants. Four independent data sets are included in this study. Student Samples 1 and 2 and the Clinical Sample were first reported in Naragon-Gainey and DeMarree (2017), where analyses focused on the structure of decentering measures and correlates of decentering factors but did not examine affect-decentering interactions.

Student Sample 1. A total of 344 university students (154 male, 184 female, 1 other, 5 unreported), composing

Student Sample 2 in our original article, participated in partial completion of a course requirement. Participants were mostly White (202 White, 33 Hispanic, 38 Black, 6 American Indian, 10 Asian Indian, 60 Chinese, 9 Filipino, 7 Korean, 2 Vietnamese, 7 other Asian, 1 Native Hawaiian, 8 Pacific Islander, 4 unreported, multiple categories possible) and young (18–41 years, $M = 19.12$, $SD = 2.27$). In all, 36 participants (11%) reported a history of mental health care, and 17 participants (5%) stated that they were currently receiving therapy or taking psychiatric medication.

Student Sample 2. A total of 503 university students (258 male, 241 female, 1 other, 3 unreported), composing Student Sample 3 in our original article, participated in partial completion of a course requirement. Participants were mostly White or Chinese (239 White, 38 Hispanic, 36 Black, 6 American Indian, 24 Asian Indian, 130 Chinese, 8 Filipino, 2 Japanese, 33 Korean, 11 Vietnamese, 28 other Asian, 1 Native Hawaiian, 6 Pacific Islander, 3 unreported, multiple categories possible) and young (18–38 years, $M = 19.17$, $SD = 1.74$). In all, 55 participants (11%) reported a history of mental health care, and 23 participants (5%) stated that they were currently receiving therapy or taking psychiatric medication.

Student Sample 3. A total of 568 students (299 male, 267 female, 1 other, 1 unreported) participated in partial fulfillment of a course requirement. As in the other student samples, participants were diverse with respect to race and ethnicity (305 White, 48 Hispanic, 58 Black, 5 American Indian, 30 Asian Indian, 116 Chinese, 2 Filipino, 2 Japanese, 19 Korean, 10 Vietnamese, 23 other Asian, 2 Native Hawaiian, 7 Pacific Islander, 1 unreported, multiple categories possible), but not with respect to age (18–34 years, $M = 19.25$, $SD = 1.74$). In all, 46 participants (8%) reported a history of mental health care, and 25 participants (4%) stated that they were currently receiving therapy or taking psychiatric medication.

Clinical sample. A total of 221 clinically distressed participants completed this study. We recruited people who reported that they had been diagnosed with an anxiety disorder upon signing up for ResearchMatch, an online registry matching interested participants with university researchers. Because participants in this sample completed the study remotely (i.e., not in the lab with research team members present), we interspersed six validity items with extremely low or high base rates. Those who scored 2 SDs above the mean for the sum of the validity items were removed from analyses ($n = 10$; see Naragon-Gainey & DeMarree, 2017, for further detail about sample recruitment and validity items).

This left a final sample of 211 participants, predominantly consisting of White females (169 female, 36 male,

1 other; 195 White, 7 Hispanic, 12 Black, 6 American Indian, 5 from any Asian ethnicities, 1 Pacific Islander, multiple categories possible). The sample was diverse with respect to age ($M = 34.88$, $SD = 12.35$, range 18–70), employment status (43% full-time, 14% part-time, 19% unemployed and seeking work, 11% retired/not in need of work, 26% students, multiple categories possible), and annual income (52% of the sample earned $40,000 or less). Participants were relatively educated: 57% reported that their highest level of education was some college or a 4-year college degree, and 36% endorsed completing some graduate school or a graduate degree. The majority of the sample reported currently receiving therapy (73%) or psychopharmacology (84%). The most frequently reported diagnoses were unipolar depression (81%) and generalized anxiety disorder (80%), followed by social anxiety disorder (37%), panic disorder (34%), and posttraumatic stress disorder (29%).

Procedure. Student participants completed the study in one of three laboratory rooms, with three to seven visually divided workstations, using a desktop, laptop, or tablet computer. They received course credit. Clinical participants who met the eligibility criteria received a link through Research Match to complete the study online. They received a $10 Amazon.com gift card for their participation.

Measures. Here we list only those questionnaires relevant to the current study. These measures were presented in randomized order and were interspersed with other measures.

Trait affect. The Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988) is a self-report measure of both PA and NA, wherein a total of 20 mood terms are rated on 5-point intensity scale anchors. The trait versions of both scales were used in this study. Scores on these scales have shown strong internal consistency in diverse samples (αs = .79–.92). PANAS scores have good convergent and discriminant validity with other measures of affectivity, and adequate retest reliability after two months ($r = .59$; Watson & Clark, 1999).

Observer perspective. Items from the three questionnaires listed later loaded on an Observer Perspective (OP) factor in exploratory and confirmatory analyses. Although we administered complete measures, the analyses we report in this study use only those items from each measure that were identified in the latent variable analyses in Naragon-Gainey and DeMarree (2017) as strong and specific markers of each factor.

- Experiences Questionnaire (EQ). The EQ (Fresco et al., 2007) is an 11-item measure of decentering

guided by a mindfulness-based cognitive therapy framework, which includes identification with one's thoughts, nonreactivity to negative experiences, and self-compassion. Participants indicated the frequency with which each statement reflects their experiences on a 5-point scale (*never* to *all the time*). Fresco and colleagues (2007) demonstrated that EQ scores predict psychological distress (e.g., depression symptoms), distinguish depressed patients from healthy controls, and have good internal consistency (αs = .81–.84). In addition, EQ scores are responsive to Mindfulness Based Cognitive Therapy (MBCT) and CBT for depression (but not pharmacotherapy) and predict relapse following psychotherapy (Bieling et al., 2012; Fresco, Segal, et al., 2007).

- Toronto Mindfulness Scale—Decentering (TMS-D). The TMS was originally developed as a state measure (Lau et al., 2006) but was adapted to measure trait mindfulness (Davis et al., 2009). The TMS-D subscale is a 7-item measure of decentering. Items reflect an accepting and nonjudgmental observer perspective on one's thoughts. Participants indicated the extent to which statements reflect their daily experiences on a 5-point scale (anchored at *not at all* to *very much*). Davis and colleagues (2009) demonstrated that TMS-D scores are internally consistent (α = .85), and are associated with meditation experience and other mindfulness measures.

- Drexel Defusion Scale. The DDS (Forman et al., 2012) provides participants with a definition of defusion prior to asking them to report the extent to which they would be capable of defusion from each of a series of 10 hypothetical negative thoughts or feelings. Participants indicated the extent to which they would be able to defuse on a 6-point scale (*not at all* to *very much*). Forman and colleagues (2012) demonstrated that DDS scores had moderate reliability (αs = .80–.83), predict psychological distress (e.g., depression symptoms), and are associated with improvement over the course of psychotherapy.

Reduced struggle. Items from the two questionnaires listed later loaded on a factor we labeled Reduced Struggle With Inner Experience (RS) in both exploratory and confirmatory analyses. As for OP, the analyses we report use only those items from each measure that were included in the latent variable analyses in Naragon-Gainey and DeMarree (2017).

- Cognitive Fusion Questionnaire (CFQ). The CFQ (Gillanders et al., 2014) is a 7-item measure that reflects the extent to which people struggle with

or emotionally respond to their thoughts. Participants indicated the frequency with which each item was true of them on a 7-point scale (*never true* to *always true*). Gillanders and colleagues (2014) demonstrated that CFQ scores can predict psychological distress (e.g., depression symptoms) over and above other indicators, and scale scores have strong internal consistency (αs = .88–.93).

- Believability of Anxious Feelings and Thoughts (BAFT). The BAFT (Herzberg et al., 2012) is a 16-item measure of fusion with anxiety-related thoughts that operationalizes fusion as believing a series of (hypothetical) negative thoughts relevant to anxious feelings and sensations. Participants indicated the extent to which they would believe each thought on a 7-point scale (*not at all believable* to *completely believable*). Herzberg and colleagues (2012) reported good reliability (αs = .90–.91), and demonstrated that BAFT scores predict multiple forms of anxiety and are associated with improvement over the course of a 12-week online ACT intervention.

Symptom measures. The scales assessing internalizing symptoms were included in all four samples, whereas the scales assessing excessive or deficient PA (narcissism, mania, anhedonia) were administered in Student Sample 3 only.

- Inventory of Depression and Anxiety Symptoms (IDAS). This study included the Panic (8 items), Social Anxiety (5 items), and Dysphoria (10 items) subscales of the IDAS (Watson et al., 2007). The IDAS uses a 5-point Likert-type scale to assess symptoms over the past 2 weeks. Scores on these scales have strong internal consistency (αs = .80–.90; Watson et al., 2007). Scores on the IDAS also have shown good convergent and discriminant validity with diagnoses and self-report measures, as well as good short-term retest reliability in a psychiatric patient sample (Watson et al., 2007; Watson et al., 2008). Student Sample 3 also completed the 5-item Mania and 5-item Euphoria subscales of the IDAS-II (Watson et al., 2012), but only the Mania scale is included in analyses because it has shown stronger convergent validity than Euphoria with other measures of mania and bipolar disorder (Watson et al., 2012).[4]

- 7 Up Scale. The 7 Up 7 Down Inventory (Youngstrom, Murray, Johnson, & Findling, 2013) measures manic and depressive symptoms with 7 items in each scale; only the 7 Up Scale assessing mania was administered in this study. This inventory is a short form of the 73-item General

Behavior Inventory (GBI; Depue et al., 1981), and items were selected to increase the distinctiveness of the mania and depression scales. Participants in Student Sample 3 rated each statement on a 4-point Likert-type scale, with anchors at *never or hardly ever* and *very often or almost constantly.* Scores on the 7 Up Scale have demonstrated good internal consistency (αs = .81–.83), correlate highly with the full GBI Mania scale (r = .85–.88), and have strong criterion validity with relevant diagnoses and self-report symptom measures (Youngstrom et al., 2013).

- Super Brief Pathological Narcissism Inventory (SB-PNI). The SB-PNI (Schoenleber, Roche, Wetzel, Pincus, & Roberts, 2015) is a short form of the 52-item Pathological Narcissism Inventory (PNI; Pincus et al., 2009) that consists of two 6-item scales assessing grandiose narcissism and vulnerable narcissism. Items are rated using a 6-point scale, ranging from *not at all like me* to *very much like me.* As reported in Schoenleber et al. (2015), internal consistencies for these two scales were strong (αs = .83–.88) and the scales were moderately correlated (rs = .52–.56). The brief scales also showed the expected patterns of convergent and discriminant validity with other measures of narcissism and related constructs (Schoenleber et al., 2015).

- Personality Inventory for *DSM-5* (PID-5). The PID-5 (Krueger, Derringer, Markon, Watson, & Skodol, 2012) was developed to measure 5 higher-order traits and 25 lower-order traits particularly relevant to personality pathology as conceptualized in Section III of the *DSM-5*. The current study includes measures of symptoms associated with extreme PA. Two scales are related to narcissism (Attention Seeking—8 items; Grandiosity—6 items), and two are related to Anhedonia (Anhedonia—8 items measuring general anhedonia; Withdrawal—10 items measuring to social anhedonia). Items are rated on a 4-point Likert-type scale. These scales have demonstrated good internal consistency (αs = .72–.93) and strong convergent and discriminant validity patterns in prior studies (Krueger et al., 2012).

Data analysis. Analyses were conducted in MPlus 7.4, using maximum likelihood estimation with robust standard errors. All constructs were modeled as latent variables, with individual items from each scale as factor indicators. The OP and RS decentering factors were specified as in Naragon-Gainey and DeMarree (2017), including error covariances among decentering items from the same measure to account for measure-specific variance

(all other factors contained items from a single measure). Moderation was tested with the latent moderated structural equations method (LMS; Klein & Moosbrugger, 2000; Klein & Muthén, 2007), which removes measurement error from the interaction term, increasing the precision of estimates.

Because all analyses use item-level latent variables, not observed scale scores, internal consistency was assessed via model fit. Standard fit indices are not available with LMS, so we evaluated model fit with models that omit the interaction term (Klein & Moosbrugger, 2000). We used the following interpretive guidelines: The comparative fit index (CFI) should be near .95 or above for excellent fit and .90 to .95 for good fit (Hu & Bentler, 1999), the root mean square error of approximation (RMSEA) should be at or below .06 (Hu & Bentler, 1999), and the standardized root mean square residual (SRMR) should be at or below .08 (Browne & Cudeck, 1992). In cases where fit was poor, modification indices were examined to identify sources of model strain, although modifications were made only if they were theoretically justified.

Significant interactions were probed using Johnson-Neyman regions of significance (Bauer & Curran, 2005), a technique that identifies the range of values of the moderator (if any) for which the association between the predictor and outcome is significantly positive and significantly negative. The scale for latent variables is arbitrary and the mean is set to zero, so to enhance interpretability we reported standardized region of significance values for each decentering factor that represent standard deviation units above or below the mean level of decentering in that sample. To avoid interpreting interaction effects that are outside the range of measurement and therefore unlikely to be meaningful (A. F. Hayes, 2013), regions of significance that fell entirely outside the range of scores observed in that sample were omitted (reported as "None" in Table 1). In cases where a boundary value for the region of significance was identified but it was outside the range of observed data, we denoted this as "<Max" or ">Min" rather than specifying the out-of-range boundary value. We also reported the model R^2 and the incremental variance explained by statistically significant interactions. Given the large number of tests, we focused on replicable patterns across samples and measures whenever possible, rather than individual significant estimates.

Results

Preliminary analyses. We first examined the fit of each latent variable model, omitting the interaction terms to obtain fit indices. Across all four samples, models that included NA had a large modification index for the

Table 1. Latent Interactions of Trait Affect With Decentering Factors in Predicting Internalizing Symptoms (Study 1)

Interaction	Student Sample 1 (n = 341)		Student Sample 2 (n = 503)		Student Sample 3 (n = 568)		Clinical Sample (n = 211)	
	OP	RS	OP	RS	OP	RS	OP	RS
Outcome: Dysphoria								
1. NA	.56*** (.08)	.11 (.10)	.54*** (.06)	.08 (.08)	.85*** (.07)	.23* (.09)	.67*** (.10)	.23 (.22)
Decentering	-.45*** (.12)	-.88*** (.16)	-.18* (.08)	-.60*** (.09)	-.31*** (.07)	-.69*** (.09)	-.42*** (.13)	-.81** (.29)
Interaction	**-.15* (.07)**	**-.15** (.06)**	**-.16* (.07)**	**-.12** (.03)**	**-.20** (.07)**	**-.16** (.04)**	-.02 (.09)	.04 (.10)
Positive association with NA	<2.31	<-0.77	<2.38	<-0.86	<Max	<0.30		
Negative association with NA	None	None	None	>2.37	None	None		
2. PA	.08 (.13)	.13 (.08)	-.07 (.10)	.09 (.07)	-.15* (.08)	-.12* (.05)	-.23* (.11)	-.13 (.10)
Decentering	-.83*** (.16)	-.98*** (.15)	-.47*** (.12)	-.68*** (.08)	-.54*** (.11)	-.82*** (.08)	-.80*** (.16)	-.98*** (.20)
Interaction	.29 (.15)	.11 (.06)	-.08 (.13)	.07 (.05)	-.12 (.09)	**.11** (.04)**	.00 (.10)	-.05 (.10)
Positive association with PA						None		
Negative association with PA						<0.25		
Outcome: Panic								
1. NA	.37*** (.08)	.07 (.09)	.44*** (.07)	.15 (.08)	.62*** (.08)	.09 (.10)	.73*** (.13)	.11 (.26)
Decentering	-.24* (.13)	-.52*** (.15)	.07 (.06)	-.28*** (.08)	.00 (.10)	-.45*** (.09)	.09 (.17)	-.61* (.31)
Interaction	-.18 (.14)	**-.26** (.10)**	.05 (.07)	**-.13* (.06)**	.02 (.15)	**-.22*** (.07)**	-.24 (.07)	**-.28** (.10)**
Positive association with NA		<-0.59		<-0.14		<-0.47		<-1.18
Negative association with NA		None		None		>2.02		>0.78
2. PA	.11 (.10)	.18** (.07)	-.10 (.09)	.07 (.06)	-.09 (.07)	.00 (.05)	-.11 (.10)	.07 (.12)
Decentering	-.44*** (.13)	-.57*** (.11)	-.09 (.09)	-.39*** (.06)	-.22** (.09)	-.49*** (.06)	-.35*** (.16)	-.70*** (.15)
Interaction	.05 (.14)	.00 (.07)	-.18 (.14)	.14 (.08)	**-.16** (.06)**	.10 (.08)	.23 (.17)	**.25* (.12)**
Positive association with PA					None			>0.82
Negative association with PA					>0.71			None
Outcome: Social anxiety								
1. NA	.38*** (.08)	-.13 (.11)	.57*** (.07)	.03 (.11)	.71*** (.07)	.11 (.11)	.78*** (.15)	.11 (.39)
Decentering	-.28** (.09)	-.75*** (.13)	-.12 (.09)	-.60*** (.11)	-.14 (.09)	-.58*** (.09)	-.19 (.17)	-.94* (.52)
Interaction	-.16 (.11)	-.13 (.07)	-.05 (.09)	-.08 (.05)	-.06 (.09)	-.07 (.04)	.01 (.11)	.02 (.08)
2. PA	-.26* (.11)	-.05 (.09)	-.14 (.11)	.08 (.09)	-.12 (.08)	-.04 (.06)	-.05 (.15)	.15 (.16)
Decentering	-.35** (.12)	-.63*** (.10)	-.41** (.14)	-.63*** (.08)	-.35** (.12)	-.64*** (.07)	-.75*** (.20)	-1.19*** (.34)
Interaction	.08 (.12)	.10 (.06)	-.04 (.16)	.09 (.06)	-.17 (.11)	**.12* (.05)**	-.04 (.14)	-.07 (.12)
Positive association with PA						>1.32		
Negative association with PA						<-2.04		

Note: NA = negative affect; OP = Observer Perspective; PA = positive affect; RS = Reduced Struggle with Inner Experience. Unstandardized regression coefficients and *SEs* are shown for separate models with one decentering factor, one affect factor, and their interaction as predictors of each symptom outcome (48 models total). Significant interactions are bolded. Significant interactions are decomposed using the Johnson–Neyman approach to identifying regions of significance. These values represent the levels of decentering above and below which the specified affective predictor relates to a given criterion, and values have been standardized (i.e., standard deviation units around *M* = 0 for the decentering factors). "Max" indicates that the association is significant across the entire range of observed values of decentering in that sample.

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

covariance of the PANAS items "Scared" and "Afraid." Because these terms have highly similar meaning, their errors were allowed to covary in models with NA. After including this covariance, fit was good for all models in the three student samples (see Table A in the Supplemental Material available online). In the Clinical Sample, there was a large modification index for the PANAS PA terms "Excited" and "Enthusiastic," which both describe high-arousal and strongly valenced PA. Therefore, their error terms were allowed to covary in the Clinical Sample only. In this sample, fit was borderline to acceptable for CFI, but good for SRMR and RMSEA (see Table A in the online supplement). Most of the indices indicated good fit and no other sources of strain were apparent, so this model was retained.

Zero-order correlations among the latent variables in each sample may be found in the online supplement (Tables B–D). Across samples, internalizing symptoms were strongly intercorrelated (rs = .62 to .85) and OP and RS were strongly correlated (rs = .60 to .84), whereas PA and NA were unrelated or weakly related to one another (rs = −.05 to −.26). Internalizing symptoms ranged from moderately to strongly associated with decentering factors, with stronger associations with RS (rs = −.55 to −.88) than with OP (rs = −.17 to −.62). In addition, NA was strongly associated with internalizing symptoms (rs = .48 to .77) and with RS (rs = −.70 to −.82), whereas PA was more moderately associated with internalizing symptoms (rs = −.14 to −.28) and both decentering factors (rs = .25 to .57).

Correlations among latent variables representing symptoms of excessive or deficient PA in Sample 3 are also shown in Table D. Generally, pairs of measures putatively assessing the same construct showed good convergent validity (r between anhedonia and withdrawal = .73; r between two mania measures = .58), with the exception of the two grandiose narcissism measures (r = .22). Excluding these convergent correlations, associations among different dysregulated PA symptoms were more moderate in magnitude (rs = .15 to .67). Symptoms of excessive PA were generally significantly but rather weakly related to elevated PA (rs = .02 to .21), whereas vulnerable narcissism, anhedonia, and withdrawal had a negative association with PA (r = −.14 to −.42). Last, the symptoms had variable associations with RS (rs = |.12| to |.88|) and were weakly to moderately associated with OP (rs = |.04| to |.46|).

Dysphoria. Table 1 shows the results of moderation analyses predicting the primary outcome of dysphoria in all four samples. Separate regressions were run for trait NA or PA predicting dysphoria, moderated by one of the decentering factors (OP or RS), yielding four models in each sample. Both of the decentering factors significantly

moderated the association between trait NA and dysphoria in all three student samples (model R^2 = .441 to .814; incremental contribution of interaction = .016 to .063), but not in the Clinical Sample. In the three student samples, Johnson-Neyman regions of significance indicated that trait NA was more strongly positively associated with dysphoria symptoms as levels of decentering decreased. More specifically, at low to moderately high levels of OP and at relatively low levels of RS, NA significantly predicted dysphoria symptoms. These two interactions from Student Sample 3 (the largest n) are depicted in the top panel of Figure 1; patterns were very similar across samples.

To determine whether OP or RS was more responsible for the significant interaction in predicting dysphoria, we also ran analyses in all three student samples that included the main effects of both OP and RS, as well as each of their interactions with trait affect. In Samples 2 and 3, the interaction with RS remained significant (Bs = −.146 and −.188; ps < .05) but the interaction with OP was not significant (Bs = .047 and .077; ps > .40). In Sample 1, neither interaction term was significant (Bs = −.106 and −.137; ps > .16). These analyses suggest that the decentering variance that is unique to RS or the variance that the two decentering components share interact with NA to predict dysphoria symptoms.

When comparable models were conducted with PA interacting with decentering factors to predict dysphoria symptoms, only one effect (of 8) was significant. Because this was an isolated effect, we do not attempt to interpret it.

Other internalizing symptoms. Table 1 also shows the results of moderation analyses, directly parallel to those described earlier, predicting panic and social anxiety symptoms. From these analyses, a second consistent finding emerged—a significant interaction of trait NA with RS in predicting panic symptoms in all four samples (model R^2 = .401 to .615; incremental contribution of interaction = .060 to .156). The interaction pattern was very similar to the RS × NA interaction predicting dysphoria shown in the top panel of Figure 1: The positive association was stronger as decentering decreased and this association became nonsignificant as RS approached the mean. In addition, there was a significant (unanticipated) negative association between trait NA and panic at higher levels of RS in Student Sample 3 and the Clinical Sample. NA did not significantly interact with decentering to predict social anxiety in any of the samples.

Of the 16 models that included trait PA predicting panic or social anxiety, three significant interaction terms that were found only in single samples emerged; that is, none of the interactions involving PA occurred
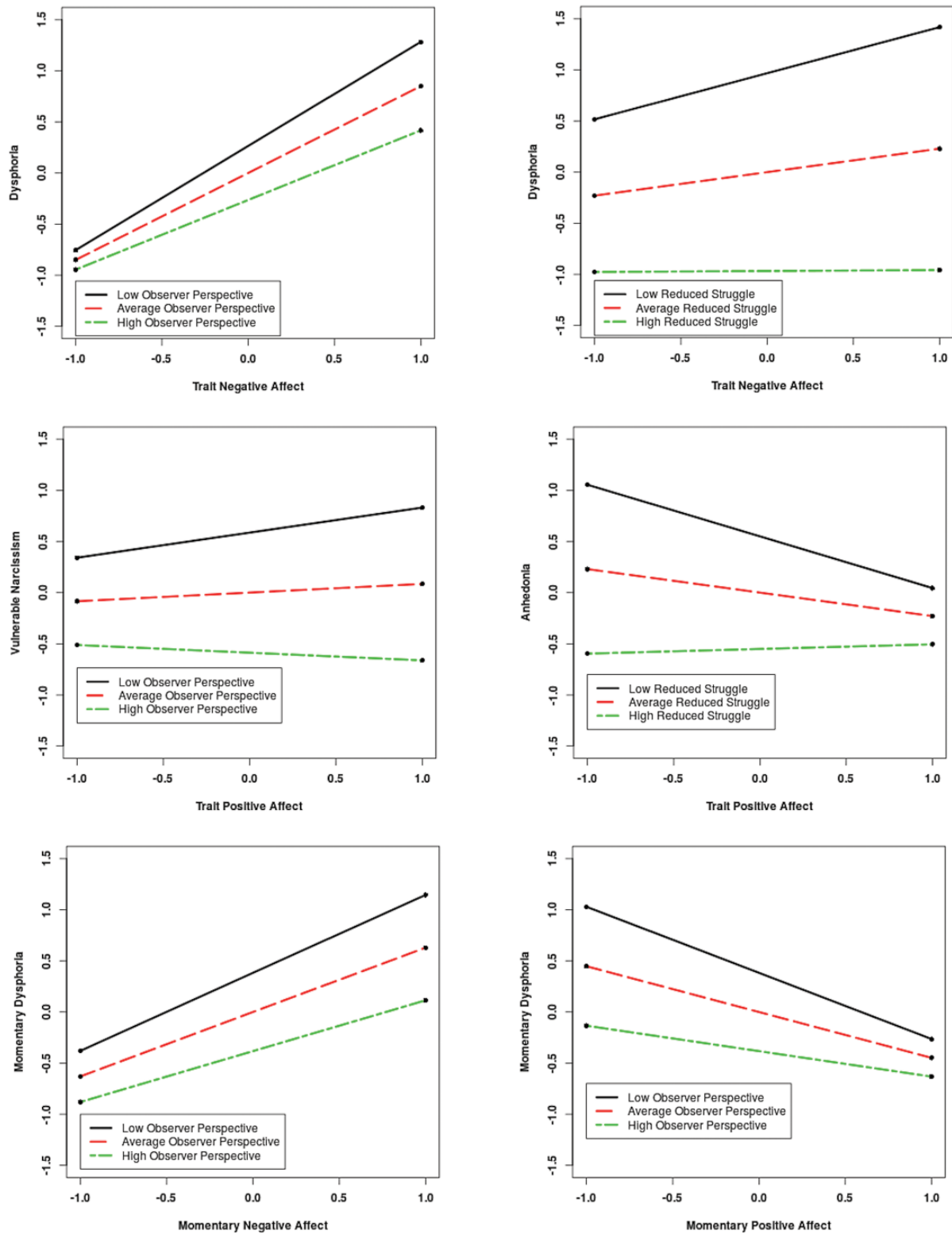
Fig. 1. Depiction of simple slopes of selected unstandardized interactions between affect and decentering (OP or RS), with slopes shown at the mean of decentering and 1.5 *SD*s above and below the mean. The top and middle panels are from Student Sample 3, whereas the bottom panel shows ecological momentary assessment data from Study 2.

Table 2. Latent Interactions of Trait Affect and Trait Decentering in Predicting Symptoms Characterized by Excessive or Deficient Positive Affect (Study 1)

Interaction	OP	RS	OP	RS
Outcome: Mania	IDAS Mania		7 Up	
1 NA	.50*** (.06)	.08 (.09)	.19*** (.05)	−.02 (.07)
Decentering	.02 (.07)	−.38*** (.08)	.15** (.06)	−.16* (.06)
Interaction	−.05 (.08)	−.03 (.04)	.08 (.05)	.03 (.03)
2. PA	.07 (.06)	.14** (.05)	.08 (.04)	.15*** (.03)
Decentering	−.22** (.08)	−.46*** (.06)	.02 (.05)	−.16*** (.05)
Interaction	−.06 (.07)	.09 (.05)	−.05 (.04)	−.01 (.05)
Outcome: Grandiose Narcissism	PID-5 Grandiosity		SB-PNI Grandiosity	
1. NA	.18*** (.05)	.11 (.08)	.38*** (.06)	.09 (.08)
Decentering	.19** (.07)	.00 (.06)	.13** (.08)	−.25*** (.06)
Interaction	**.15*** (.06)	.04 (.04)	−.03 (.08)	.06 (.04)
Positive association with NA	>−0.86			
Negative association with NA	None			
2. PA	.07 (.06)	.13** (.06)	.23*** (.06)	.29*** (.05)
Decentering	.06 (.07)	−.07 (.04)	−.16* (.08)	−.33*** (.05)
Interaction	−.07 (.05)	−.07 (.06)	.01 (.07)	.09 (.04)
Outcome: Other Narcissism	SB-PNI Vulnerability		PID-5 Attention–Seeking	
1. NA	.79*** (.09)	.04 (.13)	.21*** (.05)	.09 (.07)
Decentering	−.31*** (.10)	−.81*** (.12)	.09 (.06)	−.08 (.05)
Interaction	.03 (.10)	.03 (.05)	.00 (.07)	−.03 (.04)
2. PA	.09 (.10)	.09 (.06)	.20*** (.05)	.21*** (.04)
Decentering	−.70*** (.13)	−.84*** (.09)	−.11* (.05)	−.16*** (.04)
Interaction	**−.19*** (.09)	−.07 (.06)	**−.11*** (.04)	−.09 (.05)
Positive association with PA	<−0.91		<1.08	
Negative association with PA	None		None	
Outcome: Anhedonia	PID-5 Anhedonia		PID-5 Withdrawal	
1. NA	.37*** (.05)	.02 (.08)	.26*** (.05)	−.01 (.08)
Decentering	−.16* (.07)	−.40*** (.07)	.03 (.06)	−.28*** (.07)
Interaction	−.07 (.09)	−.05 (.03)	**.12*** (.06)	**.11*** (.04)
Positive association with NA			>−1.88	>2.13
Negative association with NA			None	<−1.46
2. PA	−.29*** (.06)	−.23*** (.05)	−.25*** (.05)	−.14*** (.04)
Decentering	−.15* (.07)	−.39*** (.04)	.04 (.06)	−.23*** (.04)
Interaction	.03 (.08)	**.20*** (.04)	−.10 (.05)	**.09*** (.04)
Positive association with PA		>1.99		None
Negative association with PA		<0.75		<0.63

Note: *N* = 568. IDAS = Inventory of Depression and Anxiety Symptoms; NA = negative affect; OP = Observer Perspective; PA = positive affect; PID-5 = Personality Inventory for *DSM-5*; RS = Reduced Struggle With Inner Experience; SB-PNI = Super Brief Pathological Narcissism Inventory. Unstandardized regression coefficients and *SE*s are shown for each model (32 models total). Significant interactions are bolded and were decomposed using the Johnson-Neyman approach to identifying regions of significance. These values represent the levels of decentering above and below which the specified affective predictor relates to a given criterion, and values have been standardized (i.e., standard deviation units around *M* = 0 for the decentering factors).
*p < .05. **p < .01. ***p < .001.

in two or more samples. Because of their inconsistency, we do not interpret these as robust effects.[5]

Symptoms of dysregulated PA. Table 2 shows the results of analyses predicting symptoms of excessive and deficient PA in Student Sample 3. Except for the case of vulnerable narcissism and attention seeking, all other constructs were assessed with two measures (analyzed

separately) to provide an internal replication of results within this sample (though note the poor convergence of the two grandiose narcissism measures described previously). As before, we examined NA and PA in interaction with each decentering factor in separate models. None of the four moderation models predicting manic symptoms had significant interaction terms, although significant negative main effects of decentering generally emerged.

There was a significant interaction of NA with OP in predicting grandiose narcissism (model R^2 = .079; incremental contribution of interaction = .032) wherein the positive association between NA and grandiose narcissism was stronger at higher levels of decentering (i.e., opposite in direction to other significant interactions in this study). However, this effect was found for only one of the two grandiose narcissism measures (i.e., PID-5 Grandiosity).

For vulnerable narcissism and attention-seeking symptoms, OP was a significant moderator such that trait PA and symptoms were more strongly positively associated at lower levels of decentering, consistent with hypotheses. These models accounted for .160 and .066 of the variance in symptoms, respectively, with the interaction incrementally contributing .010 and .006. Similarly, the associations of PA with both types of anhedonic symptoms (general and social anhedonia/withdrawal) were moderated by RS in the expected manner: their negative association became stronger as values of RS decreased. The model R^2 was .567 and .230, respectively, and the interaction term uniquely accounted for .086 and .020 of the variance. Graphs of the interactions of PA × OP predicting vulnerable narcissism and general anhedonia are shown in the middle panels of Figure 1. In addition, the measure of social anhedonia (PID-5 Withdrawal) was significantly predicted by an interaction between NA and both decentering factors in a counterintuitive direction, wherein their positive association was stronger at higher levels of decentering (R^2 = .102 and .222; incremental contribution of the interaction = .019 and .034). This finding was not replicated in the measure of general anhedonia.

Discussion

We examined whether decentering-related constructs moderate the relationship between trait affect and maladaptive consequences of this affect. First, consistent with our focal hypothesis, OP and RS moderated the association between NA and dysphoria symptoms in three of four samples (only the Clinical Sample did not show this pattern). Specifically, the relationship between NA and dysphoria symptoms was attenuated as decentering increased. In addition, exploratory analyses identified possible extensions and boundary conditions of this effect. One consistent unexpected finding emerged: in all four of the samples, RS moderated the association between NA and panic symptoms. Again, the positive relationship between NA and panic was attenuated as RS increased. No consistent effects emerged on social anxiety.

The dataset that included exploratory analyses of maladaptive (deficient and excessive) PA provided some evidence of interactions between PA and decentering, but these were not very consistent across symptoms. Of the five significant interactions, four were in the expected direction, with PA more strongly predicting the relevant symptoms (in the appropriate direction, depending on outcome) when decentering was low. However, these results—and lack thereof—should be interpreted with caution, as the overall associations between PA and the symptoms measures included in this sample were relatively weak in magnitude. In other words, it is not clear from these data whether nonsignificant effects were due to a lack of meaningful moderation or due to a lack of overall effects to be moderated in the first place.

Together, these findings are largely consistent with models of decentering (Bernstein et al., 2015; Naragon-Gainey & DeMarree, 2017), as affect was less likely to predict affect-relevant psychological distress as trait levels of decentering increased. Furthermore, results point to the shared as well as nonshared effects of the different decentering-related constructs. For example, whereas both OP and RS moderated the relationship between NA and dysphoria, only RS consistently moderated the relationship between NA and panic. We discuss the relative predictive utility of these factors in greater detail in the General Discussion.

Study 1 offered compelling initial support for the beneficial impact of decentering-related constructs on affective consequences. However, Study 1 relied on cross-sectional data, limiting our ability to infer causation from the associations observed. People are not expected to decenter from the *overall pattern* of affect they experience (as indicated by trait levels of affect), but rather from specific affective experiences. In Study 2, we again measured the tendency to engage in decentering-related process at a trait level, but here we assessed *momentary* affect and psychological symptoms (i.e., dysphoria, panic, and social anxiety, as well as extending the examination to include worry) using an ecological momentary assessment (EMA) design. We expected to see the strongest interactions when predicting psychopathology that is most strongly linked to general NA: symptoms of dysphoria and worry (see, e.g., Naragon-Gainey et al., 2016).

It is important to note that EMAs generally have stronger ecological validity than retrospective trait measures, because individuals respond in their natural environment as the experience spontaneously occurs, rather than attempting to summarize over many (variable) past experiences (Stone, Schwartz, Broderick, & Shiffman, 2005; Walz, Nauta, & aan het Rot, 2014). Thus, this approach allows us to assess individuals' real-life, current levels of state affect and symptoms in a way that should be (a) more accurate than standard retrospective assessments that have a greater memory burden and are more subject to recall biases (Gorin & Stone, 2001; Stone et al., 1998),

and (b) reflective of the variability in affective experiences and symptoms across time and naturalistic contexts for each individual (Rush & Hofer, 2014; Walz et al., 2014). Furthermore, this within-person design allows us to make stronger inferences about the potential causal role that decentering plays in moderating the relationships between affect and psychological distress.

Study 2

Method

Participants. Adults in the local community were eligible for the study if they were currently receiving or seeking mental health treatment (no specific diagnosis required), had a smartphone for use in the EMA study, and did not have current psychosis, dementia, or a cognitive impairment. We recruited participants via online advertisements, local newspapers, and flyers in the community (e.g., at mental health centers, universities, coffee shops, and public meeting areas). A total of 163 participants completed the laboratory baseline study, and 145 (89%) enrolled in the follow-up EMA study.[6] Of these, 4 participants never submitted an EMA report, 5 participants had unusable data because they were missing more than 70% of the daily reports, and 1 participant was removed due to frequent invalid responding (i.e., completing most reports very quickly and with no variability in responses). After excluding these individuals from the data, the final sample consisted of 135 participants. Compliance for the EMA reports was good, as an average of 80% of the 30 EMA affect/symptoms reports were submitted and appeared to be valid (i.e., not completed extremely quickly, and submitted within 2 hours of the time the text was sent).

Of the 135 participants, most identified as female (97 female, 36 male, 2 other) and White (95 White, 12 Hispanic, 19 Black, 3 American Indian, 15 from any Asian ethnicity; multiple categories possible). The sample was diverse with respect to age (M = 30.40, SD = 11.85 years, range = 18 to 65). Most participants were employed part- or full-time or were university students (20% full-time, 30% part-time, 44% students; multiple categories possible), though a sizeable subgroup were unemployed (27%) and the remainder was retired/not in need of work (6%). Participants were relatively educated: 64% reported that their highest level of education was some college or a 4-year college degree, and 27% endorsed completing some graduate school or a graduate degree. The majority of the sample stated that they were currently receiving therapy (67%) or taking medication (58%) for a psychological concern at the time of the study. Based on the Anxiety Disorder Interview Schedule for *DSM-5* (Brown & Barlow, 2014) administered at the lab baseline session, the most common

diagnoses were generalized anxiety disorder (50%), social anxiety disorder (44%), persistent depressive disorder (30%), panic disorder (20%), and major depressive disorder (18%).

Procedure. Participants completed a 3- to 4-hour baseline assessment in the laboratory, which included decentering self-report measures, as well as other self-report measures, a semistructured interview, and a cognitive task (not included in the current study). They received $40 for their participation. At the end of the lab study, interested participants enrolled in the follow-up 10-day EMA study, and the research assistants explained the study procedure and example items to the participants. In addition, research assistants contacted the participants about 2 to 3 days into the EMA study to assist with any concerns or questions.

Starting the day after the baseline study and for 10 days in total, participants were sent text messages via SurveySignal (http://www.surveysignal.com; Hofmann & Patel, 2015). Each message contained a link to a questionnaire to be completed within one hour of receipt (though surveys completed within 2 hours were included in analyses). Three surveys assessing affect and symptoms were sent per day (30 in total). Two of these surveys were sent randomly between 9:30 a.m. and 5:00 p.m., with a minimum of 30 minutes in between the two surveys. The third affect and symptom questionnaire was sent at 9:00 p.m. each evening; this evening report also included an assessment of positive and negative events not analyzed here. In addition, participants completed daily event-contingent reports prompted by the occurrence of a strong emotional experience (not analyzed in the current study). Participants were compensated $1 for every EMA questionnaire they completed, and if they missed no more than two questionnaires between Days 1 and 5 or between Days 6 and 10, they received a $5 bonus for each 5-day period. Thus, depending on how many surveys they completed, participants were compensated up to $50 for the EMA portion of the study.

Measures. Given that the Experiences Questionnaire–Decentering subscale was a strong marker of OP and the Cognitive Fusion Questionnaire was a strong marker of RS in prior studies (Naragon-Gainey & DeMarree, 2017), these full scales were used as indicators of their respective decentering factors. The properties of these measures are described in detail in Study 1. To assess momentary affect and symptoms, we selected items from the PANAS and IDAS, respectively, as using the full scales would have been overly burdensome for participants given the frequent assessment design (see Study 1 for a description of the full measures). Specifically, three mood

terms were selected from the PANAS NA scale (i.e., upset, afraid, irritable) and "sad" was added, so as to cover various types of specific NA. Four mood terms from the PA scale (i.e., excited, interested, active, and strong) were also selected based on their broad coverage of content. Similarly, four high-loading items (based on Watson et al., 2007) were selected to broadly cover the content from each of four IDAS scales—Dysphoria, Social Anxiety, Panic, and Anxious Mood (i.e., Worry)—with the caveat that the items should be generally applicable throughout the day (for example, difficulty sleeping was excluded because it is generally not relevant during the daytime).

Data analysis. Multilevel analyses were conducted in MPlus 7.4 within a latent variable framework with robust maximum likelihood estimators, where repeated assessments of momentary affect and symptoms were nested within persons. To help account for nonrandomly missing EMA data and to improve estimate precision, we included the response to a question asking how likely the participant is to forget small daily tasks as an auxiliary missing data correlate (but this variable was not included in the model itself). All constructs were modeled as latent variables with items as indicators. Random intercepts (i.e., individual differences in levels of momentary symptoms and affect) and random slopes (i.e., individual differences in the regressions of momentary symptoms on momentary affect) were estimated, and no error covariances were specified as no factor contained indicators from multiple measures. The assessment occasion (i.e., 1–30) was included as a within-person covariate to account for linear trends over time.

Decentering was measured as an individual difference at baseline (Level 2) whereas affect was measured repeatedly (Level 1), so interactions were specified as cross-level interactions. Regions of significance were again calculated using the Johnson-Neyman method, with values converted to standard deviation units and truncated at values beyond the range of observed factor scores. Because standard fit indices and R^2 values are not available when random slopes are estimated, model fit was assessed in models with fixed slopes and no interaction term.

Results

Fit was good to excellent across all models: CFI = .942 to .972 (M = .960), RMSEA = .022 to .041 (M = .028), SRMR for the within-person model = .029 to .052 (M = .037), and SRMR for the between-person model = .031 to .079 (M = .060). Zero-order correlations among latent variables may be found in Table F of the online supplement; note that each symptom and affect was decomposed into two uncorrelated latent variables, representing within-person variance and between-person variance.

At the within-person level, internalizing symptoms were strongly associated with one another (rs = .38 to .84), NA was very strongly related to concurrent dysphoria and worry (rs = .81 and .87) but more moderately associated with the other symptoms (rs = .30 and .60), and PA was significantly associated with concurrent dysphoria and worry only (rs = −.42 and −.24). In addition, momentary PA and NA were moderately associated (r = −.32). At the between-person level, the decentering factors were strongly correlated (r = .75), and they were moderately related to between-person (i.e., overall) levels of internalizing symptoms (rs = −.18 to −.46).

High-intensity NA: dysphoria and worry. We ran four parallel models each examining dysphoria and worry—one of each combination of the two decentering constructs and PA/NA. Table 3 shows the results of the cross-level interaction models. In the models with dysphoria and worry symptoms as the outcomes, the interactions of momentary NA with both decentering factors were statistically significant. In addition, the interactions of momentary PA with both decentering factors were significant for dysphoria, but not for worry. As expected, the positive association between NA and dysphoria or worry was stronger as levels of decentering decreased, whereas the *negative* association between PA and dysphoria was stronger as levels of decentering decreased. The bottom panel of Figure 1 displays the interactions of OP with momentary NA and with momentary PA in predicting momentary dysphoria symptoms (the other significant interactions were very similar in pattern).

When both decentering factors were included in interaction with NA to predict dysphoria, only the RS interaction remained significant (B = −.08, p < .05), and neither decentering factor interaction with PA was significant (Bs = .05 and .06, ps > .25) once both were included. Finally, when we examined a model that included both decentering factors and their interactions with NA to predict worry, neither interaction remained significant (Bs = −.03, ps > .45).

Lower-intensity NA: panic and social anxiety. For panic and social anxiety, momentary NA significantly interacted with baseline RS, with a stronger positive association at lower levels of decentering. OP did not interact with NA or PA in predicting either symptom.

Discussion

Study 2 offered support for our predictions, advancing the findings from Study 1 in a number of key ways. Most notably, we again found that NA predicts dysphoria symptoms more weakly as both decentering constructs increase, although this finding was also observed with

Table 3. Latent Interactions of Daily Momentary Affect and Trait Decentering in Predicting Daily Momentary Internalizing Symptoms in a Clinical Sample (Study 2)

	Observer perspective	Reduced struggle
Outcome: Dysphoria		
1. NA	.63*** (.05)	.63*** (.05)
Decentering	−.30*** (.07)	−.21*** (.04)
Interaction	**−.10** (.04)**	**−.09*** (.03)**
Positive association with NA	<Max	<2.13
Negative association with NA	None	None
2. PA	−.45*** (.11)	−.45*** (.05)
Decentering	−.30** (.10)	−.26*** (.06)
Interaction	**.16** (.06)**	**.10** (.03)**
Positive association with PA	None	None
Negative association with PA	<1.98	<2.16
Outcome: Worry		
1. NA	.55*** (.05)	.55*** (.05)
Decentering	−.21** (.08)	−.22*** (.06)
Interaction	**−.06* (.03)**	**−.04* (.02)**
Positive association with NA	<Max	<Max
Negative association with NA	None	None
2. PA	−.26*** (.04)	−.25** (.04)
Decentering	−.27* (.11)	−.29*** (.07)
Interaction	.04 (.07)	.01 (.04)
Outcome: Panic		
1. NA	2.53*** (.38)	.26*** (.04)
Decentering	.05 (.20)	−.04 (.02)
Interaction	−.60 (.34)	**−.09*** (.02)**
Positive association with NA		<1.47
Negative association with NA		None
2. PA	−.07 (.06)	−.07 (.06)
Decentering	−.15* (.07)	−.12*** (.03)
Interaction	.00 (.08)	.00 (.04)
Outcome: Social anxiety		
1. NA	.14*** (.04)	.14*** (.04)
Decentering	−.20** (.06)	−.18*** (.05)
Interaction	−.05 (.03)	**−.05* (.02)**
Positive association with NA		>−1.28 and <0.64
Negative association with NA		None
2. PA	−.03 (.08)	−.03 (.07)
Decentering	−.11 (.06)	−.12* (.05)
Interaction	.18 (.10)	.06 (.06)

Note: N = 135. NA = negative affect; OP = Observer Perspective; PA = positive affect; RS = Reduced Struggle with Inner Experience. Unstandardized regression coefficients and *SE*s are shown (48 models total). Significant interactions are bolded and are decomposed using the Johnson-Neyman approach to identifying regions of significance. These values represent the levels of decentering above and below which the specified affective predictor relates to a given criterion, and values have been standardized (i.e., standard deviation units around $M = 0$ for the decentering factors). "Max" indicates that the association is significant across the entire range of observed values of decentering in that sample.

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

PA in Study 2. Furthermore, interactions between NA and both decentering constructs were significant predictors of worry, another symptom characterized by very strong levels of NA that occur in a wide range of situations. It is important that this study went beyond the cross-sectional, retrospective methods used in Study 1, as we examined state affect and state symptoms in daily life. These results demonstrate that trait decentering predicts the momentary, within-person relationship of NA with dysphoria and worry symptoms as they occur in daily life.

It is notable that the NA × Decentering interaction did not significantly predict dysphoria in the Clinical Sample in Study 1, which had between-person assessments of decentering and NA, but the interaction was present in a similar clinical sample when these variables were assessed in the moment. It is possible that a combination of small sample size, trait assessments of affect and symptoms, reduced between-person variability at the trait level, and random error may have inhibited the emergence of the interaction in Study 1. In Study 2, however, trait decentering weakened the link between momentary affect and psychological distress, even among those with relatively chronic, clinically elevated levels of distress.

The decentering-related construct of RS also predicted the NA-symptom relationship for panic and social anxiety. The panic finding parallels the between-participant effects observed in all four cross-sectional samples in Study 1. Again, this specificity speaks to the potential discriminant validity of the two decentering-related constructs examined in the current studies. It is also striking that RS broadly moderated within-person associations with all four symptom outcomes, whereas OP only interacted with the high intensity negative-affect symptoms of dysphoria and worry. Similarly, after including interactions with OP and with RS in the same analyses, only the NA × RS interactions significantly predicted dysphoria. Thus, RS may be particularly important for mitigating an array of consequences of momentary NA in daily life.

General Discussion

Across two studies and five independent samples, we tested the role of decentering-related constructs in mitigating the maladaptive psychological consequences of extreme affective states. Our primary prediction was that decentering would moderate the association between NA and dysphoria symptoms, given that dysphoria is associated with strong and pervasive NA that is not context-specific. Findings were largely consistent with this prediction, as increases in decentering scores were associated with decreases in the NA-dysphoria

association in four of our five samples, including three cross-sectional student samples and the clinical EMA sample, in which we also tested and observed parallel moderation on symptoms of worry.

In addition to this primary prediction, the present studies also explored possible extensions and boundary conditions. First, we examined other consequences of NA and found a consistent pattern of moderation of the NA—panic relationship by the decentering-related construct of RS. This finding did not extend to social anxiety. Second, we examined potential maladaptive consequences associated with deficient or excessive PA. We found the most consistent pattern on symptoms of low PA, as RS moderated the relationship between PA and anhedonia outcomes in both of the relevant analyses in the expected manner. Our results on symptoms of excessive PA were less consistent, however, with evidence of the predicted interaction for some narcissism measures but not others, and no significant interactions for manic symptoms. Third, interactions with NA were generally specific to internalizing symptoms, whereas interactions with PA were generally specific to symptoms of excessive or deficient PA.

Specificity of findings by symptom

One unexpected finding was the consistent and specific interaction between NA and RS on panic; the fact that we observed this interaction in all five samples indicates that it is likely robust. Cognitive theories of the development of panic disorder suggest a possible explanation, as problematic interpretations of internal experiences may be especially potent and proximal for the development of repeated panic attacks and panic disorder. For example, Clark's (1986) model states that repeated panic attacks are due to "catastrophic misinterpretations" of normal bodily sensations (e.g., "if my heart is beating quickly, I'm likely having a heart attack"; "if I'm a little short of breath, I may suffocate"). Similarly, there is a large body of evidence showing that anxiety sensitivity (i.e., fear of the consequences of anxiety-related bodily sensations) is associated with elevated negative affect and is cross-sectionally and prospectively linked to a number of symptoms, but particularly to panic symptoms (see Naragon-Gainey, 2010, for a meta-analysis). This misinterpretation and intolerance of panic sensations leads to greater physiological arousal as the body responds to a perceived threat, creating a vicious cycle between increased arousal and intensified perceptions of danger that can ramp up to a full-blown panic attack very quickly. The ability to decenter, as applied to fears and catastrophic thoughts about bodily sensations, may be critical in protecting against panic symptoms among those with high levels of NA by interrupting the feedback loop

described earlier (for a conceptually parallel finding in the mindfulness literature, see Vujanovic, Zvolensky, Bernstein, Feldner, & McLeish, 2007). Of note, the interaction in predicting panic was found for RS but not OP. RS is associated with decreased thought suppression (in this case, thoughts about catastrophic consequences of physical sensations), which might help to avoid rebound effects (Wenzlaff & Wegner, 2000) that can accelerate the vicious cycle described earlier.

The analyses focused on excessive or deficient PA symptoms were conducted in a single sample (though with two measures of most symptoms); thus, these results should be considered preliminary and require replication before strong conclusions are drawn. In addition, it is important to note that although the direction of associations between these symptoms and PA were as expected, the magnitude was generally quite weak (particularly for manic symptoms). These weak main effects—perhaps a result of sampling error or restriction of range—may have inhibited the emergence of interactions. And, as we discuss in subsequent sections, some features of the decentering measures are not ideal for assessing decentering from positive thoughts and feelings. Nonetheless, we found that individuals with low levels of PA were less likely to experience general or social anhedonia if they had higher levels of RS; similar to panic, this could be due to the paradoxical effect of trying to suppress or control unwanted thoughts (see "Clinical Implications" for further discussion of anhedonia).

OP mitigated the effects of high PA for attention-seeking symptoms and vulnerable narcissism, but not for the measures of grandiose narcissism. This may be due to the fact that vulnerable narcissists (and perhaps those high in attention seeking) have self-aggrandizing and entitled thoughts and feelings that coexist or alternate with contradictory feelings of low self-esteem and intense NA directed toward the self (e.g., Miller et al., 2011). This marked variability may decrease the believability of positive thoughts and feelings about the self when they do arise, facilitating greater ability and motivation to decenter from them. In contrast, those with tendencies toward grandiose narcissism are more consistent in their positive self-perceptions (Miller et al., 2011) and may "buy into" them more completely, precluding motivation for and ability to decenter from them.

Specificity of findings by decentering component

We also explored whether the decentering-related constructs of OP and RS would differentially or independently moderate the affect-symptom relationships. Only RS interactions predicted panic and anhedonic

symptoms, whereas only OP interactions predicted some types of narcissism. In contrast, for dysphoria and worry symptoms, both OP and RS predicted similar effects when considered in isolation. When considered in parallel, however, in some cases RS remained as the only significant moderator, whereas in other outcomes or other samples, neither interaction remained significant. This inconsistency makes it difficult to draw strong conclusions about the relative contribution of the two decentering-related constructs because some results are consistent with RS being the proximal moderating variable and other results suggest that the variance shared by OP and RS might be most responsible for these effects. Furthermore, the meaning of differential effects of measure of the two decentering-related constructs cannot be fully understood without also examining their construct validity.

Specifically, there are potential concerns with the validity of these measures—and of these constructs—that could qualify or shift the interpretation of our results. The first is whether RS truly represents decentering (see also Naragon-Gainey & DeMarree, 2017). Recall that we defined decentering "as a detached, observer perspective on one's ongoing internal experiences," consistent with the broader literature (e.g., Bernstein et al., 2015; Lau et al., 2006; Naragon-Gainey & DeMarree, 2017; Teasdale et al., 2002). Thus, reductions in struggling with or attempting to control one's thoughts—although they might be assisted by decentering and are clearly relevant to numerous types of psychopathology—do not appear to fit extant definitions of decentering. Instead, they might reflect a consequence of decentering or perhaps even a related construct such as experiential avoidance.

The second issue has to do with the content of the items that measure OP and RS. As described in our examination of these scales (Naragon-Gainey & DeMarree, 2017, Table 1), many of the items—including *all* of the items on the RS factor—reflect responses to or perspectives on negative experiences. This is despite the fact that definitions of decentering are silent as to the valence of the experience from which people could decenter. Thus, in analyses involving psychological distress as predicted by NA, the relatively superior predictive utility of RS could reflect a specificity of measurement effect, rather than an effect of RS per se. That is, much like matching measures of attitudes or personality and behavioral criteria in their specificity can increase predictive utility (e.g., Fishbein & Ajzen, 1975; Paunonen, Haddock, Forsterling, & Keinonen, 2003), in the present work measures of RS might have better predicted relevant outcomes because they contained more items specific to negative mental contents.

Similarly, the abundance of negatively valenced items may help explain why we observed relatively few

effects of decentering-related constructs moderating relationships between PA and symptoms of excessive PA: The valence-specific content of the decentering measures was poorly matched to this context. A measure that asks specifically about responses to positive thoughts and feelings, or does not specify valence at all, likely would be better suited to evaluating decentering from positive experiences. In particular, some individuals with bipolar disorder struggle specifically with their *positive* emotions and thoughts, as they often attempt to dampen positive emotional experiences, and such dampening is associated with an increase in manic and depressive symptoms (Feldman, Joormann, & Johnson, 2008; Gilbert, Nolen-Hoeksema, & Gruber, 2013). These processes may be important to understand how decentering impacts affect-psychopathology associations, but are not fully captured by current measures.

Clinical implications

The results of this study inform clinical assessment and treatment in several ways. First, our findings suggest that improving decentering skills may be most important for those with high NA or low PA (results were mixed regarding elevated PA). For individuals with more moderate levels of negative and PA who are in treatment, other techniques may be more effective or efficient than decentering (for example, acceptance or cognitive restructuring may be more immediately accessible). Alternatively, it might be important to teach decentering in a contextually specific manner, not captured in these trait assessments. Second, some symptoms may be more impacted by decentering—alone and in concert with trait affect—than others. Our results provide initial evidence that decentering may be particularly helpful for individuals struggling with dysphoria, panic, anhedonia, and possibly some types of narcissism. In two cases, greater decentering (OP) actually *increased* the positive association between NA and symptoms (grandiose narcissism and withdrawal). We are hesitant to interpret these effects without replication, particularly because they were not found in the other measure of grandiose narcissism or anhedonia, but it brings up the possibility that decentering may be counterindicated for individuals who are at risk for certain symptoms.

Third, this is one of the first studies to document that decentering from internal experiences relevant to PA may be useful in some contexts (e.g., for those with anhedonic or narcissistic tendencies). Current clinical practices in teaching decentering skills (as well as research on decentering) focus almost exclusively on decentering from aversive or negative experiences, despite the fact that decentering in theory can apply to any internal experience. Our results suggest it is worth

considering broadening decentering training to positive experiences, at least for some individuals. They also prompt an interesting related question: It is fairly obvious how high NA (or even high PA) is associated with problematic thoughts, but how might a *lack* of PA lead to thoughts from which it would be adaptive to decenter? Although our data cannot address this question, several studies focused on anhedonic symptoms (though conceptualized within the schizophrenic spectrum) have found that they were associated with dysfunctional thoughts such as low expectations for success and defeatist performance beliefs, and that these symptoms were distressing to individuals who experienced them (e.g., Couture, Blanchard, & Bennett, 2011; Fervaha, Zakzanis, Foussias, Agid, & Remington, 2015).

Last, our findings indicate that different symptoms vary as to which component of decentering (OP or RS) is most relevant. RS was a stronger interactive predictor of numerous symptoms (and particularly in the momentary EMA analyses), suggesting that techniques focused on reducing struggle with thoughts (e.g., defusion) may be particularly potent transdiagnostically (but see our concerns described previously about how measurement may have influenced results on components of decentering). Overall, the findings of the current study provide direction for further understanding which interventions will work best for whom and suggesting guidelines for personalizing treatment (here, based on affective tendencies and symptoms)—an important area of research to improve the effectiveness and efficiency of psychotherapy (e.g., Fisher & Boswell, 2016; Ng & Weisz, 2016).

Study limitations and future directions

Strengths of this study included drawing on multiple samples (clinical and nonclinical) that yielded largely consistent findings, the use of different assessment designs (cross-sectional and EMA), inclusion of a large set of symptoms and measures/components of decentering to examine patterns of specific associations, and latent variable modeling that reduces the impact of measurement error. Despite these strengths, this study was the first to test decentering as a moderator of affect-symptom associations, and so we cannot be strongly confident in these results until they are replicated in other samples and with other designs or measures. In particular, the specific inclusion criteria for the clinical samples (reported anxiety disorder diagnosis in Study 1; seeking treatment for any concern in Study 2) may have impacted findings, with unknown generalizability to clinical samples that differ in diagnoses or severity. Furthermore, the clinical and student samples differed in important ways beyond their levels of psychological distress, as the clinical samples were older and were predominantly women (whereas the student samples had approximately equal proportions of men and women). Some of these differences increase the generalizability of our findings, but overall these samples are likely not representative of the general population.

As described previously, existing measures of decentering are not ideal for an assessment of decentering from positive internal experiences, and the focus of decentering measures on negative content may have exaggerated associations between decentering (particularly RS) and internalizing symptoms. In addition, we did not include a measure of meta-awareness because there is not one currently available, and so it is unclear what unique role meta-awareness may have in this process. The current study examined numerous internalizing symptoms and symptoms of dysregulated PA, but time constraints and the use of secondary data analysis did not allow for a comprehensive assessment of all relevant symptoms. It is likely that other symptoms characterized by excessive negative affect (e.g., health anxiety, posttraumatic stress disorder, obsessive-compulsive disorder, agoraphobia) and low positive affect (e.g., schizotypy, schizophrenia) are also impacted by decentering, and these should be included in future studies. Last, all data were self-reported; interview or implicit measures would be useful for assessing symptoms associated with poor insight (e.g., narcissism, long-standing anhedonia, mania).

The findings of the current study are promising, as they suggest that decentering can reduce the risk conferred by extreme levels of affect, even among individuals who are currently symptomatic or have already developed a disorder. Future studies should seek to further specify the symptoms that are most amenable to change as a function of high decentering, including testing them in the context of mindfulness-based interventions, as well as in naturalistic settings. Some important remaining questions include how much training in decentering is necessary to see a beneficial effect, and how decentering should be taught and practiced with regard to the valence of internal experiences. It will also be critical to clarify the processes and mechanisms underlying decentering, such as those discussed in the introduction, as well as to develop more precise measurement and evaluation of individual components of decentering. Finally, future studies should be designed so that they can separate out the utility of decentering in a given context from the typical motivation (or lack thereof) to engage in decentering in that context.

Author Contributions

Both authors contributed to the study conceptualization and design. Data collection and interpretation were performed by

both authors, and K. Naragon-Gainey performed the data analysis. K. Naragon-Gainey drafted the manuscript, and K. G. DeMarree provided critical revisions. Both authors approved the final version of the manuscript for submission.

Supplemental Material

Additional supporting information may be found at http://journals.sagepub.com/doi/suppl/10.1177/2167702617719758.

Open Practices

Full data and materials for all four data sets included in Study 1 are available at https://osf.io/w59au/. Study 2 was collected for another purpose, and the primary paper resulting from these data is in preparations as of the publication of the current paper. Consequently, we have not made these data publicly available at this time, though the exact wording of all materials reported in this paper are available at https://osf.io/m4g7b/. This article has received badges for Open Data and Open Materials. More information about the Open Practices badges can be found at https://osf.io/tvyxz/wiki/view/ and https://www.psychologicalscience.org/publications/badges.

Notes

1. Consistent with Bernstein and colleagues (2015), we use the term *decentering* to refer to numerous closely related constructs, including decentering, defusion, and self-distancing.
2. Mindfulness facets vary in their relationships to decentering (e.g., −.22 to +.77 in Naragon-Gainey & DeMarree, 2017), depending on how mindfulness or decentering is operationalized. Thus, some mindfulness scales may be more relevant to decentering than others.
3. We included all self-report measures of decentering, defusion, and self-distancing from psychological states that we could locate (none exist for self-distancing), with the exception of the Automatic Thoughts Questionnaire–Believability Scale (Zettle & Hayes, 1986). This scale, which assesses the believability of negative thoughts associated with depression, was excluded because its psychometric properties (particularly validity) have not been established.
4. Although we report IDAS Mania only, analyses that predicted IDAS Euphoria yielded identical results as those predicting IDAS Mania with regard to the affect-decentering interaction terms.
5. We also ran exploratory analyses examining whether the internalizing symptom interactions differ across gender in the three student samples combined (see Table E for full results). Analyses indicated robustness across gender for the primary study findings (OP × NA and RS × NA predicting dysphoria; RS × NA predicting panic), but revealed several interactions with the RS factor in the expected direction (specifically, RS × PA predicting dysphoria; RS × NA and RS × PA predicting social anxiety) that were significant only for males. However, interaction terms for these three models were in the same direction for females and did not differ significantly in magnitude from those of males, $t(1397) = 0.60$ to 0.88, $p = .38$ to $.55$. Thus, we are

hesitant to draw strong conclusions about gender differences based on these analyses.
6. There were no significant differences in demographic variables (i.e., sex, age, race/ethnicity, education level, and employment status) between those who completed the follow-up study and those who did not. They also did not differ in whether they were currently receiving psychotherapy or psychiatric medication.

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