Journal of Abnormal Psychology
2016, Vol. 125, No. 7, 960–975

0021-843X/16/$12.00 http://dx.doi.org/10.1037/abn0000208

A Transdiagnostic Approach to Examining the Incremental Predictive Power of Emotion Regulation and Basic Personality Dimensions

Kasey Stanton and David C. Rozek
University of Notre Dame

Sara M. Stasik-O'Brien
Knox College

Stephanie Ellickson-Larew and David Watson
University of Notre Dame

Although personality and emotion regulation abilities appear to overlap considerably, few studies have adopted an integrative approach by examining personality and emotion regulation together. Therefore, it is unclear how much incremental power emotion regulation demonstrates in predicting psychopathology beyond personality traits, and vice versa. Results from a community sample characterized by high levels of psychopathology (N = 299) indicated that personality and emotion regulation represent strongly related but distinguishable constructs, with both showing incremental power beyond the other in many cases in predicting self-reported and interview-rated psychopathology. More specifically, difficulties in responding adaptively to negative emotional experiences displayed predictive power beyond neuroticism and other personality traits in predicting internalizing psychopathology and psychoticism. Conversely, neuroticism displayed substantial incremental predictive power beyond emotion regulation and other five-factor model traits, especially for anxiety and other internalizing psychopathology. Other five-factor model traits also showed incremental predictive power in specific cases (e.g., agreeableness and conscientiousness showed specificity in predicting antagonism and disinhibition, respectively). These data provide a starting point for developing a finer-grained understanding of how emotion dysregulation and personality traits are implicated in a range of psychopathology, highlighting the value of adopting an integrative approach of examining emotion regulation and personality traits concurrently.

General Scientific Summary

Similar to general personality traits, difficulties in emotion regulation represent relatively stable individual differences in behavior, affect, and cognition. Our results suggest that although emotion regulation and personality traits overlap considerably, they are distinguishable constructs that make meaningful incremental contributions beyond one another in predicting a range of clinical symptoms and diagnoses.

Keywords: psychopathology, affect, factor analysis, internalizing, externalizing

Considerable research over the last several decades has examined the psychopathology relations for five-factor model personality traits (Kotov, Gamez, Schmidt, & Watson, 2010; Samuel & Widiger, 2008; Watson & Naragon-Gainey, 2014). Accumulating evidence indicates strongly that widely used measures assessing these personality traits converge to assess the same five general domains; for example, neuroticism as assessed by the commonly used Big Five Inventory (John & Srivastava, 1999) converges very strongly with neuroticism as assessed by various iterations of Costa and McCrae's NEO Personality Inventory (e.g., the NEO Personality Inventory-3 [NEO-PI-3]; McCrae, Costa, & Martin, 2005; Markon, Krueger, & Watson, 2005; Watson, Clark, & Harkness, 1994). Although there is considerable consensus regarding the assessment of five-factor model personality domains, there is less agreement on which specific facets define each of these broader domains (see Stanton & Watson, 2014; Watson, Stasik, Ellickson-Larew, & Stanton, 2015b). For instance, the NEO-PI-3 assesses neuroticism using six facets, whereas the more recently developed Faceted Inventory of the Five-Factor Model (FI-FFM; Simms, 2009) models this domain using only five facets.

Due in large part to the strong level of convergence across Big Five measures at the domain level, psychopathology relations for these domains have been replicated widely across various instruments (Kotov et al., 2010; Samuel & Widiger, 2008; Watson et al., 1994). More specifically, recent meta-analytic findings indicate that elevated levels of neuroticism are a feature of most psycho-

Kasey Stanton and David C. Rozek, Department of Psychology, University of Notre Dame; Sara M. Stasik-O'Brien, Department of Psychology, Knox College; Stephanie Ellickson-Larew and David Watson, Department of Psychology, University of Notre Dame.

Please note that the data and ideas appearing in this article have not been disseminated previously.

Correspondence concerning this article should be addressed to Kasey Stanton, Department of Psychology, University of Notre Dame, 118 Haggar Hall, Notre Dame, IN 46556. E-mail: kstanto1@nd.edu

pathology and a particularly strong predictor of internalizing disorders (Kotov et al., 2010). Conscientiousness also relates negatively to most forms of psychopathology, and both it and agreeableness are negatively associated with externalizing disorders (e.g., antisocial personality disorder; Kotov et al., 2010; Samuel & Widiger, 2008). Extraversion shows significant links with internalizing disorders, displaying its strongest negative associations with depressive disorders and social anxiety (Kotov et al., 2010). Although there has been debate regarding the relations between openness and psychoticism (see Chmielewski, Bagby, Markon, Ring, & Ryder, 2014), meta-analytic findings indicate this trait relates weakly to most psychopathology (Kotov et al., 2010; Samuel & Widiger, 2008).

Perhaps the most salient contribution of personality-psychopathology research has been its key role in explicating shared mechanisms and explaining observed patterns of comorbidity among clinical syndromes (see Watson et al., 1994; Watson & Naragon-Gainey, 2014). In fact, Section III of the Fifth Edition of the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM–5*; American Psychiatric Association, 2013) includes a trait dimensional scheme that was largely derived from—and overlaps strongly with—the five-factor model of normal personality (Krueger, Derringer, Markon, Watson, & Skodol, 2012). Thus, it is clear that understanding personality relations is essential for any complete understanding of psychopathology.

Integrating Personality-Psychopathology Research With Research on Clinical Traits

Neuroticism and Clinical Traits

Personality-psychopathology researchers recently have turned their attention to investigating the degree to which personality traits overlap with individual-differences variables also extensively studied in psychopathology research, albeit in distinct literatures. More specifically, recent research has investigated the degree to which personality overlaps with important *clinical traits* such as anxiety sensitivity, experiential avoidance, fear of negative evaluation, rumination, and perfectionism (Mahaffey, Watson, Clark, & Kotov, 2016; Naragon-Gainey & Watson, 2016). Similar to general personality traits, clinical traits are thought to represent relatively stable dispositional constructs, and they have been studied especially extensively in regard to their relations with depressive and anxiety disorders (e.g., Newman & Llera, 2011; Olatunji & Wolitzky-Taylor, 2009).

Recent investigations examining the degree of overlap between personality and clinical traits suggest that such traits overlap strongly with neuroticism, which, similar to clinical traits, is strongly linked to internalizing psychopathology (Kotov et al., 2010). Mahaffey et al. (2016) examined the relations between several clinical traits (e.g., perfectionism, fear of negative evaluation, rumination) and neuroticism, finding that these clinical traits (a) defined a common factor with neuroticism indicators and (b) showed modest incremental power beyond neuroticism in predicting depression, anxiety disorders, posttraumatic stress disorder (PTSD), and obsessive–compulsive disorder (OCD). Similarly, Naragon-Gainey and Watson (2016) found that clinical traits (e.g., anxiety sensitivity, perfectionism) were strongly related to neuroticism and generally showed limited incremental predictive power beyond it, although anxiety sensitivity made notable incremental predictive contributions in several cases (e.g., PTSD and panic). Thus, these findings clearly indicate that clinical traits overlap considerably with neuroticism.

Emotion Regulation

Research on emotion regulation represents another avenue of empirical study often investigated concurrently with clinical traits such as experiential avoidance, and in fact, some clinical traits (e.g., rumination, suppression) commonly are conceptualized as specific emotion regulation strategies (Aldao, Nolen-Hoeksema, & Schweizer, 2010). As a result of this growing literature, difficulties in emotion regulation now are recognized as prominent features of a range of psychopathology, including depressive, anxiety, eating, and substance use disorders, borderline personality disorder, and bipolar spectrum disorders (Aldao et al., 2010; Gratz & Roemer, 2004; Gruber, 2011). Furthermore, this research has resulted in emotion dysregulation becoming a target of a number of empirically supported treatments, as widely used cognitive–behavioral and acceptance-based interventions often target emotion regulation at least indirectly (Gratz, Weiss, & Tull, 2015).

Although emotion regulation has been widely studied in the psychopathology literature, it should be noted that researchers have relied on varying definitions of this broad construct. We focus here on Gratz and Roemer's (2004) conceptualization of emotion regulation as measured by the Difficulties in Emotion Regulation Scale (DERS), which has been cited over 2,000 times according to Google Scholar (as of August 2016). Gratz and Roemer's (2004) DERS primarily measures maladaptive responses to negative emotional experiences, as it assesses the extent to which one struggles to acknowledge and accept emotional experiences, as well as difficulties maintaining functioning and conducting goal-directed behavior when experiencing aversive emotional states. Gratz and Roemer's (2004) framework is related to, but distinct from, frameworks focusing on how specific emotion regulation processes (e.g., cognitive reappraisal) can be used to influence emotional experiences (see Gross & Jazaieri, 2014).

Gratz and Roemer's (2004) focus on general difficulties in responding to negative emotions implies that the DERS measures relatively stable individual differences in emotion regulation, and in fact, Gratz and Roemer (2004) found that DERS total scores showed strong stability over a period spanning 4 to 8 weeks (mean length not indicated; see Gratz & Roemer, 2004). Thus, similar to other clinical traits, relatively stable traits related to emotion regulation difficulties would be expected to overlap with personality, which comprises individual differences in behavior, affect, and cognition (Watson et al., 1994). As has been found with other clinical traits, the DERS subscales would be expected to overlap especially strongly with neuroticism, a trait defined by emotional lability and a propensity to experience high levels of negative affect (Watson & Naragon-Gainey, 2014). In this regard, it is noteworthy that the majority of DERS items ask participants to indicate their responses to feeling "upset"; previous research indicates that the inclusion of such negative affective content in items "virtually guarantees" that they will overlap substantially with neuroticism (Clark & Watson, 1995, p. 312).

Although (a) research indicates that other clinical traits overlap considerably with neuroticism and (b) the DERS subscales also appear to be closely related to neuroticism, research using the DERS has remained surprisingly distinct from broader work relating personality and psychopathology. For example, research using the DERS subscales has investigated depression vulnerability by linking "trait emotion regulation" with depressive symptoms (Ehring, Tuschen-Caffier, Schnülle, Fischer, & Gross, 2010), and difficulties understanding and responding adaptively to emotions also have been identified as prominent features of generalized anxiety disorder (Mennin, McLaughlin, & Flanagan, 2009). Given that neuroticism also correlates strongly with depression and anxiety (Kotov et al., 2010; Mahaffey et al., 2016), these findings raise the question as to what extent DERS subscales display these forms of psychopathology. However, these studies focusing on emotion regulation did not assess neuroticism or other general personality dimensions, leaving this question unanswered.

Similarly, other DERS-based research found that impulse control difficulties related to emotion dysregulation are core features of alcohol use disorder (Fox, Hong, & Sinha, 2008). Once again, however, personality factors were not taken into consideration, although one would expect that conscientiousness and agreeableness—the former of which is closely related to impulse control difficulties (Watson et al., 1994)—may at least partially explain the nature of these relations given their negative associations with alcohol use (Kotov et al., 2010). Furthermore, a number of studies using the DERS have found robust links between aggression and emotion regulation difficulties (Roberton, Daffern, & Bucks, 2012). This is another domain wherein considering the overlap between emotion regulation and personality traits such as neuroticism and agreeableness may be useful, as anger is often conceptualized as a facet of neuroticism and aggression is inversely related to agreeableness (Watson et al., 1994). We cite these studies to illustrate that work using the DERS largely has remained distinct from basic personality research, and the lack of integration among these literatures also reflects the fact that personality-psychopathology researchers typically neglect to examine emotion regulation difficulties in their studies (Stanton & Watson, 2014).

It is surprising that these literatures have remained so distinct not simply because the DERS subscales appear to overlap considerably with personality measures, but also because emotion regulation and personality researchers have adopted similar research foci: Researchers from both paradigms acknowledge the heterogeneity of psychological disorders as problematic, and both commonly adopt a transdiagnostic approach to studying psychopathology, often investigating relations with a range of psychopathology within the same study (Gross & Jazaieri, 2014; Stanton & Watson, 2014). Notably, the reviewed studies using the DERS already have recognized the potential value in integrating these approaches, as the authors of these studies noted the importance of future research examining the associations between emotion regulation and personality traits (e.g., Ehring et al., 2010; Mennin et al., 2009). Consequently, determining the degree to which DERS subscales are distinctive from neuroticism and other personality traits has the potential to inform and integrate two rich psychopathology literatures.

The Current Study

Therefore, we sought to examine the interrelations among the DERS and the five-factor model of personality, as well as their incremental predictive power beyond one another in predicting psychopathology. Prior research using this dataset has explicated the relations between personality domains and facets and a range of psychopathology (e.g., Stanton, Stasik-O'Brien, Ellickson-Larew, & Watson, 2016; Watson et al., 2015b), but none of these studies incorporated the DERS. Thus, the current study had several goals aimed at integrating the emotion regulation- and personality-psychopathology literatures.

First, we sought to determine the relations between the DERS subscales and all five-factor model domains. Although the DERS subscales appear to be most closely related to neuroticism, this represents an important aim given that other traits also show potentially interesting relations with them. For example, individuals scoring highly on conscientiousness measures may be more likely than others to persist in reaching their goals even when experiencing distress, whereas high levels of agreeableness may confer an ability to respond adaptively to experiencing negative emotion in a range of interpersonal contexts. The DERS includes content directly relevant to these examples, as some of its items assess one's ability to persist in goal-directed behavior when under distress, which seems to implicate conscientiousness. In regard to this first goal, we expected the DERS subscales to associate most strongly with neuroticism. Additionally, we predicted that DERS content assessing perseverance toward goals when under duress would show notable relations with conscientiousness, a trait subsuming facets such as self-discipline and dutifulness (Watson et al., 1994).

Second, to clarify further how the DERS falls within the basic structure of personality, we examined the relations between the DERS subscales and different facets of neuroticism. We adopted this aim because neuroticism is linked strongly to a range of psychopathology and to other clinical traits (e.g., perfectionism, anxiety sensitivity). Given that different personality inventories (e.g., the NEO-PI-3 and FI-FFM) are composed of varying numbers of neuroticism facets, we examined the facet level structure of neuroticism across three personality inventories: the NEO-PI-3, FI-FFM, and the Temperament and Affectivity Inventory (Watson, Stasik, Chmielewski, & Naragon-Gainey, 2015). We then related the resulting neuroticism facet dimensions to the DERS. This approach allowed us to model shared variance among core neuroticism facets occurring across inventories as latent factors, which reduced our reliance on the idiosyncratic facet structure modeled in any single instrument. We predicted that DERS subscales would display strong but nonspecific relations with neuroticism facets, as the DERS items model a range of negative affectivity content (e.g., feeling guilty, angry) in addition to relying heavily on the item stem of how one responds "when upset."

Finally, we aimed to determine the degree to which the DERS subscales demonstrate predictive power for a range of psychopathology beyond five-factor model traits, and vice versa. Our study adopted an integrative approach not simply by examining relations for personality and emotion regulation together, but also by explicating such relations vis-à-vis a diverse array of symptoms and diagnoses. Related to this goal, we predicted that although the DERS subscales and neuroticism would be positively related to

nearly all forms of psychopathology based on previous meta-analytic evidence, they would show particularly strong relations with internalizing psychopathology (Aldao et al., 2010; Kotov et al., 2010). We examined the degree to which the DERS subscales demonstrated incremental predictive power beyond personality (and vice versa) on a more exploratory basis, as little previous research has examined this issue. That being said, we expected the DERS to have some predictive power beyond neuroticism (and other traits): Whereas neuroticism represents a propensity for emotional reactivity and negative emotional experiences (Cisler, Olatunji, Feldner, & Forsyth, 2010; Gross & Jazaieri, 2014; Watson & Naragon-Gainey, 2014), the DERS subscales assess both (a) experiencing strong negative emotions as well as (b) maladaptive responses to these emotions. Consequently, we expected them to contribute some incremental predictive power beyond neuroticism.

Method

Participants and Procedure

Findings from participants and measures presented here represent a subset of a community-based study conducted in three phases. This three-phase study aimed to (a) determine the structure of personality at the facet level and (b) explicate the relations between personality facets and a range of self-reported and interview-assessed psychopathology.[1] Participants (N = 410) completed the first and second phases of the study roughly 3 weeks apart (mean interval = 20.3 days), and then completed the third and final phase (N = 299) approximately 9.5 months on average after the second (mean interval = 286.6 days). Many of the scales used in this study were administered at the final phase; thus, the sample for this study consisted of the 299 participants (although sample sizes for specific analyses vary slightly due to missing data) who completed all three study phases.

Participants for this three-phase study were individuals from the South Bend, Indiana, metropolitan area who had provided their contact information from previous studies conducted at the Center for Advanced Measurement of Personality and Psychopathology (see Watson, Stasik, Ellickson-Larew, & Stanton, 2015a, 2015b). Additionally, other community adults who had not participated in previous studies were recruited though flyers posted in local mental health clinics, e-mail listservs, and via word of mouth (i.e., participants could let other potentially eligible individuals know about the study). All potential participants were screened to ensure they met the following eligibility criteria: 18 years of age or older, able to read and write in English, and capable of providing consent to participate. There were no other participation criteria.

Although participants were not required to be receiving psychological treatment, given that many of them were recruited from local community mental health centers (e.g., through flyers being posted in mental health clinics), this sample was characterized by relatively high levels of psychopathology. For example, nearly half of the sample (N = 135, 45.2%) indicated that they were currently receiving therapy or medications for mental health issues or had received therapy in the past. Moreover, more than a quarter of the sample (N = 86, 28.8%) currently was receiving therapy and/or psychotropic medication, a rate more than double that of the percentage of U.S. adults in the general population (percentage estimates vary between 12.5% and 14% based on the year) who are receiving therapy and/or medication (National Institute of Mental Health, 2016). Furthermore, over two fifths of the sample met criteria for at least one of the *DSM* diagnoses examined here (N = 131, 43.8%), and only half (49.5%) of the sample was employed.

Participant mean age was 46.5 years (SD = 13.1), 71.2% of the sample was female, and the large majority of the participants identified either as Black/African American (47.5%) or as Caucasian (46.2%). Although this sample is diverse in regards to a number of demographic variables, both Watson et al. (2015a) and Stanton et al. (2016) found that results from this sample did not differ substantially as a function of gender, race, or psychiatric treatment history; more specifically, these studies found that patterns of personality-psychopathology relations were very similar in strength and direction even when taking into account participant demographics (e.g., positive affectivity displayed very similar psychopathology relations in participants with and without a psychiatric treatment history).

Measures

Overview. As discussed, participants completed the study measures over three phases. First, personality scales were completed by participants at Phase 1, along with the first half of a clinical interview. Phase 2 (completed roughly three weeks after Phase 1) consisted of the second half of the clinical interview as well as a range of self-report psychopathology measures. Then, in Phase 3, participants completed the DERS, additional self-report psychopathology measures, and measures of other constructs expected to show interesting relations with personality (e.g., measures of musical preference and online behavior). As noted earlier, Phase 3 was completed roughly 9 months on average after the second phase, and therefore, roughly 10 months after Phase 1 (mean interval = 306.5 days).

Trait scores in middle-aged adults would be expected to show strong rank-order stability over a period of 9–10 months (Gnambs, 2014; Gratz & Roemer, 2004; Roberts & DelVecchio, 2000). Nevertheless, the fact that the general personality measures and the DERS were completed at different study phases (Phases 1 and 3, respectively) complicates the interpretation of their associations with psychopathology to some extent. That is, all other things being equal, the general personality measures would be expected to associate more strongly with psychopathology measures completed at Phases 1 (i.e., several interview modules) and 2 (which occurred only 3 weeks later and consisted of both self-report measures and the remaining interview modules), whereas the DERS would be expected to show stronger associations with psychopathology measures completed at Phase 3 (self-report measures only).

[1] Previous results published from this larger study indicate that extraversion is defined by four factors, which were found to display divergent patterns of relations with psychopathology (Watson, Stasik, Ellickson-Larew, & Stanton, 2015b). Other results published using this dataset also have explicated the extent to which constructs such as anomalous sleep experiences, mania, and narcissism show specificity in their personality and psychopathology relations (e.g., finding that both mania and narcissism are linked to elevated levels of positive emotionality, in contrast to other forms of psychopathology; for examples of studies utilizing this dataset, see Stanton et al., 2016; Watson, Stasik, Ellickson-Larew, & Stanton, 2015a, 2015b). However, none of these previous studies examined relations for emotion regulation with personality or psychopathology.

To address this issue, we examined relations with parallel sets of psychopathology measures that were administered in Phases 2 and 3. For example, the Expanded Version of the Inventory of Depression and Anxiety Symptoms (IDAS-II; Watson et al., 2012) was completed by participants at both Phases 2 and 3, allowing us to compare associations for the DERS and personality at both time points. Furthermore, participants completed the Personality Inventory for *DSM–5* (PID-5; Krueger et al., 2012) at Phase 2, and the Computerized Adaptive Test for Personality Disorder Static Form (CAT-PD-SF; Simms et al., 2011) at Phase 3; given that both measures assess pathological personality traits using very similar sets of scales (e.g., both include scales assessing anxiety, callousness, impulsivity, and peculiarity; see Wright & Simms, 2014), we also were able to make comparisons across these measures. However, although many psychopathology constructs were assessed at both Phases 2 and 3, several self-report psychopathology measures (e.g., measures of substance use and agoraphobia) and the interview measures were not administered at Phase 3. We discuss all measures incorporated into our analyses next.

Personality measures. Participants completed several personality inventories at Phase 1. This included the NEO-PI-3 (McCrae et al., 2005), which contains 240 items assessing five-factor model traits at the domain and facet levels (each domain contains six eight-item facet scales). Participants responded to the NEO-PI-3 items on a 5-point scale ranging from *strongly disagree* to *strongly agree*. Coefficient alphas for the five domain scores ranged from .85 to .93 (mean α = .89). In addition, the six NEO-PI-3 neuroticism facets (i.e., Anxiety, Angry Hostility, Depression, Self-Consciousness, Impulsiveness, and Vulnerability; αs ranged from .64 to .81; mean α = .75) were used to examine the facet level structure of neuroticism.

Next, participants completed the FI-FFM (Simms, 2009; see also Watson et al., 2015a, 2015b), a 247-item self-report inventory also assessing five-factor model domains and traits. Participants responded to the items on a 5-point scale ranging from *strongly disagree* to *strongly agree*. The FI-FFM contains five neuroticism facet scales that were used to examine the structure of neuroticism at the lower order level: Anxiety, Depression, Anger Proneness, Somatic Complaints, and Envy (αs ranged from .78 to .89; mean α = .83). For analyses utilizing domain scores, these facets were summed to create an overall index of neuroticism; similarly, the respective facets from each of the other domains were summed to create corresponding domain scores (αs ranged from .83 to .95; mean α = .90).

Additionally, participants completed the Temperament and Affectivity Inventory (TAI; Watson et al., 2015), which assesses positive and negative temperament. We used the six TAI scales that are the clearest markers of neuroticism/negative temperament (i.e., Regret, Depression, Anger, Anxiety, Mistrust, and Lassitude; all scales had mean loadings > .60 on neuroticism across six samples; see Watson et al., 2015) to provide additional indicators for our structural analyses of neuroticism facets. Coefficient alphas for these scales ranged from .80 to .89 (mean α = .86). Participants responded to the items on a 5-point scale ranging from *strongly disagree* to *strongly agree*.

Creation of domain composites. For the purposes of analyses involving five-factor model domain scores, we created composite measures based on the factor analytic results reported by Watson et al. (2015a) using this dataset. Their results indicated that corresponding domain scores from the NEO-PI-3 and FI-FFM were markers of the same factors (e.g., NEO-PI-3 Neuroticism and FI-FFM Neuroticism defined the same factor). All correlations for corresponding traits across these two instruments (e.g., the correlation for NEO-PI-3 and FI-FFM Extraversion) exceeded .75 here (mean r = .82). In creating these composites, all variables were standardized before being combined so that they would be equally weighted.

Emotion regulation measure. We assessed emotion dysregulation using the DERS (Gratz & Roemer, 2004), which was completed at Phase 3. The DERS is a 36-item measure assessing six emotion dysregulation traits: Nonacceptance of Emotional Responses (α = .87), Difficulties Engaging in Goal-Directed Behavior (α = .84), Impulse Control Difficulties (α = .86), Lack of Emotional Awareness (α = .78), Limited Access to Emotion Regulation Strategies (α = .88), and Lack of Emotional Clarity (α = .81). Participants indicated how often each of the DERS items applied to them on a 5-point scale ranging from *almost never* to *almost always*, with higher scores indicating greater emotion dysregulation.

Interview measures of psychopathology. The Mini-International Neuropsychiatric Interview (Sheehan et al., 1998) is a structured diagnostic interview assessing symptoms of *DSM–IV* psychiatric disorders; we used an adapted version (with the authorization of the author) that incorporated diagnostic changes for *DSM–5*.[2] The panic disorder, agoraphobia, PTSD, social anxiety disorder, OCD, alcohol use disorder, and (nonalcohol) substance use disorder modules were administered at Phase 1; the modules for dysthymic disorder, major depressive disorder (MDD), generalized anxiety disorder (GAD), mania, and psychotic disorder were administered at Phase 2. Interviewers were graduate students and advanced undergraduate research assistants who underwent extensive training on the Mini-International Neuropsychiatric Interview. Training included in-depth review of *DSM* criteria for each disorder being assessed, didactics on the administration of a semistructured interview, and a detailed overview of the administration of each interview item. Each interviewer also was required to observe three interview administrations by a trained graduate student and subsequently be observed administering the interview three times. The interviews were audiotaped to assess interrater reliability, and a second rater independently scored 39 of the Phase 1 interviews and 34 of the Phase 2 interviews (due to audiotape problems, N = 38 and 33, respectively, for some disorders). The kappa for psychotic disorder (.65) indicated good interrater reliability (see Cicchetti, 1994), and values for all other ratings were in the excellent range (κs ranged from .77 to 1.00).[3]

Self-report psychopathology measures. The participants completed a lengthy battery of self-report measures in Phases 2 and 3 of the study. This protocol consisting of more than 150 individual scales is too extensive to examine in its entirety; furthermore, many of the scales included in this battery (e.g., measures of musical preference and online behavior, a number of

[2] This study was ongoing when *DSM–5* was finalized. The version we used included the proposed changes for GAD that later were rejected by the American Psychiatric Association, such that our version of the GAD diagnosis differs slightly from that in *DSM–5*.

[3] Kappas could not be computed for agoraphobia diagnoses because none of the rescored cases met criteria for this disorder.

scales assessing specific OCD symptoms) were not directly relevant to our study aims. Thus, we were guided by three considerations in selecting self-report psychopathology measures to be included in our analyses. First, to explicate fully the psychopathological relations of emotion regulation and personality, we selected a broad range of indicators related to internalizing, externalizing, and psychoticism. Second, we focused on constructs that were also assessed in the clinical interview, enabling us to examine the robustness of observed relations across methods; more specifically, we included at least one parallel self-report measure for each interview measure (e.g., we included a self-report panic scale to parallel interview-rated panic disorder). Third, we emphasized constructs that were assessed in both Phase 2 and Phase 3.

Our battery also included many highly correlated scales. Thus, as has been done in previous studies utilizing this dataset (e.g., Stanton et al., 2016; Watson, Stasik, Ellickson-Larew, & Stanton, 2015a, 2015b), we aggregated highly correlated scales into symptom composites when possible. In each case, the variables were standardized before being combined so that they would be equally weighted. In selecting variables for composites, we included only scales that correlated ≥.50 with all other scales included in that respective composite to ensure composites were created from strongly correlated scales.

Measures completed at Phase 2. We included a number of measures from Phase 2 to assess internalizing psychopathology. First, the IDAS-II (Watson et al., 2012) contains six scales that jointly capture all of the symptom content for *DSM–5* MDD. Dysphoria (10 items) contains items assessing depressed mood, loss of interest, worthlessness, guilt, hopelessness, cognitive disturbance, and psychomotor problems, thereby covering MDD Criteria 1, 2, 5, 7, and 8. Suicidality (six items) essentially represents Criterion 9, Insomnia (six items) assesses the corresponding portion of Criterion 4 (sleep disturbance), and Appetite Loss (three items) and Appetite Gain (three items) jointly define Criterion 3 (appetite disturbance). Lastly, Lassitude (six items) includes content related to both fatigue/anergia (Criterion 6) and the hypersomnia portion of Criterion 4. Coefficient alphas for these IDAS-II depressive symptom scales ranged from .73 to .87.

Next, the IDAS-II Social Anxiety (6 items; $\alpha = .84$) and Panic (8 items; $\alpha = .84$) scales were included to model content related to each respective disorder. Furthermore, we used the PID-5 Anxiousness scale (9 items; e.g., "get nervous thinking about the future") to model traits related to GAD. Lastly, we also constructed a series of internalizing composites. First, we created a PTSD composite based on the Traumatic Intrusions (4 items; $\alpha = .85$) and Traumatic Avoidance (4 items; $\alpha = .87$) scales of the IDAS-II; these scales correlated .55. Participants also completed the IDAS-II Checking (3 items; $\alpha = .83$), Ordering (5 items; $\alpha = .80$), and Cleaning (7 items; $\alpha = .89$) scales, which were combined to create an OCD composite. Correlations among these scales ranged from .60 to .72 (mean $r = .64$). Lastly, we created an Agoraphobia composite using the agoraphobia scales from the Albany Panic and Phobia Questionnaire (Rapee, Craske, & Barlow, 1994–1995; nine items; $\alpha = .86$) and the Fear Questionnaire (Marks & Mathews, 1979; five items; $\alpha = .86$); these measures correlated .69 with each other.

We included several indicators of externalizing psychopathology. First, we combined the PID-5 Callousness (14 items), Manipulativeness (five items), and Deceitfulness (10 items) scales to create an Antagonism composite; correlations among these scales ranged from .59 to .79 (mean $r = .71$). Second, we created a Disinhibition composite using the PID-5 Irresponsibility (seven items), Distractibility (nine items), and Impulsivity (six items) scales; correlations among these scales ranged from .54 to .60 (mean $r = .57$). Coefficient alphas for the PID-5 scales used to create both of these externalizing composites ranged from .71 to .89 in this sample. Next, we created an Alcohol Use composite by combining scores on the 10-item Alcohol Use Disorders Identification Test (Saunders, Aasland, Babor, de la Fuente, & Grant, 1993; $\alpha = .87$) and the 10-item Short Michigan Alcoholism Screening Test (Selzer, Vinokur, & van Rooijen, 1975; $\alpha = .88$), which correlated .58. Lastly, we used the 10-item Drug Use Survey (Clark & Watson, 1999; $\alpha = .79$) to assess use of other illicit substances. Participants rated the Drug Use Survey items on a 7-point scale ranging from 1 (*never*) to 7 (*40 times or more*), indicating how many times they have used a range of substances (e.g., marijuana, psychedelics, narcotics) in their lifetimes.

Furthermore, we report data on two measures broadly related to psychosis/schizotypy. First, we created a Negative Schizotypy composite using two PID-5 scales: Withdrawal (10 items) and Restricted Affectivity (seven items); these scales correlated .56. Second, we formed a Positive Schizotypy composite by combining scores on the PID-5 Eccentricity (13 items), Cognitive and Perceptual Dysregulation (12 items), and Unusual Beliefs and Experiences (eight items) scales; correlations among these scales ranged from .63 to .77 (mean $r = .70$). Coefficient alphas for the PID-5 scales used to create these psychoticism composites ranged from .74 to .90 in this sample. Lastly, we report data on two measures of mania: the five-item Mania ($\alpha = .88$) and the five-item Euphoria ($\alpha = .75$) scales from the IDAS-II. These scales correlate moderately to strongly with each other ($r = .46$ in this sample), but show very different correlates. Most notably, Mania is strongly associated with indicators of negative emotionality, whereas Euphoria is linked to elevated levels of positive emotionality (Watson et al., 2012). Therefore, we analyzed them separately here.

Measures completed at Phase 3. We again report data on many of the same internalizing indicators that were assessed in Phase 2. The participants were retested on the IDAS-II in Phase 3; thus, we again used the six relevant IDAS-II scales (Dysphoria, Suicidality, Insomnia, Appetite Gain and Loss, Lassitude) to assess depression (αs ranged from .77 to .90). In addition, we present data on several anxiety symptom measures, including the CAT-PD-SF Anxiousness scale (seven items; e.g., "feel my worry is out of control"; $\alpha = .86$), which parallels the GAD content assessed by PID-5 Anxiousness. Furthermore, the IDAS-II Social Anxiety (six items; $\alpha = .85$) and Panic (eight items; $\alpha = .87$) scales were included again, as well as a PTSD composite based on the IDAS-II Traumatic Intrusions ($\alpha = .85$) and Traumatic Avoidance ($\alpha = .90$) scales ($r = .58$) and an OCD composite created using the IDAS-II Checking ($\alpha = .77$), Ordering ($\alpha = .80$), and Cleaning ($\alpha = .87$) scales (mean $r = .65$ among these three OCD scales).

In regard to externalizing psychopathology, we used CAT-PD-SF scales to create two different externalizing composites paralleling those created earlier from the PID-5 (αs for these CAT-PD-SF scales ranged from .75 to .82). We combined the Callousness (seven items) and Manipulativeness (which includes both manipulativeness and deceitfulness content; e.g., "deceive

people"; six items) scales to create an Antagonism composite (r = .69 between scales). Second, we created a Disinhibition composite using the Irresponsibility (seven items), Nonperseverance (six items), and Nonplanfulness (six items) scales (mean r = .59 among scales). Lastly, we again created two measures broadly related to psychosis/schizotypy. First, we created a Negative Schizotypy composite using two strongly correlated (r = .66) CAT-PD-SF scales: Social Withdrawal (six items; α = .77) and Emotional Detachment (seven items; α = .80). Second, we created a Positive Schizotypy composite using the CAT-PD-SF Unusual Experiences (seven items; α = .84), Fantasy Proneness (six items; α = .79), and Cognitive Problems (eight items; α = .83) scales (mean r = .59 among scales). We also included IDAS-II Mania (α = .83) and Euphoria (α = .77) as indicators of bipolar disorder.

Results

Overview

Data analyses. We report four series of analyses. First, we present the results of structural analyses of the DERS. We examined the structure of the six DERS subscales because they showed strong interrelations. For instance, the DERS Limited Access to Emotion Regulation Strategies subscale correlated ≥.70 with Difficulties Engaging in Goal-Directed Behavior (r = .71) and Impulse Control Difficulties (r = .75), and also correlated strongly with Nonacceptance of Emotional Responses (r = .69). In addition, the Difficulties Engaging in Goal-Directed Behavior and Impulse Control Difficulties scales correlated .62, whereas Nonacceptance of Emotional Responses correlated .54 and .53 with Difficulties Engaging in Goal-Directed Behavior and Impulse Control Difficulties, respectively. In light of these very strong associations, it makes sense to identify latent dimensions underlying the DERS subscales, as focusing on reporting relations for two meaningful and well-defined factors (discussed below) simplified the presentation of our results.

Second, we present relations between the DERS factors and personality. We began by explicating the relations between the DERS factors and personality at the domain level. We present bivariate relations (using standard Pearson product–moment correlations) between the DERS factors and all five-factor model domain composite scores, as well as standardized β weights from multiple regressions in which all five-factor model domain composites were entered simultaneously as predictors of DERS factors. Next, we examined the relations between neuroticism facets and the DERS factors. Given that there is not a consensus on how neuroticism is assessed at the facet level, we analyzed the structure of neuroticism at the lower order level using facet scales from three personality inventories (i.e., the NEO-PI-3, FI-FFM, and TAI) prior to examining the relations between DERS factors and neuroticism. Following the presentation of these structural results, we examined the relations between these neuroticism facet factors and the DERS, presenting both bivariate relations between DERS factors and neuroticism, as well standardized β weights from multiple regressions in which all neuroticism facet scores were entered simultaneously as predictors of each DERS factor. These regressions allowed us to determine the overall extent to which variance in DERS factor scores was explained by the neuroticism facets.

Third, we present bivariate relations for both the DERS factors and the five-factor model personality domain composites with both self- and interview-rated psychopathology. For the self-report psychopathology scales, these are standard Pearson product–moment correlations. However, we report polyserial correlations for the dichotomous interview variables. Polyserial correlations estimate the linear association between two normally distributed latent continuous variables when one of the observed variables is ordinal and the other is continuous (Olsson, Drasgow, & Dorans, 1982). They retain the relative rank order information provided by Pearson correlations, but are unaffected by prevalence rate differences.

Lastly, to determine the unique incremental information provided by each DERS factor and five-factor model domain composite score, we conducted a series of multiple regressions with all seven variables (i.e., the two DERS factors and all five personality domain composite scores) included simultaneously as predictors. This allowed us to establish the unique predictive power of each predictor, controlling for the influence of the others. These regressions were conducted to address our third goal of determining the degree to which the DERS demonstrates incremental predictive power when taking into account its overlap with personality, and vice versa. We report standardized β weights from multiple regression analyses predicting self-report scales. For dichotomous interview ratings, we present odds ratios (*OR*s) from logistic regression analyses. *OR*s significantly smaller (larger) than 1.00 indicate that higher scores on a predictor were associated with a lower (higher) likelihood of receiving a diagnosis.

We focus primarily on the regression results (i.e., the final series of analyses presenting both standardized βs and *OR*s) in interpreting the nature of the relations between the trait scores and psychopathology, as such analyses more directly address our goal of determining the unique, incremental predictive power of the DERS subscales and personality. Thus, we provide a brief overview of the bivariate psychopathology relations for DERS factors and personality domains, and proceed to provide a more in-depth review of our regression results. Given that we report a large number of associations, we focused on broad patterns of relations that varied within and across the DERS factors and personality traits (e.g., did neuroticism emerge as a stronger predictor of internalizing psychopathology than did the DERS factors), rather than focusing on whether these measures were significant predictors of individual scales. That being said, we also report statistical significance at a very conservative level (i.e., $p < .0001$) in all tables reporting correlational and regression results given the large number of relations presented.

Missing data. Before conducting analyses (including computing coefficient alphas), we handled missing data using a multiple-imputation program (PROC MI) from SAS Version 9.4. Only small percentages of participants were missing any data for most scales, and in the majority of such cases, participants generally were missing only a small percentage of a scale's items. For example, only 19 of 299 participants (6.4%) were missing any items on the 36-item DERS; notably, 10 of these 19 participants were missing only one item and another five participants were missing between two and four items. Similarly, 91 participants had at least one missing item on the 240-item NEO-PI-3, but 78 of these participants were missing four or fewer items. We performed imputations at the item level when scales were missing 20% or fewer of their items. In rare cases with more extensive missing data

(e.g., four of 299 participants [1.3%] were missing more than 20% of the DERS items), we conducted scale-level imputations.

Factor Analysis of the DERS Subscales

Determining the number of factors. To determine the number of factors to extract, we conducted a principal components analysis on the DERS subscales. Parallel analysis (O'Connor, 2000) and Velicer's (1976) minimum average partial (MAP test) were used to determine the optimal number of factors to extract. Note that we report results on the DERS factor structure from principal factor analyses subsequently; however, we used principal components analysis to determine the number of factors to extract because conducting parallel analysis and the MAP test with principal factor analysis tends to overestimate the number of factors to be extracted (see Timmerman & Lorenzo-Seva, 2011). First, in parallel analysis, the observed eigenvalues from the principal components analysis are compared to the eigenvalues from random data sets with the same sample size and number of variables. Results indicated that a maximum of two factors should be extracted, as the second eigenvalue from the principal components analysis (1.27) exceeded its random counterpart (1.10), but the third did not (.50 vs. 1.03).

Next, the MAP test is based on analyzing residual correlation matrices by computing the average squared partial correlation for a range of solutions reflecting an increasing number of factors; the optimal solution is the one that yields the lowest mean value. Results indicated that the mean squared partial correlation was smallest for a one-factor (.091) solution. Thus, the MAP test indicated that only a single factor should be extracted, even though the parallel analysis results indicated that up to two factors should be extracted. Given the goals of our study (i.e., determining the psychopathology relations for the DERS and its predictive power beyond personality), we decided to examine both one- and two-factor solutions in subsequent analyses, as we were interested in seeing if the DERS subscales defined two interpretable factors.

Description of the factors. Next, we conducted exploratory principal factor analyses using squared multiple correlations as the initial communality estimates. The one-factor solution indicated that the DERS subscales defined a general dimension, as all six scales loaded positively on this factor (see Table 1). However, it should be noted that the Lack of Emotional Awareness scale (e.g., "attentive to my feelings") showed a notably weaker loading (.28) on this factor than did the other five DERS subscales (all loadings ≥ .65), indicating that it was a relatively poor marker of this general dimension.

Next, we extracted two factors and rotated them to oblique simple structure using promax (power = 3). As shown in Table 1, this solution yielded a clear two-factor structure. The first factor was marked strongly by the four DERS subscales assessing maladaptive cognitive (Limited Access to Emotion Regulation Strategies, e.g., "believe I'll end up feeling depressed when upset"), behavioral (Difficulties Engaging in Goal-Directed Behavior, e.g., "difficulty working when I'm upset"; Impulse Control Difficulties, e.g., "lose control when I'm upset"), and affective (Nonacceptance of Emotional Responses; e.g., "feel guilty for feeling upset") responses to experiencing high levels of negative affect. Thus, we labeled this factor *Problematic Responses*. The two DERS subscales marking the second factor assess content related to problems associated with identifying (Lack of Emotional Clarity, e.g., "no idea how I am feeling") and being aware of one's emotional experiences (Lack of Emotional Awareness, e.g., "attentive to my feelings"). We therefore labeled this second factor *Poor Recognition*. We computed regression-based factor scores to model these two factors in subsequent analyses, and these factor scores correlated strongly with one another (r = .53).[4]

Given that (a) the Poor Recognition factor represented a fairly narrow dimension with only two clear markers and (b) parallel analysis and the MAP test were equivocal as to whether a one- or two-factor solution was optimal, we also conducted confirmatory factor analyses—which provided us with a number of goodness-of-fit statistics not available when using an exploratory principal axis factoring approach—to determine if the DERS subscales better fit a one- or two-factor model. Note that the factors were allowed to correlate in the two-factor model.

To determine which model better fit the data, we report the root mean square error of approximation (RMSEA), Bentler's comparative fix index (CFI), the Tucker–Lewis Index (TLI), the standardized root mean squared residual (SRMR), as well as model chi-squares for both models. In interpreting these indices, RMSEA values <.05 indicate close fit and values >.10 indicate poor fit, with values in between this range (i.e., .05 to .10) indicating acceptable fit (Hu & Bentler, 1999; MacCallum, Browne, & Sugawara, 1996); values for the CFI and TLI ≥ .95 are considered to indicate good fit as are SRMR values ≤ .08 (Hu & Bentler, 1999).

Results from the CFA analyses indicated that the two-factor model, $\chi^2(8) = 24.29$, $p = .002$, RMSEA = .08, CFI = .98, TLI = .97, and SRMR = .04, fit the data well and was superior to the one-factor model, $\chi^2(9) = 151.05$, $p > .0001$, RMSEA = .23, CFI = .85, TLI = .74, and SRMR = .11, according to every metric. Therefore, given these CFA results and that we were able to identify two interpretable DERS factors, we adopted the previ-

Table 1
Promax Factor Loadings of the Difficulties in Emotion Regulation Scale Subscales

Scale	I	II	Single factor
Limited Access to Emotion Regulation Strategies	**.89**	.05	**.90**
Nonacceptance of Emotional Responses	**.78**	−.12	**.69**
Difficulties Engaging in Goal-Directed Behavior	**.78**	−.05	**.73**
Impulse Control Difficulties	**.75**	.09	**.78**
Lack of Emotional Awareness	−.16	**.75**	.28
Lack of Emotional Clarity	.30	**.64**	**.67**

Note. N = 299. Loadings ≥ |.40| appear in boldface.

[4] Our sample was diverse in regard to a number of demographic variables (e.g., nearly half of our sample identified as Black/African-American). Therefore, we also examined the DERS structure and relations taking into account demographic variables such as race and psychiatric treatment history, finding that the DERS structure was both (a) invariant across demographic subsamples (i.e., Black/African-Americans vs. Caucasians; treatment history vs. no treatment history) and (b) similar in these subsamples to the overall sample reported on here. Likewise, personality-psychopathology relations were similar in these subsamples to the overall sample.

ously described two-factor solution of Problematic Responses and Poor Recognition as our framework in subsequent analyses.

Emotion Regulation–Personality Relations

Relations with personality domains. The associations between the DERS factors and five-factor model domain composite scores are shown in Table 2. Both DERS factors correlated most strongly with neuroticism, with the Problematic Responses factor displaying a stronger association than Poor Recognition (rs = .62 and .43, respectively; z for difference = 4.25, $p < .0001$). In addition, both factors correlated moderately with agreeableness and conscientiousness (rs ranged from −.36 to −.41). We also conducted multiple regression analyses in which domain composites were entered as predictors of DERS factors as stated. It is notable that personality domains explained more variance in Problematic Responses than they did in Poor Recognition (R^2 = .40 and .26, respectively) in these analyses. Neuroticism strongly predicted Problematic Responses (β = .60) but was a much weaker predictor of Poor Recognition (β = .19). Other personality domain composites were weak predictors of both DERS factors.

Neuroticism facet relations. As discussed, to clarify further how the DERS factors relate to basic personality, we also examined their relations with neuroticism facets. We present the results of structural analyses of the facet level structure of neuroticism next, followed by the neuroticism facet and DERS factor relations.

Determining the number of factors. Parallel analysis and the MAP test again were used to determine the optimal number of factors to extract. Once more, although we subsequently report results on the neuroticism facet level factor structure using principal factor analyses, we again used principal components analyses to determine the number of factors to extract. Parallel analysis results indicated that only a single factor should be extracted, as only the first eigenvalue from the principal components analysis (9.83) exceeded its random counterpart (1.52); however, the MAP test indicated that the mean squared partial correlation was smallest for a three-factor (.026) solution. Therefore, we examined solutions ranging from one to three factors to determine which was the most interpretable and psychologically meaningful.

Description of the factors. Next, we conducted exploratory principal factor analyses using squared multiple correlations as the initial communality estimates. The one-factor solution indicated that the neuroticism facet scales defined a strong general dimension, as all 17 scales loaded >.50 on a general factor. Next, we extracted two and then three factors, rotating both solutions to oblique simple structure using promax (power = 3). In the two-factor solution, depression and anxiety facet scales (e.g., NEO-PI-3 Anxiety and Depression) combined to define the first factor, whereas the second factor was marked most strongly by indicators of anger (e.g., TAI Anger, NEO-PI-3 Angry Hostility). Finally, the three-factor solution (see Table 3) yielded three well-defined and easily interpretable factors: *Anger* (marked most strongly by TAI Anger and FI-FFM Anger Proneness), *Anxiety* (marked most strongly by FI-FFM Anxiety, FI-FFM Somatic Complaints, and NEO-PI-3 Anxiety), and *Depression* (marked most strongly by NEO-PI-3 Depression and TAI Regret).[5] Given that this final solution produced three well-defined, interpretable dimensions, we adopted it as the basis for subsequent analyses. We computed regression-based factor scores to model these three factors in subsequent analyses, and these factor scores were strongly intercorrelated (rs ranged from .63 to .77, mean r = .69).

Relations with neuroticism facets. As shown in Table 4, the neuroticism facet factor scores displayed strong, nonspecific associations with the DERS Problematic Responses factor (rs ranged from .54 to .59), and showed comparatively weaker correlations with Poor Recognition (rs ranged from .33 to .46). Similarly, the regressions indicated that the neuroticism facets explained more variance in Problematic Responses (R^2 = .40) than they did in Poor Recognition (R^2 = .22). The regressions also showed that the Depression facet displayed the most predictive power in predicting both DERS factors, showing much stronger relations than other facets with Poor Recognition. Notably, the regressions indicated that a significant amount of variance in the DERS factors—for Poor Recognition, especially—is not explained by neuroticism facets. These results suggest that although the DERS overlaps considerably with neuroticism, much of the variance in the DERS factors is not accounted for by its facets. However, the relations between these neuroticism facets and the DERS factors likely were attenuated somewhat as a result of these measures being completed roughly 10 months apart.

Taken together, results depicted in Tables 2 (domain relations) and 4 (neuroticism facet relations) indicated that (a) neuroticism facets generally displayed nonspecific relations with the DERS factors (i.e., all facets correlated strongly with Problematic Responses and moderately with Poor Recognition, although Depression showed some specificity with Poor Recognition in the regressions), (b) the neuroticism domain score had correlations with the DERS factors that were similar or stronger in magnitude to those for any of its facets, and (c) the DERS factors also correlated moderately with agreeableness and conscientiousness. Therefore, we focused on examining the domain-level relations for neuroticism and the other higher-order personality composites in subsequent analyses.[6]

Bivariate Analyses: Relations for Emotion Regulation and Personality

Psychopathology correlations for the DERS factors and personality domain composites are reported in Tables 5 (self-ratings) and 6 (interview ratings). The DERS factors generally showed positive associations with all psychopathology indicators, with Problematic

[5] We considered including the DERS subscales within these factor analyses as a more direct method of determining if they emerged as distinct from neuroticism facets; however, we opted against doing so given that it would have been difficult to determine if DERS-based factors were distinguishable from neuroticism due to the time lag between the completion of these measures or because of true differences in the variance assessed by these measures. Because of this ambiguity, we opted to restrict these analyses to the neuroticism facet scales.

[6] Although we focused on domain-level personality relations, we also examined bivariate relations for the neuroticism facets and conducted a parallel set of regressions in which the neuroticism facets were entered simultaneously with the DERS factors and other personality domains to predict self- and interview-rated psychopathology. Results from these analyses indicated that (a) relations for neuroticism facets generally were weaker than those for neuroticism domain scores in both the correlations and regressions and (b) including the neuroticism facets instead of domain scores in the regressions did not reduce the predictive power of the DERS factors. Thus, these results supported focusing on neuroticism domain scores in subsequent analyses.

Table 2
Associations Between the Emotion Regulation Factors and Five-Factor Model Domain Scores

Scale	Neuroticism	Conscient	Agreeableness	Extraversion	Openness	Joint R^2
Bivariate relations						
Problematic Responses	**.62**	**−.36**	**−.41**	−.18	−.09	
Poor Recognition	**.43**	**−.38**	**−.38**	**−.27**	−.17	—
Multiple regressions						
Problematic Responses	**.60****	.04	−.12*	.07	−.06	**.40**
Poor Recognition	.19*	−.12	−.22*	−.10	−.10	.26

Note. $N = 295$. Values ≥ |.30| appear in boldface. Correlations ≥ |.17| are significant at $p < .05$ and correlations ≥ |.27| are significant at $p < .0001$. Values shown from the multiple regression analyses are standardized β weights. Standardized βs significant at $p < .05$ are starred (*); βs significant at $p < .0001$ are double-starred (**). Conscient = Conscientiousness.

Responses generally displaying stronger associations with both self-report and interview ratings of psychopathology than did Poor Recognition. Although these two factors showed positive relations with a range of psychopathology, they showed some specificity in their relations. For example, Problematic Responses correlated more strongly with depressive disorder diagnoses (i.e., MDD and dysthymic disorder; rs = .53 and .46, respectively), manic episodes ($r = .52$), GAD ($r = .49$), and PTSD ($r = .46$) than it did with other diagnoses. As expected, the DERS factors also tended to correlate more strongly with measures completed at Phase 3 than at Phase 2.

Similar to the emotion regulation dimensions, neuroticism correlated strongly with a broad range of psychopathology. Neuroticism generally displayed stronger relations with psychopathology assessed at Phase 2 than did the DERS factors; in contrast, the Problematic Responses factor showed stronger associations than neuroticism with Phase 3 measures in many cases. Unlike neuroticism, the other personality traits generally correlated negatively with psychopathology, showing specificity in several instances. For example, agreeableness had particularly strong negative associations with the Antagonism composite ($r = -.68$ and $-.63$ at Phases 2 and 3, respectively); conscientiousness was substantially linked to the Disinhibition composite ($r = -.62$ and $-.73$, respectively); and extraversion showed notable correlations with the Negative Schizotypy composite ($r = -.46$ and $-.56$, respectively) and with some internalizing indicators (e.g., IDAS-II Social Anxiety). Consistent with previous research (e.g., Kotov et al., 2010), openness showed relatively weak associations with psychopathology.

Table 3
Promax Factor Loadings of the Neuroticism Facet Scales

Scale	I	II	III
TAI Anger	**.91**	−.01	.04
FI-FFM Anger Proneness	**.81**	.24	−.09
NEO-PI-3 Angry Hostility	**.77**	−.01	.15
TAI Mistrust	**.56**	−.05	.13
FI-FFM Envy	.36	.27	.08
FI-FFM Anxiety	.06	**.84**	.02
FI-FFM Somatic Complaints	.07	**.76**	−.04
NEO-PI-3 Anxiety	−.06	**.72**	.23
TAI Anxiety	.06	**.63**	.25
TAI Lassitude	.13	.34	.30
NEO-PI-3 Depression	.06	.11	**.78**
TAI Regret	.21	−.07	**.71**
NEO-PI-3 Self-Consciousness	−.12	.27	**.63**
NEO-PI-3 Vulnerability	.05	.24	**.56**
TAI Depression	.25	.20	**.52**
NEO-PI-3 Impulsiveness	.28	−.01	**.46**
FI-FFM Depression	.21	.32	**.45**

Note. $N = 295$. Loadings ≥ |.40| appear in boldface. FI-FFM = Faceted Inventory of the Five-Factor Model; NEO-PI-3 = NEO Personality Inventory-3; TAI = Temperament and Affectivity Inventory.

Regressions: Explicating the Unique Predictive Power of DERS Factors and Personality

Emotion regulation. Results of our regressions are reported in Tables 7 (multiple regressions for self-report ratings) and 8 (logistic regressions for interview ratings). These data are interesting in several ways. First, the Poor Recognition factor displayed relatively little incremental predictive power for most psychopathology when its overlapping variance with the other scores was taken into account. For instance, this factor only had one relation ≥ |.30| with any of the self-report psychopathology indicators (i.e., β = .37 for the Negative Schizotypy composite from Phase 3) and emerged as a weak predictor of most diagnostic measures. In contrast, the Problematic Responses factor demonstrated considerable incremental predictive power in these analyses, although it generally showed much stronger relations with self-report indicators completed at Phase 3 than Phase 2. In regard to its relations with self-report indicators completed at Phase 3, Problematic Responses most strongly predicted the PTSD composite and IDAS-II

Table 4
Associations Between the Neuroticism Facet Factors and the Emotion Regulation Factors

Scale	Anger	Anxiety	Depression	Joint R^2
Bivariate relations				
Problematic Responses	**.54**	**.54**	**.59**	—
Poor Recognition	**.36**	**.33**	**.46**	—
Multiple regressions				
Problematic Responses	.23*	.13	**.33****	**.40**
Poor Recognition	.10	−.10	**.46****	.22

Note. $N = 295$. Values ≥ |.30| appear in boldface. All correlations are significant at $p < .0001$. Values shown from the multiple regression analyses are standardized β weights. Standardized βs significant at $p < .05$ are starred (*); βs significant at $p < .0001$ are double-starred (**).

Table 5
Correlations for Emotion Regulation and Personality With Self-Rated Psychopathology

Scale	Responses	Recognition	Neuroticism	Conscient	Agreeableness	Extraversion	Openness
Internalizing							
PID-5/CAT-PD Anxiousness	**.57/.67**	.39/**.44**	**.71/.66**	−.31/−.27	−.27/−.24	−.25/−.29	−.03/−.10
IDAS-II Dysphoria	**.51/.70**	.37/**.55**	**.68/.60**	**−.48/−.37**	−.28/−.29	−.29/−.29	.04/−.05
IDAS-II Lassitude	.39/**.51**	.27/.38	**.59/.47**	−.38/−.27	−.27/−.28	−.21/−.16	.01/.01
IDAS-II Social Anxiety	.38/**.62**	.30/**.50**	**.55/.51**	−.27/−.27	−.14/−.28	**−.41**/−.35	−.05/−.15
IDAS-II Panic	**.43/.62**	.31/**.46**	**.53/.47**	−.29/−.21	−.24/−.28	−.19/−.20	.08/−.09
PTSD Composite	**.49/.62**	.26/.38	**.52/.40**	−.20/−.14	−.18/−.20	−.14/−.14	−.03/−.07
IDAS-II Suicidality	**.40/.54**	.30/.39	**.45/.36**	−.24/−.24	−.28/−.29	−.21/−.14	.09/−.03
IDAS-II Insomnia	.36/**.40**	.21/.29	**.42/.33**	−.27/−.12	−.20/−.18	−.09/−.15	.07/−.06
IDAS-II Appetite Loss	.34/.34	.28/.26	.34/.25	−.27/−.11	−.22/−.15	−.14/−.14	.04/−.01
OCD Composite	.29/**.43**	.21/.34	.28/.27	.04/.04	−.17/−.24	−.02/−.06	−.11/−.16
IDAS-II Appetite Gain	.18/.36	.07/.25	.26/.33	−.15/−.26	−.06/−.28	−.06/−.09	.01/−.10
Agoraphobia Composite[a]	**.44**	.15	.39	−.07	−.03	−.30	−.12
Externalizing							
Disinhibition Composite	**.61/.61**	**.50/.53**	**.64/.61**	**−.62/−.73**	**−.49/−.46**	−.12/−.25	.03/−.04
Antagonism Composite	.36/**.43**	.37/**.44**	.36/.36	−.30/−.32	**−.68/−.63**	.14/−.00	.04/−.08
Alcohol Composite[a]	.21	.28	.26	−.23	−.34	.04	.02
Drug Use[a]	.10	.18	.20	−.30	−.21	−.05	.08
Psychoticism							
Pos Schizotypy Composite	**.54/.66**	**.41/.50**	**.47/.56**	−.26/−.38	**−.40**/−.39	−.06/−.19	−.08/.02
IDAS-II Mania	**.46/.61**	.29/**.40**	**.51/.49**	−.30/−.28	−.29/−.37	−.01/−.06	.03/−.07
Neg Schizotypy Composite	.39/**.47**	**.44/.58**	.39/**.48**	−.27/−.36	−.37/−.26	**−.46/−.56**	−.13/−.15
IDAS-II Euphoria	.15/.30	.02/.16	.07/.17	.05/.00	−.21/−.29	.32/.23	.02/−.04

Note. $N = 288$. Correlations ≥ |.40| appear in boldface. Correlations ≥ |.12| are significant at $p < .05$ and correlations ≥ |.23| are significant at $p < .0001$; correlations before and after slash marks (/) are those with Phase 2 and 3 measures, respectively. Responses = Problematic Responses; Recognition = Poor Recognition; Conscient = Conscientiousness; Neg = Negative; Pos = Positive.
[a] Measure completed at Phase 2 only.

Panic, Suicidality, and Dysphoria (all βs ≥ .45); in contrast, this factor showed its weakest relations with the Antagonism composite and other scales lacking significant affective content (e.g., IDAS-II Appetite Gain and Loss; substance use indicators from Phase 2).

Problematic Responses' relations generally were stronger with the Phase 3 self-report measures, but it still emerged as a noteworthy predictor of several Phase 2 self-report measures, including the Agoraphobia and Positive Schizotypy composites (βs = .40 and .31, respectively); furthermore, Problematic Responses also showed notable positive relations with PTSD, Dysthymic Disorder, MDD, and Psychotic Disorder (*OR*s ranged from 2.15 to 2.73) assessed via the clinical interview at Phases 1 and 2. These relations are especially impressive given that this factor—which was defined by DERS subscales completed roughly 9.5 and 10 months after Phases 1 and 2—displayed noteworthy predictive power above and beyond per-

Table 6
Polyserial Correlations for Emotion Regulation and Personality With Interview Ratings

Scale	Responses	Recognition	Neuroticism	Conscient	Agreeableness	Extraversion	Openness
Internalizing							
MDD	**.53****	.33*	**.48****	−.34*	−.32*	−.22*	−.13
GAD	**.49****	.39**	**.64****	**−.44****	−.29*	−.22*	−.00
PTSD	**.46****	.34*	**.56****	−.17	−.22	−.17	.18
Dysthymic disorder	**.46****	.31*	.37*	**−.19**	−.15	−.37*	.03
Panic disorder	.35*	.32*	**.44****	−.27*	−.11	−.23*	−.03
Social Anxiety disorder	.33*	.32*	**.41****	−.27*	−.14	−.29*	.10
Agoraphobia	.28*	.28*	.36*	−.09	−.12	−.21*	−.16
OCD	.23	.15	.34*	.03	−.11	−.05	.08
Externalizing							
Substance use disorder	.21*	.29*	.36*	−.18	−.31*	−.02	.05
Alcohol use disorder	.09	.19*	.23*	−.13	−.27*	.09	.01
Psychoticism							
Mania	**.52****	**.43****	**.66****	**−.54****	**−.41****	−.07	.23*
Psychotic disorder	.26*	.12	.21	−.12	−.03	−.28*	.01

Note. $N = 288$. Correlations ≥ |.40| appear in boldface. Stared correlations (*) are significant at $p < .05$ and double-starred correlations (**) are significant at $p < .0001$. Positive correlations indicate that higher scores on a factor/domain composite were associated with an increased likelihood of receiving diagnostic ratings. Responses = Problematic Responses; Recognition = Poor Recognition; Conscient = Conscientiousness; GAD = generalized anxiety disorder; PTSD = posttraumatic stress disorder; MDD = major depressive disorder; OCD = obsessive–compulsive disorder.

Table 7
Standardized β Weights From Multiple Regression Analyses Predicting Self-Rated Psychopathology

Scale	Responses	Recognition	Neuroticism	Conscient	Agreeableness	Extraversion	Openness
Internalizing							
PID-5/CAT-PD Anxiousness	**.18/.40**	**.10/.11**	**.75/.55**	**.19/.21**	**.14/.15**	.01/−.06	.05/.02
IDAS-II Dysphoria	**.15/.47**	.07/**.23**	**.56/.26**	−.11/.02	**.14/.12**	−.03/−.07	**.13**/.08
IDAS-II Lassitude	.05/**.30**	.02/**.13**	**.57/.28**	−.05/.07	.07/.01	.03/−.01	.05/.09
IDAS-II Social Anxiety	.07/**.42**	.09/**.21**	**.53/.16**	**.17/.16**	.12/−.01	**−.27/−.23**	**.12**/.02
IDAS-II Panic	**.15/.45**	.08/**.20**	**.48/.18**	.07/**.16**	.06/.01	−.04/−.06	**.15**/.02
PTSD Composite	**.27/.57**	.01/.10	**.52**/.12	**.14/.17**	**.13**/.06	.06/−.03	.01/.02
IDAS-II Suicidality	**.17/.45**	.08/**.14**	**.29**/−.02	**.15**/.02	−.11/−.08	**−.19**/−.06	**.21**/.06
IDAS-II Insomnia	**.19/.28**	−.01/.11	**.34/.20**	−.06/**.17**	.07/.00	.06/−.07	.09/.02
IDAS-II Appetite Loss	**.17/.27**	.11/.11	.13/.06	−.07/.12	−.01/−.02	−.04/−.11	.10/.07
OCD Composite	.12/**.30**	.10/**.19**	**.37/.17**	**.35/.41**	−.05/**−.14**	.07/−.02	−.08/−.09
IDAS-II Appetite Gain	.05/**.22**	−.04/.02	**.32**/.10	−.04/−.11	.12/−.07	.08/.08	.01/−.09
Agoraphobia Composite[a]	**.40**	−.12	**.34**	**.26***	**.15**	**−.23**	−.00
Externalizing							
Disinhibition Composite	**.28/.34**	**.14/.14**	**.23**/.03	**−.40/−.58**	−.02/.02	**.22/.10**	.02/.00
Antagonism Composite	.05/**.16**	**.14/.19**	.05/−.06	−.02/−.03	**−.58/−.50**	**.21**/.10	.02/−.05
Alcohol Composite[a]	−.05	**.19**	.13	−.07	**−.20**	**.15**	.01
Drug Use[a]	−.09	.11	.04	**−.25**	−.07	.05	.09
Psychoticism							
Pos Schizotypy Composite	**.31/.42**	**.16/.18**	**.22/.20**	.08/−.02	**−.14**/−.05	.04/−.02	**.13/.11**
IDAS-II Mania	**.20/.43**	.04/.10	**.47/.22**	−.06/.01	.07/−.05	**.25/.16**	.00/−.05
Neg Schizotypy Composite	**.15/.18**	**.21/.37**	−.03/.04	**.21/.12**	**−.33**/−.07	**−.51/−.51**	**.12/.13**
IDAS-II Euphoria	.12/**.23**	−.04/.03	.12/.13	.05/.13	**−.14/−.18**	**.40/.33**	−.11/**−.12**

Note. $N = 288$. Values significant at $p < .05$ appear in boldface; values significant at $p < .0001$ appear in boldface and are underlined. Values before and after slash marks (/) are those with Phase 2 and 3 measures, respectively. Responses = Problematic Responses; Recognition = Poor Recognition; Conscient = Conscientiousness; Neg = Negative; Pos = Positive.
[a] measure completed at Phase 2 only.

sonality domain scores that were completed concurrently (for Phase 1 interview measures) or in close proximity (for Phase 2 interview and self-report measures) to these psychopathology measures.

Personality. The personality domain scores showed interesting trends in our regressions, and similar to the DERS factors, they generally displayed much stronger predictive power for self-report psychopathology measures completed in closer proximity to them (i.e., Phase 1 and 2 measures). Neuroticism emerged as an especially strong predictor of Phase 2 self-report measures with a strong affective component (e.g., Anxiousness, Dysphoria, Mania), and even emerged as the strongest overall predictor of CAT-PD-SF Anxiousness (β = .55), which was completed at Phase 3 roughly 10 months later. Furthermore, it was the most robust overall predictor of the interview variables in the logistic regressions. More specifically, neuroticism emerged as a very powerful positive predictor of GAD (*OR* = 4.08), consistent with its strong

Table 8
Odds Ratios From Logistic Regression Analyses Predicting Interview Ratings

Scale	Responses	Recognition	Neuroticism	Conscient	Agreeableness	Extraversion	Openness
Internalizing							
GAD	1.45	1.43	**4.08**	.74	**1.73**	1.43	.87
PTSD	**2.28**	.99	**4.77**	2.09	1.65	.93	1.21
Dysthymic disorder	**2.73**	.99	1.20	1.49	.90	**.41**	1.48
MDD	**2.58**	1.01	1.30	.99	.80	.66	**1.66**
OCD	1.52	.80	**4.09**	2.21	1.61	1.03	.99
Panic disorder	1.34	1.57	**2.80**	1.01	1.89	1.16	.91
Agoraphobia	1.56	1.14	**2.69**	1.53	1.59	.92	.67
Social anxiety disorder	1.26	1.54	1.85	1.19	1.15	.69	1.46
Externalizing							
Alcohol use disorder	**.56**	1.59	**2.03**	1.04	.78	**1.64**	.93
Substance use disorder	.70	**1.83**	**2.17**	1.17	.73	1.32	1.10
Psychoticism							
Mania	1.43	1.94	**3.47**	**.50**	1.21	1.87	1.56
Psychotic disorder	**2.15**	.72	1.08	1.14	1.12	.53	1.21

Note. $N = 295$ for all other diagnoses. Values significant at $p < .05$ appear in boldface; values significant at $p < .0001$ appear in boldface and are underlined. Responses = Problematic Responses; Recognition = Poor Recognition; Conscient = Conscientiousness; Neg = Negative; Pos = Positive; GAD = generalized anxiety disorder; PTSD = posttraumatic stress disorder; MDD = major depressive disorder; OCD = obsessive–compulsive disorder. $N = 288$ for GAD, dysthymic disorder, MDD, mania, and psychotic disorder.

positive relation with self-reported anxiousness. It also was a notable positive predictor of manic episodes (*OR* = 3.47), several internalizing disorders (e.g., PTSD and OCD; *OR*s = 4.77 and 4.09, respectively), and alcohol and substance use disorder (*OR*s = 2.03 and 2.17, respectively).

Although other personality domains displayed relatively weak relations with most psychopathology indicators, they displayed impressive specificity in several instances. For example, extraversion emerged as a robust predictor of both Phase 2 and Phase 3 Negative Schizotypy composite (both βs = −.51) and IDAS-II Euphoria scores (βs = .40 and .33, respectively) and also was a strong negative predictor of interview-rated dysthymic disorder (*OR* = .41). Agreeableness and conscientiousness again displayed considerable specificity in their relations with the self-reported Antagonism and Disinhibition composites completed at both Phases 2 and 3, respectively (βs = −.58 and −.50, respectively for agreeableness with antagonism; βs = −.40 and −.58, respectively for conscientiousness with disinhibition). Additionally, conscientiousness emerged as notable negative predictor of interview-rated mania (*OR* = .50) and agreeableness also was actually a positive predictor of GAD (*OR* = 1.73). Lastly, openness showed the least predictive power, having no relations ≥ |.25| with any of the Phase 2 or 3 self-report variables. However, it did emerge as a positive predictor of MDD diagnoses (*OR* = 1.66).

Discussion

Our goals were to determine (a) the associations between DERS subscales and five-factor model personality domains, (b) the associations between DERS subscales and neuroticism facets, and (c) the degree to which DERS subscales and personality traits demonstrate incremental predictive power for a range of psychopathology when controlling for their overlap. Our findings demonstrate the value of examining emotion regulation and personality together, as they indicated that the DERS Problematic Responses factor and neuroticism displayed predictive power beyond other personality and emotion regulation traits in a number of cases. The incremental power of Problematic Responses especially is noteworthy given that other clinical traits (e.g., perfectionism, rumination) have been found to display limited predictive power beyond neuroticism (e.g., Mahaffey et al., 2016). Thus, although neuroticism facet and domain scores correlated strongly with Problematic Responses, our findings suggested that both individual differences in (a) experiencing negative emotions and emotional reactivity (namely, neuroticism) and (b) having difficulties in responding adaptively to negative emotions (namely, Problematic Responses) have transdiagnostic explanatory power in predicting a range of psychopathology. That being said, we should note that DERS factor and personality domain scores generally showed much stronger relations with psychopathology indicators with which they were administered concurrently (i.e., at the same phase) or in close temporal proximity (i.e., across Phases 1 and 2).

Our regressions were particularly informative, as they shed light on the unique predictive power of each DERS factor and personality domain. In comparison to neuroticism, other personality traits showed limited predictive power for most psychopathology, but showed strong specificity in their psychopathology relations (e.g., agreeableness was a strong negative predictor of antagonism). Additionally, the Poor Recognition factor displayed limited predictive power in the regressions suggesting that this dimension relates weakly to psychopathology when its overlap with other DERS/personality traits is taken into account. Next, we provide more detailed summaries of the psychopathology relations for each of the seven assessed traits, focusing primarily on interpreting results from these informative regressions. We then proceed to a discussion of the broader implications of these findings.

Emotion Regulation

Problematic responses. This factor emerged as a broad predictor of psychopathology assessed at Phase 3 and also of some Phase 1 and 2 measures (e.g., self-reported agoraphobia and interview-rated PTSD and depression scores). The fact that Problematic Responses showed incremental predictive power beyond neuroticism and other traits—even of some psychopathology measures completed more than nine months earlier—is impressive. This factor showed especially strong relations with internalizing and psychoticism across assessment methods (i.e., most Phase 3 measures; Phase 2 self-reported agoraphobia and positive schizotypy; interview-rated PTSD, depression, and psychotic disorder completed at Phases 1 and 2), showing somewhat weaker links with externalizing (e.g., antagonism, substance use). These notable relations with Phase 1 and 2 psychopathology measures provided a very stringent test of Problematic Response's incremental predictive power, and suggest that difficulties responding adaptively to negative emotions are an important feature of many forms of psychopathology.

When we consider the content of scales defining the Problematic Responses factor, it makes sense that it showed incremental predictive power beyond personality. Whereas standard neuroticism items primarily measure the propensity to experience negative emotion or dysfunctional thinking styles, many of the DERS Problematic Responses items assess both (a) experiencing negative emotion, and (b) maladaptive cognitive (e.g., "believe I'll end up feeling depressed when upset"), behavioral (e.g., "become out of control when upset"), or affective responses/outcomes (e.g., "feel guilty for feeling upset") to being upset. In fact, many of the DERS items (e.g., "believe I will remain upset for a long time") assess content closely paralleling that contained in many psychopathology measures (e.g., depression and mania measures, which are defined by affective dysfunction), including many of the measures used here (e.g., the depressive disorder interview modules; IDAS-II Dysphoria assesses discouragement and self-blame). Thus, it is unsurprising that items assessing one's propensity to become hopeless, guilty, and angry in response to experiencing negative emotion and stress would associate strongly with forms of psychopathology such as MDD, dysthymic disorder, and PTSD that are characterized strongly by the presence of persistent negative emotional states and beliefs. Of course, the presence of shared content also partly explains the strong associations between neuroticism and many forms of psychopathology.

More generally, overlapping content in predictor and outcome measures has represented a conundrum for many years (Nicholls, Licht, & Pearl, 1982). As Nicholls et al. (1982) explain, overlapping content between self-report predictors and outcome measures creates a dilemma: Although one can remove shared content from predictor scales to avoid spuriously inflating correlations with outcome measures, doing so may reduce the validity of the pre-

dictor scale. In the case of the DERS, removing items with psychopathology-related content also would eliminate content tapping important forms of emotional dysregulation. This, in turn, would potentially reduce the validity of the DERS, which was constructed to be a comprehensive measure of emotional dysregulation (Gratz & Roemer, 2004, p. 43). Moreover, it is challenging to determine content that should and should not be included in emotion dysregulation measures, given that definitions of emotion regulation vary widely. Consequently, this issue highlights the importance of achieving conceptual consensus in defining and assessing emotion dysregulation (Gross & Jazaieri, 2014).

Poor recognition. This factor correlated moderately to strongly with a range of psychopathology, but its unique component showed little incremental predictive power in the regressions, even with measures completed at Phase 3. When we compare these findings with those for Problematic Responses, our data suggest that difficulties with emotional identification and awareness are less closely tied to dysfunction than are maladaptive responses to experiencing high levels of negative affect. This is consistent with meta-analytic findings indicating that maladaptive responses to experiencing negative emotion are linked more strongly to psychopathology than is acceptance of emotional experiences (Aldao et al., 2010).

Personality

Neuroticism. Neuroticism clearly was the most robust predictor of psychopathology among the personality domains, particularly in relation to the Phase 1 and Phase 2 indicators of psychopathology. Neuroticism was a robust predictor of a range of internalizing psychopathology, of interview rated mania, alcohol/substance use, and also emerged as the strongest predictor of self-reported anxiousness at Phase 3, even when taking the DERS factors into account. These relations are consistent with research indicating that elevated neuroticism is a core feature of forms of psychopathology such as anxiousness (Kotov et al., 2010).

Other five-factor model personality traits. Although other personality domains generally showed relatively weak psychopathology relations, they displayed impressive specificity in several cases, highlighting the importance of considering these domains alongside neuroticism and DERS subscales. First, extraversion displayed specificity with self-reported negative schizotypy and euphoria, as well as interview-rated dysthymic disorder. Next, agreeableness showed specificity as a negative predictor of self-reported antagonism, as did conscientiousness in predicting self-rated disinhibition. Lastly, openness demonstrated very weak psychopathology relations, although it was positively related to MDD.

Assessment and Treatment Implications of Findings

This study demonstrates not just the value in examining emotion regulation and personality together, but also in taking a transdiagnostic approach by examining relations with a broad range of psychopathology. This transdiagnostic approach is timely given the National Institute of Mental Health's recent movement aimed at advancing our knowledge of processes spanning a range of clinical syndromes (Insel et al., 2010). This approach allowed us to explicate broad *patterns* of relations for predictors, which is not possible when focusing on a limited range of symptoms or diagnoses. For instance, the Problematic Responses factor emerged as a robust predictor of several internalizing diagnoses and psychoticism, suggesting that the unique variance subsumed within this factor (e.g., poor emotional/behavioral responses to being "upset") displays specificity with these forms of psychopathology. Thus, targeting maladaptive responses to negative emotion may be especially important in the treatment of these disorders.

Our data also indicate that Problematic Responses was a stronger clinical predictor than Poor Recognition. Facilitating awareness of emotional experiences and responding adaptively to negative emotions both are targeted in cognitive–behavioral therapy and other empirically supported treatments (e.g., Beck & Haigh, 2014), but our findings suggest that it may be more important to address the latter than the former in treatment. That being said, it will be important for research to clarify the nature of the links between awareness of emotional experiences (assessed by Poor Recognition) and responding maladaptively to the experience of negative emotions (assessed by Problematic Responses), as these constructs overlap considerably ($r = .53$ in this study). Moreover, awareness of one's emotional experiences may be necessary to respond adaptively to one's emotional experiences (Sheppes, Suri, & Gross, 2015).

Related to this point, our assessment of emotion regulation relied on a cross-sectional self-report assessment of participants' views of their general abilities to (a) respond maladaptively and to struggle to achieve positive outcomes when feeling upset and (b) understand their emotions. This raises questions regarding the generalizability of our findings. In particular, ecological momentary assessment (EMA) and laboratory designs capturing the nuances and temporal flow of emotional experiences would provide a nice complement to the current findings to assess more directly whether emotional awareness is a necessary precursor to responding adaptively to negative emotional experiences. Furthermore, laboratory and EMA designs also would prove beneficial in determining how neuroticism is related to various aspects of emotional dysregulation over time—for example, before, during, and after exposure to stressors.

Limitations, Future Directions, and Conclusion

Although this study contributes to the literature by examining personality and emotion regulation traits in relation to a range of psychopathology assessed using multiple methods, it has limitations that should be noted. First, our interpretation of these findings was complicated by the fact that our emotion regulation, personality, and psychopathology measures were assessed in three different phases across a roughly 10-month interval, which likely attenuated the associations between variables that were measured at different times. In addition, although our interview assessed a range of psychopathology, we did not assess personality disorders characterized by disinhibition and antagonism (e.g., antisocial personality disorder), so we were unable to examine the robustness of the relations with these constructs across methods. Moreover, we only had self-report measures of our trait constructs. Therefore, it would be useful for future studies to incorporate informant ratings of personality and emotional dysregulation.

Next, it also will be important to consider both emotion regulation and personality together when studying psychological disorders using EMA and laboratory designs to develop a finer-

grained understanding of fluid emotional processes, as well as their relations to personality and psychopathology in specific contexts. Furthermore, it will be important for future research to address the extent to which specific emotion regulation strategies (e.g., cognitive reappraisal and suppression) display predictive power beyond personality and vice versa, given that we focused exclusively on the DERS subscales here. Lastly, although our results indicated a factor structure of Problematic Responses and Poor Recognition for the DERS, these findings are not conclusive given that we examined this structure in only a single, relatively small sample ($N = 299$).

These limitations aside, our findings demonstrate the value in examining emotion regulation and personality together, as our results indicate that they are strongly related but distinct traits showing significant incremental predictive power beyond one another. Going forward, we recommend that researchers adopt an integrated approach to studying psychopathology by examining relations for personality and emotion regulation concurrently. Doing so has the potential to further integrate the rich literatures related to these constructs, which undoubtedly will advance clinical science.

References

Aldao, A., Nolen-Hoeksema, S., & Schweizer, S. (2010). Emotion-regulation strategies across psychopathology: A meta-analytic review. *Clinical Psychology Review, 30,* 217–237. http://dx.doi.org/10.1016/j.cpr.2009.11.004

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Washington, DC: Author.

Beck, A. T., & Haigh, E. A. P. (2014). Advances in cognitive theory and therapy: The generic cognitive model. *Annual Review of Clinical Psychology, 10,* 1–24. http://dx.doi.org/10.1146/annurev-clinpsy-032813-153734

Chmielewski, M., Bagby, R. M., Markon, K., Ring, A. J., & Ryder, A. G. (2014). Openness to experience, intellect, schizotypal personality disorder, and psychoticism: Resolving the controversy. *Journal of Personality Disorders, 28,* 483–499. http://dx.doi.org/10.1521/pedi_2014_28_128

Cicchetti, D. V. (1994). Guidelines, criteria, and rules of thumb for evaluating normed and standardized assessment instruments in psychology. *Psychological Assessment, 6,* 284–290. http://dx.doi.org/10.1037/1040-3590.6.4.284

Cisler, J. M., Olatunji, B. O., Feldner, M. T., & Forsyth, J. P. (2010). Emotion regulation and the anxiety disorders: An integrative review. *Journal of Psychopathology and Behavioral Assessment, 32,* 68–82. http://dx.doi.org/10.1007/s10862-009-9161-1

Clark, L. A., & Watson, D. (1995). Constructing validity: Basic issues in objective scale development. *Psychological Assessment, 7,* 309–319. http://dx.doi.org/10.1037/1040-3590.7.3.309

Clark, L. A., & Watson, D. (1999). *The Drug Use Survey*. (Unpublished manuscript). University of Iowa, Iowa City, IA.

Ehring, T., Tuschen-Caffier, B., Schnülle, J., Fischer, S., & Gross, J. J. (2010). Emotion regulation and vulnerability to depression: Spontaneous versus instructed use of emotion suppression and reappraisal. *Emotion, 10,* 563–572. http://dx.doi.org/10.1037/a0019010

Fox, H. C., Hong, K. A., & Sinha, R. (2008). Difficulties in emotion regulation and impulse control in recently abstinent alcoholics compared with social drinkers. *Addictive Behaviors, 33,* 388–394. http://dx.doi.org/10.1016/j.addbeh.2007.10.002

Gnambs, T. (2014). A meta-analysis of dependability coefficients (test–retest reliabilities) for measures of the Big Five. *Journal of Research in Personality, 52,* 20–28. http://dx.doi.org/10.1016/j.jrp.2014.06.003

Gratz, K. L., & Roemer, L. (2004). Multidimensional assessment of emotion regulation and dysregulation: Development, factor structure, and initial validation of the Difficulties in Emotion Regulation Scale. *Journal of Psychopathology and Behavioral Assessment, 26,* 41–54. http://dx.doi.org/10.1023/B:JOBA.0000007455.08539.94

Gratz, K. L., Weiss, N. H., & Tull, M. T. (2015). Examining emotion regulation as an outcome, mechanism, or target of psychological treatments. *Current Opinion in Psychology, 3,* 85–90. http://dx.doi.org/10.1016/j.copsyc.2015.02.010

Gross, J. J., & Jazaieri, H. (2014). Emotion, emotion regulation, and psychopathology: An affective science perspective. *Clinical Psychological Science, 2,* 387–401. http://dx.doi.org/10.1177/2167702614536164

Gruber, J. (2011). Can feeling too good be bad? Positive emotion persistence (PEP) in bipolar disorder. *Current Directions in Psychological Science, 20,* 217–221. http://dx.doi.org/10.1177/0963721411414632

Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling, 6,* 1–55. http://dx.doi.org/10.1080/10705519909540118

Insel, T., Cuthbert, B., Garvey, M., Heinssen, R., Pine, D. S., Quinn, K., . . . Wang, P. (2010). Research domain criteria (RDoC): Toward a new classification framework for research on mental disorders. *The American Journal of Psychiatry, 167,* 748–751. http://dx.doi.org/10.1176/appi.ajp.2010.09091379

John, O. P., & Srivastava, S. (1999). The Big Five trait taxonomy: History, measurement, and theoretical perspectives. In L. A. Pervin & O. P. John (Eds.), *Handbook of personality* (2nd ed., pp. 102–138). New York, NY: Guilford Press.

Kotov, R., Gamez, W., Schmidt, F., & Watson, D. (2010). Linking "big" personality traits to anxiety, depressive, and substance use disorders: A meta-analysis. *Psychological Bulletin, 136,* 768–821. http://dx.doi.org/10.1037/a0020327

Krueger, R. F., Derringer, J., Markon, K. E., Watson, D., & Skodol, A. E. (2012). Initial construction of a maladaptive personality trait model and inventory for DSM–5. *Psychological Medicine, 42,* 1879–1890. http://dx.doi.org/10.1017/S0033291711002674

MacCallum, R. C., Browne, M. W., & Sugawara, H. M. (1996). Power analysis and determination of sample size for covariance structure modeling. *Psychological Methods, 1,* 130–149. http://dx.doi.org/10.1037/1082-989X.1.2.130

Mahaffey, B. L., Watson, D., Clark, L. A., & Kotov, R. (2016). Clinical and personality traits in emotional disorders: Evidence of a common framework. *Journal of Abnormal Psychology, 125,* 758–767. http://dx.doi.org/10.1037/abn0000187

Markon, K. E., Krueger, R. F., & Watson, D. (2005). Delineating the structure of normal and abnormal personality: An integrative hierarchical approach. *Journal of Personality and Social Psychology, 88,* 139–157. http://dx.doi.org/10.1037/0022-3514.88.1.139

Marks, I. M., & Mathews, A. M. (1979). Brief standard self-rating for phobic patients. *Behaviour Research and Therapy, 17,* 263–267. http://dx.doi.org/10.1016/0005-7967(79)90041-X

McCrae, R. R., Costa, P. T., Jr., & Martin, T. A. (2005). The NEO-PI-3: A more readable revised NEO Personality Inventory. *Journal of Personality Assessment, 84,* 261–270. http://dx.doi.org/10.1207/s15327752jpa8403_05

Mennin, D. S., McLaughlin, K. A., & Flanagan, T. J. (2009). Emotion regulation deficits in generalized anxiety disorder, social anxiety disorder, and their co-occurrence. *Journal of Anxiety Disorders, 23,* 866–871. http://dx.doi.org/10.1016/j.janxdis.2009.04.006

Naragon-Gainey, K., & Watson, D. (2016). What lies beyond neuroticism? An examination of the unique contributions of social-cognitive vulnerabilities to internalizing disorders. *Assessment*. Advance online publication. http://dx.doi.org/10.1177/1073191116659741

National Institute of Mental Health. (2016). *Use of Mental Health Services and Treatment Among Adults*. Retrieved from http://www.nimh.nih.gov/health/statistics/prevalence/use-of-mental-health-services-and-treatment-among-adults.shtml

Newman, M. G., & Llera, S. J. (2011). A novel theory of experiential avoidance in generalized anxiety disorder: A review and synthesis of research supporting a contrast avoidance model of worry. *Clinical Psychology Review, 31,* 371–382. http://dx.doi.org/10.1016/j.cpr.2011.01.008

Nicholls, J. G., Licht, B. G., & Pearl, R. A. (1982). Some dangers of using personality questionnaires to study personality. *Psychological Bulletin, 92,* 572–580. http://dx.doi.org/10.1037/0033-2909.92.3.572

O'Connor, B. P. (2000). SPSS and SAS programs for determining the number of components using parallel analysis and Velicer's MAP test. *Behavior Research Methods, Instruments, & Computers, 32,* 396–402. http://dx.doi.org/10.3758/BF03200807

Olatunji, B. O., & Wolitzky-Taylor, K. B. (2009). Anxiety sensitivity and the anxiety disorders: A meta-analytic review and synthesis. *Psychological Bulletin, 135,* 974–999. http://dx.doi.org/10.1037/a0017428

Olsson, U., Drasgow, F., & Dorans, N. J. (1982). The polyserial correlation coefficient. *Psychometrika, 47,* 337–347. http://dx.doi.org/10.1007/BF02294164

Rapee, R. M., Craske, M. G., & Barlow, D. H. (1994–1995). Assessment instrument for panic disorder that includes fear of sensation-producing activities: The Albany Panic and Phobia Questionnaire. *Anxiety, 1,* 114–122. http://dx.doi.org/10.1002/anxi.3070010303

Roberton, T., Daffern, M., & Bucks, R. S. (2012). Emotion regulation and aggression. *Aggression and Violent Behavior, 17,* 72–82. http://dx.doi.org/10.1016/j.avb.2011.09.006

Roberts, B. W., & DelVecchio, W. F. (2000). The rank-order consistency of personality traits from childhood to old age: A quantitative review of longitudinal studies. *Psychological Bulletin, 126,* 3–25. http://dx.doi.org/10.1037/0033-2909.126.1.3

Samuel, D. B., & Widiger, T. A. (2008). A meta-analytic review of the relationships between the five-factor model and *DSM–IV–TR* personality disorders: A facet level analysis. *Clinical Psychology Review, 28,* 1326–1342. http://dx.doi.org/10.1016/j.cpr.2008.07.002

Saunders, J. B., Aasland, O. G., Babor, T. F., de la Fuente, J. R., & Grant, M. (1993). Development of the Alcohol Use Disorders Identification Test (AUDIT): WHO collaborative project on early detection of persons with harmful alcohol consumption-II. *Addiction, 88,* 791–804. http://dx.doi.org/10.1111/j.1360-0443.1993.tb02093.x

Selzer, M. L., Vinokur, A., & van Rooijen, L. (1975). A self-administered Short Michigan Alcoholism Screening Test (SMAST). *Journal of Studies on Alcohol, 36,* 117–126. http://dx.doi.org/10.15288/jsa.1975.36.117

Sheehan, D. V., Lecrubier, Y., Sheehan, K. H., Amorim, P., Janavs, J., Weiller, E., . . . Dunbar, G. C. (1998). The Mini-International Neuropsychiatric Interview (M. I. N. I.): The development and validation of a structured diagnostic psychiatric interview for *DSM–IV* and ICD-10. *The Journal of Clinical Psychiatry, 59,* 22–33.

Sheppes, G., Suri, G., & Gross, J. J. (2015). Emotion regulation and psychopathology. *Annual Review of Clinical Psychology, 11,* 379–405. http://dx.doi.org/10.1146/annurev-clinpsy-032814-112739

Simms, E. E. (2009). *Assessment of the facets of the five-factor model: Further development and validation of a new personality measure* (Unpublished doctoral dissertation). University of Iowa, Iowa City, IA.

Simms, L. J., Goldberg, L. R., Roberts, J. E., Watson, D., Welte, J., & Rotterman, J. H. (2011). Computerized adaptive assessment of personality disorder: Introducing the CAT-PD project. *Journal of Personality Assessment, 93,* 380–389. http://dx.doi.org/10.1080/00223891.2011.577475

Stanton, K., Stasik-O'Brien, S. M., Ellickson-Larew, S., & Watson, D. (2016). Positive affectivity: Specificity of its facet level relations with psychopathology. *Cognitive Therapy and Research*. Advance online publication. http://dx.doi.org/10.1007/s10608-016-9773-1

Stanton, K., & Watson, D. (2014). Positive and negative affective dysfunction in psychopathology. *Social and Personality Psychology Compass, 8,* 555–567. http://dx.doi.org/10.1111/spc3.12132

Timmerman, M. E., & Lorenzo-Seva, U. (2011). Dimensionality assessment of ordered polytomous items with parallel analysis. *Psychological Methods, 16,* 209–220. http://dx.doi.org/10.1037/a0023353

Velicer, W. F. (1976). Determining the number of components from the matrix of partial correlations. *Psychometrika, 41,* 321–327. http://dx.doi.org/10.1007/BF02293557

Watson, D., Clark, L. A., & Harkness, A. R. (1994). Structures of personality and their relevance to psychopathology. *Journal of Abnormal Psychology, 103,* 18–31. http://dx.doi.org/10.1037/0021-843X.103.1.18

Watson, D., & Naragon-Gainey, K. (2014). Personality, emotions, and the emotional disorders. *Clinical Psychological Science, 2,* 422–442. http://dx.doi.org/10.1177/2167702614536162

Watson, D., O'Hara, M. W., Naragon-Gainey, K., Koffel, E., Chmielewski, M., Kotov, R., . . . Ruggero, C. J. (2012). Development and validation of new anxiety and bipolar symptom scales for an expanded version of the IDAS (the IDAS-II). *Assessment, 19,* 399–420. http://dx.doi.org/10.1177/1073191112449857

Watson, D., Stasik, S. M., Chmielewski, M., & Naragon-Gainey, K. (2015). Development and Validation of the Temperament and Affectivity Inventory (TAI). *Assessment, 22,* 540–560. http://dx.doi.org/10.1177/1073191114557943

Watson, D., Stasik, S. M., Ellickson-Larew, S., & Stanton, K. (2015a). Explicating the psychopathological correlates of anomalous sleep experiences. *Psychology of Consciousness: Theory, Research, and Practice, 2,* 57–78.

Watson, D., Stasik, S. M., Ellickson-Larew, S., & Stanton, K. (2015b). Extraversion and psychopathology: A facet-level analysis. *Journal of Abnormal Psychology, 124,* 432–446. http://dx.doi.org/10.1037/abn0000051

Wright, A. G. C., & Simms, L. J. (2014). On the structure of personality disorder traits: Conjoint analyses of the CAT-PD, PID-5, and NEO-PI-3 trait models. *Personality Disorders, 5,* 43–54. http://dx.doi.org/10.1037/per0000037

Received May 7, 2016
Revision received August 6, 2016
Accepted August 14, 2016 ■