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Structure and Validity of Measures of Decentering and Defusion

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Defusion and decentering are related constructs that describe an objective, distanced, and open approach toward one's internal experiences. These constructs are thought to play important protective roles in models of psychopathology, and several common therapeutic interventions include techniques to increase levels of defusion and decentering. However, little research has examined the construct validity or the underlying structure of measures of these constructs. Across 4 samples—3 unselected student samples and 1 clinical sample— we examined 5 self-report measures of defusion/decentering. We found that measures of decentering and defusion were only weakly to modestly associated with each other. Item-level analyses revealed a 2-factor structure, consisting of "Observer Perspective" and "Reduced Struggle with Inner Experience," which generally showed expected and distinct patterns of convergent and discriminant validity, although the latter factor had questionable discriminant validity namely a-namely indices of psychological distress (e.g., neuroticism, negative affect, internalizing symptoms, rumination). The factors also related differently to believability of positive versus negative thoughts, which was partially explained by the overrepresentation of negative items in the measures. Implications for the structure and validity of these constructs, as well as for their assessment and use in clinical settings, are discussed.

Public Significance Statement
This study examined the construct validity of a variety of measures of decentering and defusion, which are related cognitive techniques for treating a variety of psychological disorders. Results suggest that they consist of 2 distinct components (i.e., observer perspective and reduced struggle with inner experience), and support for this novel structure advances the assessment and conceptualization of decentering and defusion.

Keywords: cognitive mechanisms, decentering, defusion, scale validation

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There is accumulating evidence that decentering and defusion—related constructs that describe an objective, distanced, and open approach toward one's internal experiences—may be important factors in the etiology and treatment of psychopathology. Low levels of both constructs are associated with a range of psychological symptoms, suggesting that these processes are transdiagnostic in nature (e.g., Bernstein et al., 2015). Furthermore, they are implicated as mediators of decreased symptoms and increased quality of life in different forms of psychotherapy for a variety of disorders (e.g., Arch, Wolitzky-Taylor, Eifert, & Craske, 2012; Bieling et al., 2012; Hayes-Skelton, Calloway, Roemer, & Orsillo, 2015; Hoge et al., 2015). However, studying and measuring these processes is predicated upon clear conceptualizations of the constructs and measures that yield valid test scores. Although numerous defusion/decentering measures exist, there has been little research on the validity of scores on these measures, such that it is unclear to what extent they accurately assess the intended underlying construct(s), are associated with related constructs in a theoretically consistent manner, and are uni-or multidimensional in structure. Thus, the present research seeks to explore the relationships between, structure of, and validity of measures of defusion and decentering to clarify their conceptualization and assessment.

Conceptualizations of Decentering and Defusion

Decentering is a present-moment awareness of one's mental experience, marked by a detached observer perspective (Davis, Lau, & Cairns, 2009; Fresco, Moore, et al., 2007; Fresco, Segal, Buis, & Kennedy, 2007; Teasdale et al., 2002). Referred to as "distancing" in the early days of cognitive therapy, decentering was seen as a first step in the process of restructuring cognitive distortions associated with psychopathology (Hollon & Beck, 1979). Decentering is generally not directly targeted in traditional cognitive therapy; rather, this skill is implicit in common cognitive

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techniques like self-monitoring and restructuring thoughts, as some degree of psychological "distance" and objectivity is necessary to effectively notice, describe, and reflect on internal experiences (Arch & Craske, 2008; Forman & Herbert, 2009).

Mindfulness-Based Cognitive Therapy (MBCT; Segal, Williams, & Teasdale, 2002), an intervention that extends the cognitive–behavioral tradition by incorporating elements of mindfulness and acceptance, explicitly seeks to increase decentering. Building on Eastern mindfulness traditions, which consider mindfulness to entail sustained attention toward one's focal experience in a manner that may lead to "awakening" (e.g., Gethin, 2015), MBCT posits that a distant observer perspective toward one's internal experience is an important component of healthy psychological functioning and an end in itself, rather than a means of disputing or changing irrational thoughts (e.g., Teasdale et al., 2002). Decentering is related to but empirically and theoretically distinct from mindfulness, wherein decentering is viewed as one component of—or, alternatively, one proximal mechanism of—mindfulness (along with components such as attention to the present moment, acceptance, and observing and describing one's experiences; e.g., Baer, Smith, Hopkins, Krietemeyer, & Toney, 2006) that contributes to the association between mindfulness and healthy psychological functioning (Bernstein et al., 2015; Hoge et al., 2015; Hölzel et al., 2011; Pearson, Brown, Bravo, & Witkiewitz, 2015). One critical way in which decentering is distinct from mindfulness is that decentering explicitly refers to a specific type of awareness one has *of one's own thoughts and feelings*, whereas the broader concept of mindfulness encompasses an accepting awareness of both internal *and external* stimuli.

Cognitive defusion is one of the key processes implicated in Acceptance and Commitment Therapy (ACT; Hayes, Luoma, Bond, Masuda, & Lillis, 2006; Hayes, Strosahl, & Wilson, 2012), a contextual behavioral therapy that was developed around the same time as MBCT. Fusion is thought to occur when a person interprets thoughts as if they were literally true, and therefore as accurate representations of the world (e.g., the thought, "I'm going to mess up my presentation tomorrow," is treated as if messing up the presentation is a fact or present reality), whereas cognitive *de*fusion involves a shift away from the literal meaning of thoughts (Blackledge, 2007; Hayes et al., 2006).

Within the ACT framework, defusion is important because it facilitates working toward valued directions in life, even in the presence of painful or contradictory thoughts or feelings. ACT postulates that aversive thoughts and emotions are often rigidly determinative of behavior in psychopathology (e.g., avoidance of nearly all social situations because they elicit thoughts of inadequacy in someone with social anxiety disorder), such that one's behavioral repertoire becomes limited or incompatible with important goals (e.g., attending a child's high school graduation ceremony). ACT argues that when thoughts and feelings are viewed as passing mental experiences that may or may not be helpful in a given situation (i.e., a defused stance), they need not limit or determine one's behavior (e.g., Hayes et al., 2006). Defusion is targeted directly in ACT with experiential exercises and metaphors emphasizing deliteralization, the independence of thought and behavior, and observing the process of thought as it occurs. Defusion interacts with and is developed in tandem with such skills as acceptance, mindfulness, and valued action.

Taken together, decentering and defusion share a number of core features, including an awareness of one's internal experiences via an objective observer perspective, and relating to one's thoughts and emotions as transitory psychological events rather than as (necessarily) accurate representations of some larger "reality." Furthermore, both are metacognitive in nature and are associated with healthy psychological functioning and reductions in psychopathology (e.g., Bernstein et al., 2015). Indeed, a recent review posited an integrative framework that organizes decentering, defusion, and related concepts. Bernstein and colleagues argued that a broad conceptualization of decentering consists of three components: (a) meta-awareness of one's subjective experience (i.e., an awareness of the ongoing *process*, and not just content, of one's present experience), which may then allow for (b) disidentification from internal experiences (i.e., viewing one's experiences and self as separable phenomena) and (c) reduced reactivity to thought contents, such that thoughts and feelings have less impact on other mental processes (e.g., attention, affect, motivation; Bernstein et al., 2015).

There are also some conceptual differences between these constructs that should be noted. Bernstein et al. (2015) contended that whereas existing conceptual treatments of decentering include all three of the components they discuss, most current conceptualizations of defusion particularly emphasize the "reduced reactivity" component (see also McCracken, Barker, & Chilcot, 2014). Aligned with this view that decentering is broader than defusion, decentering may also be conceptualized as the combination of defusion and self-as context—an ACT process that is focused on the "observing" self (J. T. Blackledge, personal communication, June 16, 2016). In addition, the theoretical framework from which conceptualizations of defusion are derived, relational frame theory, has shaped the definitions of (de)fusion (e.g., Blackledge, 2007). Specifically, it is defined as a verbal or symbolic processes whereby, in fusion, the linguistic representation of a thought becomes a person's psychological reality, whereas in defusion, the linguistic representation of a thought is merely that—a thought—that need not determine or overly influence one's behavior. Conceptualizations of decentering, although emphasizing that thoughts and reality are often distinct, do not focus on the specific symbolic or representational roles that thoughts play. Overall, although there are some subtle distinctions in the conceptualization of these constructs, it seems important to consider measures of decentering and defusion in tandem given their many conceptual similarities.

Measuring Decentering and Defusion

A number of measurement approaches have been used to assess decentering and defusion. Although not exhaustive, a brief description of the measures employed in the current research can be found in Table 1 and in the methods section; we focus here on self-report measures, but a semistructured interview measure exists as well (Measure of Awareness and Coping in Autobiographical Memory; Moore, Hayhurst, & Teasdale, 1996). The Experiences Questionnaire (EQ; Fresco, Moore, et al., 2007) and Toronto Mindfulness Scale Decentering subscale (TMS-D; Davis et al., 2009) were designed to measure decentering, whereas the Cognitive Fusion Questionnaire (CFQ; Gillanders et al., 2014), Drexel Defusion Scale (DDS; Forman et al., 2012), and Believability of Anxious Feelings and Thoughts scale (BAFT; Herzberg et al.,

Table 1
Description of Self-Report Measures of Decentering and Defusion

Scale	Construct measured	Higher values indicate	# items/ # negative	Item content	Sample item
EQ Fresco et al., 2007	Decentering	Decentering	11/4	Agreement with statements describing distant perspective on thought, self-acceptance, slowing thought, awareness of thought	"I can observe unpleasant feelings without being drawn into them."
TMS-D Davis et al., 2009	Decentering	Decentering	7/1	Agreement with statements describing detached observation of thought, de-identification with thought, not controlling thinking, accepting thoughts	"I experience myself as separate from my changing thoughts and feelings."
CFQ Gillanders et al., 2014	Defusion	Fusion	7/7	Agreement with statements describing struggle with, entanglement in, or emotional impact of thoughts	"I tend to get very entangled in my thoughts."
DDS Forman et al., 2012	Defusion	Defusion	10/10	Perceived ability to generally defuse from hypothetical negative thoughts, feelings, and sensations	"Thoughts about your future. Imagine you are having thoughts like, "I'll never make it" or "I have no future." To what extent would you normally be able to defuse from thoughts about your future?"
BAFT Herzberg et al., 2012	Defusion	Fusion	16/16	Current believability of hypothetical thoughts, each of which relates to anxious thoughts, feelings, or sensations	"I need to get a handle on my anxiety and fear for me to have the life I want."

2012) were designed to measure (de)fusion. The EQ, TMS-D, and CFQ all use Likert-type scales on which participants indicate the extent to which each statement characterizes their experiences with regard to their thoughts and feelings. The DDS and BAFT, however, adopt a different approach, asking people to directly report the extent to which they would defuse from (DDS) or fuse with (operationalized as believability; BAFT) a series of hypothetical mental events (thoughts, feelings, sensations). Additionally, the DDS provides an extended definition of defusion in the task instructions, based on the assumption that the construct requires some explanation before individuals can accurately report on their experiences with it (Forman et al., 2012).

The definitions of decentering and defusion presented earlier are agnostic with respect to the mental contents from which people decenter or defuse, and in fact, conceptualizations of defusion emphasize that fusion with *any* thought (including positive thoughts) may be problematic (e.g., Hayes et al., 2012). Nevertheless, existing measures tend to reflect negative contents. The TMS-D has only one (of seven) item relating to negative contents ("I am receptive to observing *unpleasant* thoughts and feelings without interfering with them." [emphasis added]), and the EQ has four (of 11) items focused on negative experiences, whereas the other items do not specify a valence. However, the DDS and BAFT are entirely composed of items referencing negative content (e.g., anxious feelings). Finally, whereas the CFQ items generally reflect thought content without a specified valence, all items assess people's negative *reactions* to their thoughts, implying that the thoughts are judged as aversive or unwanted ("My thoughts cause me distress or emotional pain."). Of note, none of the items in these measures assess defusion or decentering from positively valenced internal experiences, such as excitement or positive thoughts about oneself. Given this emphasis on negatively valenced content, it is plausible that responses to these measures may be unduly influenced by personality traits such as negative affectivity or neuroticism, leading to discriminant validity concerns. Thus, agreement with negatively valenced items may at least partially reflect the *presence of* negative thoughts and emotions, in addition to one's *perspective on* those negative experiences. Furthermore, it is unclear whether this emphasis on negative contents might limit the extent to which existing measures can apply to the breadth of people's emotional and mental life.

Despite the availability of multiple measures of these constructs, little is known about the relationships between the measures or the constructs they are thought to assess. Indeed, we only found one study that included even two relevant measures. Specifically, Forman et al. (2012) found a correlation of |.43| between the DDS and the EQ. This moderate correlation is of the magnitude one might expect between two related concepts, though not as high as one might expect for two measures of (near) identical concepts. Given the proposed importance of these concepts for understanding and treating psychopathology, a more systematic examination is needed to clarify whether these scales that purport to measure

the same (or similar) constructs are closely associated empirically and relate similarly to other variables of interest. Such an investigation may help clinicians and researchers determine which measure(s) to select, given their specific purposes. Furthermore, identifying common components that cut across individual measures may improve our understanding of the underlying constructs themselves.

Current Research

In the present research we sought to explore the relationships between, structure of, and validity of measures of decentering and defusion, with the goals of clarifying theory, conceptualization, and assessment of these constructs. We included the measures of these concepts described above in three large undergraduate samples, and then tested the generalizability of findings in a clinical sample with anxiety disorders. We first examined the interrelationships between different measures of decentering and defusion. Next, we evaluated the structure of the items included across all of these measures, controlling for measure-specific variance, with exploratory and confirmatory analyses. We did not have strong hypotheses regarding the structure that would emerge from these measures, in part because there is so little data on associations among these measures. Given the many parallels between conceptualizations of decentering and defusion, we thought it plausible that a single-factor solution would emerge. As noted above (see also Bernstein et al., 2015), there are also a few differences in the conceptualizations of decentering and defusion, such that items might load correspondingly on separate decentering and defusion factors. Finally, because each of the scales we used has a number of idiosyncrasies, including the number of negative items and relatively unique response formats (e.g., operationalizing fusion as "believability" in the BAFT), it seemed quite plausible that more complex multiple factor solutions could also emerge.

To assess convergent and discriminant validity, we examined the relationships of the latent variables with a variety of relevant constructs. Because decentering and defusion have been implicated in improved psychological health, we expected that measures of decentering and defusion would show strong convergent correlations with constructs closely related to mental health (i.e., neuroticism, negative affectivity, self-esteem, rumination, perseverative thought, experiential avoidance). However, we were also interested in the extent to which decentering and defusion measures remained at least somewhat distinct from (vs. redundant with) these negatively valenced constructs, given that most items focus on negative internal experiences. In addition, because these are mindfulness-related constructs associated with the distance one has from one's own mental states, we expected strong convergent correlations with the nonreactivity component of mindfulness. Although decentering and defusion definitions do not specify a nonjudgmental stance, the objective observer perspective they entail likely facilitates reduced judgments of internal experiences, so we also expected strong associations with the nonjudging aspect of mindfulness. We expected weaker discriminant associations with other aspects of mindfulness (i.e., acting with awareness, observing external stimuli, describing experiences), the other Big Five domains and positive affectivity, self-referential variables (i.e., self-concept clarity, private self-consciousness), and emotion regulation. Although these variables should be related to decentering and defusion because of their associations with mindfulness, mental health, or metacognition, they are more distal to the core features of decentering/defusion (i.e., an objective observer perspective on one's internal experiences).

Next, we assessed the criterion validity of scores via associations with outcome criteria of (a) internalizing symptoms (i.e., dysphoria, panic, social anxiety), and (b) positive and negative valenced internal experiences (e.g., parallel items assessing the believability of positive and negative self-relevant thoughts; see Measures for more detail). These latter measures allowed us to examine whether defusion/decentering was similarly associated with positively- and negatively valenced thoughts and emotions. Finally, we explored possible effects of the fact that most items in these scales assess defusion or decentering from negative internal experiences, examining whether this methodological characteristic might alter associations of the underlying constructs with important criteria.

Method

Participants

Student Sample 1. Three hundred fifty-one university students were diverse with respect to their gender (170 male, 181 female) and race and ethnicity (34 Hispanic, 175 White, 29 Black, 8 American Indian, 22 Asian Indian, 84 Chinese, 17 Korean, 7 Vietnamese, 16 other Asian, 5 Pacific Islander, 2 unreported, multiple categories possible), but not with respect to age (18–30 years, $M = 19.10$, $SD = 1.63$). Forty-two participants (12.0%) reported a history of mental health care, and 23 participants (7%) stated that they were currently receiving therapy and/or taking psychiatric medication.

Student Sample 2. Three hundred forty-four university students were diverse with respect to their gender (154 male, 184 female, 1 other, 5 unreported) and race and ethnicity (33 Hispanic, 202 White, 38 Black, 6 American Indian, 10 Asian Indian, 60 Chinese, 9 Filipino, 7 Korean, 2 Vietnamese, 7 other Asian, 1 Native Hawaiian, 8 Pacific Islander, 4 unreported, multiple categories possible), but not with respect to age (18–41 years, $M = 19.12$, $SD = 2.27$). Thirty-six participants (11%) reported a history of mental health care, and 17 participants (5%) stated that they were currently receiving therapy and/or taking psychiatric medication.

Student Sample 3. Five hundred three university students were diverse with respect to their gender (258 male, 241 female, 1 other, 3 unreported) and race and ethnicity (38 Hispanic, 239 White, 36 Black, 6 American Indian, 24 Asian Indian, 130 Chinese, 8 Filipino, 2 Japanese, 33 Korean, 11 Vietnamese, 28 other Asian, 1 Native Hawaiian, 6 Pacific Islander, 3 unreported, multiple categories possible), but not with respect to age (18–38 years, $M = 19.17$, $SD = 1.74$). Fifty-five participants (11%) reported a history of mental health care, and 23 participants (5%) stated that they were currently receiving therapy and/or taking psychiatric medication.

Clinical Sample. Two hundred twenty-one clinically distressed participants completed the study. Participants were recruited using ResearchMatch, a national health volunteer registry that was created by several academic institutions and supported by the U.S. National Institutes of Health as part of the Clinical

Translational Science Award program. Participants were recruited only if they reported, upon joining ResearchMatch, that they had been diagnosed with an anxiety disorder and have continued to experience anxiety symptoms. We focused on anxiety given that it has shown strong associations with decentering and defusion (e.g., Arch et al., 2012; Bernstein et al., 2015; Herzberg et al., 2012; Hoge et al., 2015), the BAFT was specifically designed to assess defusion from anxious experiences, and ResearchMatch had detailed screener information regarding anxiety. Note that participants also had very high rates of depression (see below), so the sample may be best characterized as having elevated rates of internalizing symptoms generally.

Because participants in the clinical sample completed the study remotely and online (i.e., not in the lab with research team members present), we interspersed six validity items with extremely low or high base rates (e.g., "Whenever possible, I try to pay for my groceries in gold coins.") throughout the questionnaires to detect random or non–content-based responding. These six items were taken from the larger Inconsistency validity scale of the Comprehensive Assessment of Traits Relevant to Personality Disorder (CAT-PD; Simms, Goldberg, & Watson, 2016). They were combined to form an invalidity index, and those who scored two SDs above the mean were removed from analyses ($n = 10$).

This left a final sample of 211 participants, predominantly consisting of White females (169 female, 36 male, 1 other; 195 White, 7 Hispanic, 12 Black, 6 American Indian, 5 from any Asian ethnicities, 1 Pacific Islander, multiple categories possible). The sample was diverse with respect to age ($M = 34.88$, $SD = 12.35$, range 18–70), employment status (43% full-time, 14% part-time, 19% unemployed and seeking work, 11% retired/not in need of work, 26% students, multiple categories possible), and annual income (52% of the sample earned $40,000 or less). Participants were relatively educated: 57% reported that their highest level of education was some college or a 4-year college degree, and 36% endorsed completing some graduate school or a graduate degree. The majority of the sample reported currently receiving therapy (73%) and/or psychopharmacology (84%). The most frequently reported diagnoses were unipolar depression (81%) and generalized anxiety disorder (80%), followed by social anxiety disorder (37%), panic disorder (34%), and posttraumatic stress disorder (29%).

Procedure

Student participants completed the study in one of three rooms, with three to seven visually divided workstations, using a desktop, laptop, or tablet computer. They received course credit for their participation. Clinical participants who met the previously described eligibility criteria received a link through ResearchMatch to complete the study online from their homes. They were e-mailed a $10 gift card for Amazon.com to compensate them for their time and effort.

Measures

Below we have listed the questionnaires of interest in the present investigation, which were presented to participants in randomized order. In addition, the specific measures completed varied across samples. A complete list of measures given in each sample and their descriptive statistics (reliability, means, SDs) is provided in Table 2. A sample item from each of the decentering and defusion measures is provided in Table 1.

Experiences Questionnaire (EQ). The EQ (Fresco, Moore, et al., 2007) is an 11-item measure of decentering guided by an MBCT framework. Items were generated to represent the changes believed to occur as a result of MBCT, including lack of identification with one's thoughts, nonreactivity to negative experiences, and self-compassion. Participants indicated the frequency with which each statement reflects their experiences on a 5-point scale (*never* to *all the time*). Fresco and colleagues (2007) reported acceptable reliability of EQ test scores (alphas = .81–.84), and showed that EQ scores can predict psychological distress (e.g., depression symptoms) and strongly distinguish depressed patients from healthy controls. In addition, EQ scores are responsive to MBCT and CBT for depression (but not pharmacotherapy) and predict relapse following psychotherapy (Bieling et al., 2012; Fresco, Segal, et al., 2007).

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

Cognitive Fusion Questionnaire (CFQ). The CFQ (Gillanders et al., 2014) is a 7-item measure that reflects the extent to which people struggle with or emotionally respond to their thoughts. Participants indicated the frequency with which each item was true of them on a 7-point scale (*never true* to *always true*). Gillanders and colleagues (2014) reported that scores on the CFQ had acceptable reliability (alphas = .88-.93) and test–retest reliability ($r = .81$ over 4-weeks), and showed that CFQ scores can predict multiple forms of psychological distress (e.g., depression symptoms) over and above other indicators included in their samples.

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

Believability of Anxious Feelings and Thoughts (BAFT). The BAFT (Herzberg et al., 2012) is a 16-item measure of fusion with anxiety-related thoughts that operationalizes fusion as believing a series of (hypothetical) negative thoughts relevant to anxious feelings and sensations. Participants indicated the extent to which they would believe each thought on a 7-point scale (*not at all believable* to *completely believable*). Herzberg and colleagues

Table 2
Descriptive Statistics for All Measures

Scale	Possible range	Student Sample 1			Student Sample 2			Student Sample 3			Clinical Sample		
		Alpha	Mean	*SD*	Alpha	Mean	*SD*	Alpha	Mean	*SD*	Alpha	Mean	*SD*
CFQ	1–7	.93	3.61	1.39	.92	3.77	1.29	.92	3.75	1.29	.92	4.93	1.06
DDS	1–6	.76	3.67	.76	.75	3.49	.72	.79	3.57	.77	.77	2.99	.79
BAFT	1–7	.93	3.75	1.26	.90	3.75	1.09	.89	3.74	1.03	.88	4.85	1.03
EQ	1–6	.86	3.49	.64	.84	3.40	.61	.85	3.41	.61	.83	2.88	.55
TMS-D	1–5	.69	2.98	.62	.73	2.94	.64	.70	2.98	.59	.72	2.35	.67
FFMQ Nonreactivity	1–5				.73	2.95	.61	.80	3.05	.65	.77	2.40	.67
FFMQ Observing	1–5				.76	3.31	.64				.73	3.75	.77
FFMQ Awareness	1–5	.90	3.18	.81	.84	3.06	.70				.79	2.88	.74
FFMQ Describing	1–5				.84	3.12	.70				.90	3.06	1.01
FFMQ Nonjudging	1–5	.92	3.25	.91	.87	3.15	.77	.86	3.06	.75	.83	2.58	.87
BFI Extraversion	1–5				.85	3.21	.74	.81	3.23	.66			
BFI Neuroticism	1–5				.82	2.99	.71	.79	2.91	.66			
BFI Openness	1–5				.71	3.45	.53						
BFI Conscientiousness	1–5				.74	3.47	.53						
BFI Agreeableness	1–5				.76	3.72	.55						
PANAS Negative Affect	1–5				.89	2.37	.81	.89	2.34	.77	.87	3.14	.82
PANAS Positive Affect	1–5				.89	3.61	.68	.88	3.49	.69	.87	2.76	.74
RSE Scale	1–6	.91	4.56	.99	.90	4.57	.98						
PTQ	1–5	.95	2.93	.81	.95	3.11	.77						
Brooding (RRS-B)	1–4	.78	2.43	.70	.80	2.49	.73	.78	2.48	.69	.75	2.74	.69
MEAQ Distress Aversion	1–6	.90	3.48	1.00	.91	3.56	.96	.90	3.51	.96	.91	3.81	1.02
PrivSC Total	1–5	.65	3.49	.53	.68	3.48	.53	.63	3.48	.50			
PrivSC SR	1–5	.69	3.53	.80	.70	3.53	.78	.66	3.56	.74			
PrivSC ISA	1–5	.59	3.69	.69	.62	3.63	.69	.58	3.59	.65			
SCC	1–7	.91	4.30	1.59	.89	4.31	1.50						
ERQ – Reappraisal	1–6				.85	4.87	.96				.90	4.22	1.21
ERQ – Suppression	1–6				.78	3.99	1.23				.78	3.89	1.43
Believability – Neg	1–11		7.34	2.47		7.72	2.53		7.59	2.42		8.24	2.39
Believability – Pos	1–11		9.16	1.52		9.08	1.75		9.03	1.80		8.69	2.01
Distress – Neg	1–11		7.14	2.56		7.53	2.53		7.23	2.66		8.73	2.44
Pleasantness – Pos	1–11		9.39	1.55		9.20	1.79		9.07	1.73		8.33	2.22
ITS – General	1–7		4.87	1.49		5.20	1.50		4.96	1.54		5.04	1.58
ITS – Positive	1–7					4.87	1.50		4.84	1.53		3.83	1.76
ITS – Negative	1–7					4.22	1.59		4.07	1.64		5.24	1.62
IFS – General	1–7		4.82	1.64		4.91	1.55		4.77	1.54		4.84	1.72
IFS – Positive	1–7					4.87	1.49		4.80	1.53		3.93	1.82
IFS – Negative	1–7					4.17	1.62		3.94	1.69		5.30	1.43
IDAS Panic	1–5	.84	1.61	.66	.87	1.66	.72	.87	1.70	.72	.85	2.13	.85
IDAS Social Anxiety	1–5	.85	2.11	.97	.84	2.05	.92	.84	2.10	.95	.88	2.99	1.16
IDAS Dysphoria	1–5	.89	2.19	.84	.91	2.26	.89	.91	2.23	.87	.87	3.23	.81

Note. CFQ = Cognitive Fusion Questionnaire; DDS = Drexel Defusion Scale; BAFT = Believability of Anxious Feelings and Thoughts; EQ = Experiences Questionnaire; TMS-D = Toronto Mindfulness Scale-Decentering; FFMQ = Five Factor Mindfulness Questionnaire; BFI = Big Five Inventory; PANAS = Positive and Negative Affect Schedule; RSE = Rosenberg Self-Esteem Scale; PTQ = Perseverative Thought Questionnaire; RRS-B = Ruminative Response Scale-Brooding; MEAQ = Multidimensional Experiential Avoidance Questionnaire; PrivSC = Private Self-Consciousness; SCC = Self-concept Clarity; ERQ = Emotion Regulation Questionnaire; ITS/IFS = Inclusion of Thoughts/Feelings in the Self; IDAS = Inventory of Depression and Anxiety Symptoms.

(2012) reported acceptable reliability (alphas = .90–.91) and temporal stability (r = .77 over 12-weeks) for BAFT scores. They also showed that BAFT scores can uniquely predict multiple forms of anxiety and related constructs, and that they are affected by, and associated with, improvement over the course of a 12-week online ACT intervention.

Mindfulness components. Student participants completed various subscales of the Five-Factor Mindfulness Questionnaire (FFMQ; Baer et al., 2006), whereas the Clinical Sample completed the short form of the FFMQ (FFMQ-SF; Bohlmeijer, ten Klooster, Fledderus, Veehof, & Baer, 2011). Both measures ask participants to report the extent to which each of a series of statements is true of them on a 5-point scale (*never or rarely true* to *very often or always true*). The FFMQ and FFMQ-SF subscales represent the breadth of mindfulness conceptualizations, assessing nonreactivity to inner experience (Nonreactivity), awareness of sensations (Observing), acting with awareness (Awareness), labeling experiences with words (Describing), and nonjudgment of ongoing experience (Nonjudging). Baer and colleagues (2006) demonstrated that these subscale scores independently predict psychological distress.

Big Five Inventory (BFI). The BFI (John, Naumann, & Soto, 2008) consists of 44 short phrases that are rated on a 5-point Likert scale and that correspond to each of the "Big Five" domains (i.e., Neuroticism, Extraversion, Agreeableness, Conscientiousness, and Openness to Experience). BFI scale scores have good internal consistency (alphas = .75–.90) and strong convergent and discrim-

inant validity with other measures of the Big Five, including peer ratings.

Positive And Negative Affect Schedule (PANAS). The PANAS (Watson, Clark, & Tellegen, 1988) is a self-report measure of both positive affect and negative affect, wherein a total of 20 mood terms are rated on 5-point intensity scale anchors. The trait versions of both scales were used in this study. Scores on these scales have shown strong internal consistency in diverse samples (alphas = .79 to .92). PANAS scores have good convergent and discriminant validity with other measures of affectivity, and adequate retest reliability after two months (*r*s = .68 and .71; Watson et al., 1988).

Rosenberg Self-Esteem Scale (RSE). The RSE scale (Rosenberg, 1965) is a 10-item measure of participants' global self-evaluation. The RSE is one of the most commonly used measures of self-esteem, with a unidimensional structure and acceptable internal-consistency (e.g., Blascovich & Tomaka, 1991). Scores on the RSE are associated with well-being, mood, and psychological functioning (e.g., Robins, Hendin, & Trzesniewski, 2001).

Perseverative Thinking Questionnaire (PTQ). The PTQ (Ehring et al., 2011) is a 15-item measure of repetitive thinking. Items reflect potential experiences with the process of repetitive thought (e.g., thoughts repeating, capturing attention, and interfering with other thoughts or actions), but they do not specify the content of these thoughts. Participants indicated the extent to which each statement applies to them on a 5-point scale (*never* to *almost always*). Ehring and colleagues (2011) showed that PTQ scores are associated with other measures of ruminative or perseverative thought, and predict depression symptoms.

Ruminative Response Scale—Brooding (RRS-B). The RRS-B is a 5-item subscale of the RRS (Nolen-Hoeksema & Morrow, 1991) that assesses "moody pondering" (Treynor, Nolen-Hoeksema, & Gonzalez, 2003). The RRS asks people to consider the frequency with which relevant thoughts might enter their mind when they feel depressed. Responses are on a 4-point scale (*almost never* to *almost always*). Treynor and colleagues (2003) showed that scores on the RRS-B concurrently and prospectively predict depression symptoms.

Experiential Avoidance—Distress Aversion. The Distress Aversion (DA) subscale of the Multidimensional Experiential Avoidance Questionnaire (MEAQ) (Gámez, Chmielewski, Kotov, Ruggero, & Watson, 2011) is a 13-item measure of the extent to which people try to avoid or change distressing experiences, including specific emotional (e.g., sadness, anxiety), physical (pain), and psychological (e.g., memories) states. Participants indicated their agreement with each statement on a 6-point scale (*strongly disagree* to *strongly agree*).

Private Self-Consciousness (PSC). The PSC (Fenigstein, Scheier, & Buss, 1975) is a 10-item measure of self-focused attention. Participants indicate the extent to which each of a series of statements about one's self-directed thought is characteristic of them. Our participants responded on a 5-point scale (*extremely uncharacteristic* to *extremely characteristic*). We also computed two subscales identified by Mittal and Balasubramanian (1987), each of which is four items in length: Self-reflection (PSC-SR) represents a ruminative form of self-focus that is positively associated with psychopathology, whereas internal state awareness (PSC-ISA) is a reflective form of self-focus marked by an adaptive awareness of one's thoughts and feelings.

Self-Concept Clarity Scale (SCCS). The SCCS (Campbell et al., 1996) is a 12-item measure of participants' perceptions that they have a coherent, internally consistent, and stable self-concept. Participants indicated the extent to which a series of statements assessing these concepts is characteristic of them on a 7-point scale (*extremely uncharacteristic* to *extremely characteristic*). SCCS scores predict decreased incidence of a variety of mental health problems (Bigler, Neimeyer, & Brown, 2001; Vartanian, 2009).

Emotion Regulation Questionnaire (ERQ). The ERQ is a rationally derived measure of dispositional emotion regulation strategies, with subscales assessing reappraisal (6 items) and suppression (4 items) strategies. All items are rated on a 7-point scale. Reappraisal scores are positively related to wellbeing, whereas suppression scores are negatively related (Gross & John, 2003).

Believability and Emotional Impact of Self-relevant Thoughts. As a complementary method for measuring defusion and decentering, we directly assessed participants' relationship with their idiographic self-relevant thoughts. Participants first reported one frequent and generally intense negative (positive) self-relevant thought (e.g., "I am stupid."). Then, using questions adapted from work on defusion (e.g., Masuda, Hayes, Sackett, & Twohig, 2004; Masuda et al., 2010), we asked participants to report the extent to which the thought caused discomfort and was believable at this moment on 11-point scales anchored at *not at all uncomfortable/believable* and *extremely uncomfortable/believable*. Past work using the believability and emotional impact items found that scores on these items are sensitive to the effects of a defusion induction (Masuda et al., 2004, 2010). Although past work has only examined the believability and emotional impact of negative self-relevant thoughts, ACT conceptualizations of fusion argue that fusion with positive thoughts could also be maladaptive (e.g., Hayes et al., 2012), and as such, we also included parallel questions for a self-relevant positive thought (i.e., emotional impact anchored at *not at all pleasant* and *extremely pleasant*).

Inclusion of Thoughts and Feelings in the Self (ITFS). We sought to assess identification with one's thoughts using a novel approach. Specifically, we adapted a measure of inclusion of other people in the self (Aron, Aron, & Smollan, 1992). Participants saw seven pairs of circles, ranging from no overlap to near complete overlap, with one circle representing the self and the other representing one's thoughts/feelings. Participants were then asked to "select the circle below that best represents your relationship with your own thoughts/feelings." In some studies, we also included specific questions assessing inclusion of positive and negative thoughts/feelings. The inclusion measure has been adapted to a number of different purposes, such as to assess closeness to one's romantic partner (Aron, Aron, Tudor, & Nelson, 1991), identification with one's ingroups (Smith, Coats, & Walling, 1999), and fusion with one's goals (Burkley, Curtis, Burkley, & Hatvany, 2015), and scores appear to be sensitive to people's identification with and the psychological significance of the "included" concept. Because many conceptualizations of decentering and defusion emphasize the psychological significance of one's thoughts, or one's ability to disidentify with them, we thought the ITFS items would provide a novel, but theoretically congruent criterion.

Inventory of Depression and Anxiety Scale (IDAS). This study included the Panic (8 items), Social Anxiety (5 items), and Dysphoria (10 items) subscales of the IDAS (Watson et al., 2007). The IDAS uses a 5-point Likert-type scale to assess symptoms

over the past 2 weeks. Scores on these scales have strong internal consistency reliability, with coefficients alpha of .80 to .90 (Watson et al., 2007). Scores on the IDAS also have shown good convergent and discriminant validity with diagnoses and self-report measures, as well as good short-term retest reliability in a psychiatric patient sample (Watson et al., 2008; Watson et al., 2007).

Novel item generation. As outlined above, we had concerns that the negative item content of the decentering and defusion measures might confound decentering/defusion with negative affect, or at least create uncertainty in the interpretation of scale responses. Because of this, we were interested in examining the impact of item valence on the validity and structure of these measures. None of the measures have positive, negative, and unspecified valence items, so we selected a subset of items that were amenable to creating parallel items that differ from the original solely in valence. We did this for selected items from the EQ, DDS, and BAFT, yielding matched items that were positive, negative, and/or unspecified in valence (see Table 8 for the content of all novel items and the original items upon which they were based). For example, the EQ item "I observe unpleasant feelings without being drawn in" was used as a model to create two parallel items: "I observe pleasant feelings without being drawn in" (positive) and "I observe my feelings without being drawn in" (unspecified valence). Because the DDS asks about one's ability to defuse from specific experiences and parallel neutral experiences were not readily apparent or seemed nonsensical, only positive and negative parallel items were created for the DDS. Novel items were randomly interspersed with the other items from the scale from which they were adapted.

Data Analysis

Mplus 7.3 was used for all analyses, and missing data were handled with robust maximum likelihood estimators (MLR) that also account for the non-normal distribution of some variables. Missing data were minimal, as more than 98.5% of item-level data were present in each sample. To make the items and scales easier to interpret and more comparable with one another, all defusion/decentering items and scales were recoded such that higher responses indicate greater decentering or defusion. The magnitude of correlations was interpreted according to Cohen's (1988) approximate guidelines: $r = .10$ to .30 is small, $r = .31$ to .50 is moderate, and $r > .50$ is large.

To examine the item-level structure of the defusion-decentering measures, we first used exploratory structural equation modeling (ESEM), which is similar to an exploratory factor analysis except that it can also incorporate error covariances among items (as in regular structural equation modeling). The results of this analysis were then tested with confirmatory factor analyses (CFA) in independent samples. To compare nested structural models, the chi-square difference test was used, with the scaling correction appropriate to Satorra-Bentler robust estimators. In this test, a significant chi-square value indicates that there is a significant difference in fit between the two models. For item-level latent variable analyses, error terms of items from the same measure (but not across measures) were allowed to covary to account for measure-specific variance (i.e., different response scales, wording, instructions). It is important to account for such sources of measure-specific variance in structural models, as failing to do so can lead to poorer model fit and distorted structural results (Brown, 2015).

Multiple fit indices were considered when evaluating latent variable models. In addition to the model chi-square test of exact fit, we report the comparative fit index (CFI), the root mean square error of approximation (RMSEA), and the standardized root mean squared residual (SRMR). Interpretation of these indices is based on the guidelines set forth by Hu and Bentler (1999) and Browne and Cudeck (1993). Hu and Bentler suggested that CFI should be "close to" .95 or above for good fit and SRMR values should be $\leq$ .08 (Hu & Bentler, 1999). According to Hu and Bentler, RMSEA should be $\leq$ .06, whereas Browne and Cudeck (1993) suggested that values below .08 and above .10 reflect good fit and poor fit, respectively.

Results

We organize our results around the conceptual questions of interest, drawing on the relevant data sets and measures as needed to address these questions. To assess whether the Clinical Sample in fact reported current internalizing symptoms at elevated levels, we calculated Cohen's *d* (comparing the clinical sample to the three student samples) for symptoms of panic, social anxiety, and dysphoria. The clinical sample had higher scores on all three scales, with a medium effect size for Panic ($d = .55$ to .68), and large effect sizes for Social Anxiety ($d = .82$ to .90) and Dysphoria ($d = 1.14$ to 1.26).

Do Decentering and Defusion Measures Assess the Same Construct?

Table 3 shows the correlations among the defusion and decentering measures in each sample. Correlations differed greatly in magnitude depending on the specific measure (rs $= -.11$ to .66), but they were generally much lower than would be expected for measures of the same construct (mean $r = .29$ for student samples, .47 for clinical sample). The only correlations that approached an

Table 3
Correlations Among Decentering and Defusion Measures in Each Sample

Scale	EQ	BAFT	DDS	TMS Decenter	CFQ
EQ		.25**	.31**	.35**	.42**
BAFT	.36**		.11	−.11	.57**
DDS	.52**	.19**		.20**	.20**
TMS Decenter	.29**	−.08	.32**		.04
CFQ	.50**	.66**	.28**	−.02	
EQ		.49**	.58**	.44**	.63**
BAFT	.31**		.38**	.29**	.58**
DDS	.42**	.23**		.44**	.48**
TMS Decenter	.41**	.02	.25**		.36**
CFQ	.44**	.56**	.26**	.10*	

Note. $N = 351$ (Student Sample 1; top half of table, below the diagonal), 344 (Student Sample 2; top half, above the diagonal), 503 (Student Sample 3; bottom half, below the diagonal), and 211 (Clinical Sample; bottom half, above the diagonal). All scales were coded such that higher scores indicate greater defusion or decentering.
* $p < .05$. ** $p < .01$.

effect size consistent with measures of the same construct was between BAFT and CFQ (rs = .56 to .66 across samples), and those of EQ with DDS and CFQ in the clinical sample (rs = .58 and .63, respectively). Correlations among only defusion measures (mean r = .39) and correlations among only decentering measures (mean r = .37) remained weak. Furthermore, these correlations were only slightly stronger than correlations of defusion measures with decentering measures (mean r = .31). These results suggest that the measures examined here do not assess a uniform conceptualization of decentering and defusion, regardless of whether defusion and decentering are considered separately or together.

What Is the Item-Level Structure of Decentering and Defusion Measures?

Exploratory structural equation modeling. Because the scale scores for these measures do not appear to reflect the same construct, we next examined their structure in greater detail by conducting item-level analyses. First, an ESEM was run in Student Sample 1 with error correlations among items from the same inventory to account for measure-specific variance (see "Data Analysis"). Though variable by measure, the majority of these error correlations were statistically significant, indicating substantial measure-specific variance that is not relevant to the latent construct and likely attenuated the correlations among measures observed in Table 3. A single factor was extracted first, and the number of factors was increased until the solution was no longer interpretable. Standardized factor loadings for one, two, and three factor solutions are shown in Table 4; note that all items were recoded such that higher scores indicate greater defusion/decentering.

The one-factor solution was primarily marked by items from the CFQ and BAFT (loadings = .29 to .82), whereas the EQ items loaded significantly but weakly to moderately (loadings = .28 to .50). Many of the DDS and TMS-D items did not load significantly on this general factor. Thus, after accounting for shared measure variance, the defusion items seem to dominate in the single-factor solution, except that the DDS items loaded somewhat weakly and inconsistently.

The two-factor solution consisted of one factor primarily marked by two of the TMS-D items, the DDS, and EQ, and a second factor composed of the BAFT and CFQ items. Cross-loadings were minimal, with the exception that the first five TMS-D items split evenly (and weakly) between the two factors. The correlation between the two factors was significant and positive, r = .51, $p < .001$. Based on the content of the strongest loading items, the first factor was labeled "Observer Perspective" (OP) and the second factor was labeled "Reduced Struggle with Inner Experience" (RS). The three-factor solution consisted of these same two factors (extracted in the opposite order), as well as a third factor with only a handful of significant loadings that were all less than .40. Because this third factor was not interpretable and was suggestive of overextraction, we retained the one- and two-factor solutions for further examination.

Confirmatory factor analyses. The one- and two-factor structures were tested and compared in the other three samples using CFA. To increase model parsimony and simple structure, we only included the approximately 12 strongest loading items (standardized loading > .40) on each factor, omitting items that had a substantial cross-loading (i.e., > .20) in the Student Sample 1 two-factor ESEM. Within the constraints imposed by the above criteria and variability in scale length, we also selected items such that each source measure was represented as equally as possible. The retained items are indicated with an asterisk in Table 4, and standardized factor loadings for the one- and two-factor CFAs are shown in Table S1 of the online supplement. As before, the error terms among items from the same measure were allowed to covary in all models. Model fit for both models was acceptable to good across samples (see Table 5), but the chi-square difference test indicated that the two-factor solution was a significantly better fit than a single factor in all samples (ps $< .001$). In the two-factor models, all loadings were highly significant ($p < .001$), and the correlation between the two factors was moderately strong in Student Samples 2 and 3 (rs = .61 to .66) but very strong in the Clinical Sample (r = .84). Thus, the confirmatory analyses from three independent samples reinforce the two-factor structure observed in exploratory analyses of Student Sample 1, though the distinctiveness of the factors in the Clinical Sample is unclear and will be assessed further.

Do the OP and RS Factors Show the Expected Associations With Relevant Constructs?

Convergent and discriminant validity. We hypothesized that several constructs that are closely related to (though not conceptually equivalent to) defusion and decentering should correlate strongly (e.g., $r > |.50|$) with the two defusion/decentering factors (see "Current Research"). However, given that they putatively measure distinct constructs, correlations should not approach 1.0 (e.g., $r < |.80|$). Specifically, we expected that two components of mindfulness— nonreactivity and nonjudging—should be strongly related to OP and RS, respectively, given that the nonreactivity items describe a distanced perspective from one's internal experiences and nonjudging items describe acceptance of/openness to one's feelings and thoughts. RS should also be closely associated with broad indices of dispositional negative emotions and cognitions (i.e., neuroticism, negative affectivity, self-esteem), indices of cognitive perseveration (i.e., rumination, perseverative thought), and experiential avoidance. As shown in Table 6, the data generally supported these hypotheses across the four samples, providing evidence of specific differential associations for the two factors. OP demonstrated strong positive relationships with nonreactivity, whereas RS had strong positive associations with nonjudging and self-esteem, as well as strong negative associations with neuroticism, negative affectivity, perseverative thinking, and rumination. Associations between RS and experiential avoidance were moderate to strong. Of note, RS was nearly indistinguishable from neuroticism and perseverative thinking in these data (rs = −.77 to −.85). In addition, OP was more strongly associated with neuroticism than expected (rs = −.66 to −.68), revealing that both defusion/decentering factors share substantial variance with this personality trait. Although the two factors showed less differentiation in the clinical sample than in the other samples, the same patterns were present, indicating that the two factors have different correlates in this sample despite the strong factor intercorrelation.

Discriminant associations were predicted for constructs that should be unrelated or weakly related to defusion/decentering (e.g., rs = |.00| to |.40|; see "Current Research"). Overall, these correlations suggested

Table 4
Exploratory Structural Equation Models of Defusion/Decentering Items in Student Sample 1

Scale	Item	1 Factor	2 Factors		3 Factors		
EQ1	Accept myself	**.49****	**.44****	.20	.28**	.35**	.13
EQ2*	Observe unpleasant feelings without being drawn in	**.45****	**.56****	.09	.21	**.42****	.21
EQ3*	Don't take difficulties personally	**.48****	**.53****	.13	.24*	**.40****	.18
EQ4	Treat myself kindly	**.50****	.36**	.27*	.30*	.37**	−.04
EQ5	Separate myself from thoughts/feelings	**.47****	.37**	.22	.28	.31*	.01
EQ6	Aware of what is going on around me and inside of me	.35**	**.40****	.07	.16	.29	.10
EQ7*	Slow my thinking during stress	**.40****	**.57****	.02	.15	**.41****	.21
EQ8*	Can see that I am not my thoughts	.34**	**.46****	.05	.16	.31**	.18
EQ9*	Sense of my body as a whole	.29**	**.47****	−.03	.02	**.46****	.01
EQ10	Take time to respond to difficulties	.28**	.34**	.08	.12	.31**	.05
EQ11*	View things from wider perspective	.35**	**.46****	.05	.06	**.51****	−.08
DDS1	Defuse from anger	.06	.13	−.01	−.01	.14	−.06
DDS2	Defuse from food cravings	.01	.29**	−.19*	−.14	.25*	.11
DDS3	Defuse from physical pain	.11	.33**	−.10	−.07	.32**	.05
DDS4*	Defuse from anxious thoughts	.29**	**.68****	−.17	.00	**.48****	.34**
DDS5*	Defuse from negative thoughts of self	.33**	**.48****	.01	.11	.37**	.15
DDS6*	Defuse from thoughts of hopelessness	**.46****	**.45****	.15	.20	**.42****	.01
DDS7	Defuse from negative thoughts about motivation or ability	.28**	.34**	.06	.16*	.21	.17*
DDS8	Defuse from negative thoughts about future	.22**	.15	.14	.16	.13	−.02
DDS9	Defuse from sensations of fear	.05	.36**	−.19*	−.12	.28*	.16
DDS10*	Defuse from feelings of sadness	.33**	**.48****	.02	.15	.33**	.24*
TMS-D1	Experiences self as separate from thoughts and feelings	−.09	.25*	−.26**	−.21*	.20	.15
TMS-D2	Open to experiences without controlling or changing them	.06	.35**	−.18*	−.23	**.48****	−.04
TMS-D3	Experience thoughts as mental events, not reflection of reality	−.14*	.25**	−.29**	−.30**	.30**	.05
TMS-D4	Observe unpleasant thoughts/feelings without changing them	−.05	.27**	−.23**	−.27	.38**	−.05
TMS-D5	Watch my experiences as they arise	−.08	.21*	−.20*	−.13	.11	.17
TMS-D6*	Accept experiences, whether pleasant or unpleasant	.24**	**.53****	−.12	−.18	**.72****	−.10
TMS-D7*	Aware of thoughts/feelings without overidentifying	.35**	**.44****	.06	.07	**.49****	−.01
BAFT1*	Need to control anxiety/fear to have life I want	**.58****	.11	**.49****	**.53****	.06	−.03
BAFT2	Appearing nervous is not good and causes me to suffer	**.45****	.06	**.40****	**.41****	−.03	.05
BAFT3*	Can't do the things that I want when I have anxiety/fear	**.53****	.05	**.49****	**.54****	−.03	.02
BAFT4	Must stay in control of my emotions	**.40****	−.08	**.46****	**.49****	−.16*	.04
BAFT5	Should be able to get a grip on my anxious thoughts/feelings	.56**	.12	**.46****	**.50****	.06	−.02
BAFT6*	My anxious thoughts/feelings are a problem	**.69****	.16	**.56****	**.60****	.11	−.04
BAFT7*	Embarrassed when people notice how nervous I feel	**.53****	.09	**.52****	**.52****	.00	.06
BAFT8*	Unusual body sensations are scary and need to be reduced	**.52****	−.12	**.61****	**.56****	−.03	−.26*
BAFT9*	My anxious thoughts and feelings are not normal	**.62****	.06	**.57****	**.57****	.07	−.15
BAFT10	Important to scan my body for signs of anxiety to keep me safe	**.44****	−.07	**.49****	**.47****	−.05	−.12
BAFT11	Good chance that I might be dying when very anxious/afraid	.29**	−.33**	**.54****	**.42****	−.15	−.38**
BAFT12*	Could lose control of myself when anxious/afraid	**.61****	−.09	**.67****	**.61****	.03	−.30**
BAFT13	Must do something about my anxiety/fear	.39**	−.11	**.48****	**.45****	−.06	−.16
BAFT14	Must push unpleasant thoughts out of my mind	.33**	−.09	**.41****	.36**	.00	−.22
BAFT15	Must fight bad feelings so they go away	**.42****	−.03	**.44****	.39**	.06	−.23
BAFT16	My happiness and success depend on how good I feel	.33**	.00	.33**	.38**	−.09	.07
CFQ1*	My thoughts cause me distress or emotional pain	**.79****	.14*	**.74****	**.82****	.04	.01
CFQ2*	Get so caught up in my thoughts that I can't do things	**.74****	.00	**.82****	**.90****	−.11	.01
CFQ3	Over-analyze situations	**.63****	.16*	**.54****	**.65****	.01	.12
CFQ4*	Struggle with my thoughts	**.82****	.04	**.87****	**.89****	.01	−.11
CFQ5*	Get upset with myself for having certain thoughts	**.70****	−.03	**.80****	**.71****	.09	−.26**
CFQ6*	Get very entangled in my thoughts	**.65****	.08	**.64****	**.75****	−.07	.10
CFQ7*	Struggle to let go of upsetting thoughts	**.68****	.14	**.62****	**.67****	.08	.00

Note. $N = 351$. Error correlations were allowed among all indicators from the same scale. All items were coded such that higher scores indicate greater defusion or decentering. Standardized factor loadings greater than or equal to |.40| are shown in boldface. Fit indices for the one factor model: $\chi^2(962) = 1378.78$, $p < .001$; CFI = .942; RMSEA = .035; SRMR = .065. Fit indices for the two factor model: $\chi^2(912) = 1142.94$, $p < .001$; CFI = .968; RMSEA = .027; SRMR = .037; $r = .51$. Fit indices for the three factor model: $\chi^2(863) = 1028.966$, $p < .001$; CFI = .977; RMSEA = .023; SRMR = .034. Items indicated with an * were retained in the confirmatory analyses conducted on the other samples.
* $p < .05$. ** $p < .01$.

small to moderate sized relationships with OP and RS, as 73% of the correlations were less than or equal to |.40| and in the expected direction (see Table 6). However, there were a few strong correlations that were replicated across samples. First, OP was strongly associated with positive affectivity in two of three samples (*r*s = .50 and .52). Second, RS was strongly associated with self-concept clarity (*r*s = .67 and .68) and acting with awareness (*r*s = .50 to .60).

We used Steiger's *z* test for dependent correlations (Meng, Rosenthal, & Rubin, 1992) to test whether the magnitudes of convergent correlations (as identified in the prior paragraph) were

Table 5
Fit Indices for Confirmatory Factor Analyses of Defusion/Decentering Items

Sample	Model χ^2 (*df*)	CFI	TLI	RMSEA (90%CI)	SRMR	χ^2 diff test (*df*)
Student sample 2 ($N = 344$)						
1 factor	326.41 (220), $p < .001$	.960	.946	.037 (.029, .046)	.054	—
2 factor	279.74 (219), $p < .01$	.977	.969	.028 (.017, .038)	.042	920.03 (1), $p < .001$
Student sample 3 ($N = 503$)						
1 factor	329.24 (220), $p < .001$	.972	.962	.031 (.024, .038)	.047	—
2 factor	260.19 (219), $p < .05$	.990	.986	.019 (.007, .028)	.035	150.55 (1), $p < .001$
Clinical sample ($N = 211$)						
1 factor	263.42 (220), $p < .05$	.977	.969	.031 (.012, .044)	.046	—
2 factor	250.51 (219), $p < .05$	.984	.978	.026 (.000, .040)	.040	13.28 (1), $p < .001$

significantly stronger than the magnitudes of discriminant correlations for each factor within each sample. Thus, the convergent correlation of OP (i.e., with nonreactivity; note that this was the only hypothesized convergent construct for this factor) was compared with each of OP's discriminant correlations, and the convergent correlations of RS (i.e., with nonjudging, self-esteem, neuroticism, negative affectivity, perseverative thinking, rumination, and experiential avoidance) were compared with each of RS's discriminant correlations. Collapsing across samples, all of the 23 discriminant correlations were significantly weaker than the convergent correlation for OP, and 87% of the 155 discriminant correlations were significantly weaker than the convergent correlations for RS ($ps < .05$). In sum, these analyses suggest reasonable convergent and discriminant validity for scores on the OP factor, but the RS factor had very strong correlations with several putatively distinct negatively valenced constructs. Correlations with individual defusion/decentering scales are in the Appendix.

Concurrent criterion validity. We next examined predicted relationships with three sets of criterion variables: intensity and believability of self-relevant positive and negative thoughts, inclusion of thoughts and feelings (positive, negative, and general/valence unspecified) in the self, and symptoms of internalizing psychopathology (i.e., dysphoria, panic, and social anxiety) (see Table 7). The OP and RS factors were generally weak[1] but significant predictors of the intensity and believability of both positive and negative of thoughts. However, the direction of the association depended on the valence of the thought: for both factors, greater decentering/defusion was associated with less intensity and believability of *negative* thoughts ($r = -.09$ to $-.34$), but (unexpectedly) *increased* intensity and believability of positive thoughts ($r = .09$ to $.35$). This pattern was similar for the inclusion in self items, wherein greater defusion/decentering was associated with less inclusion of negative thoughts and feelings in self ($r = -.31$ to $-.47$), but with greater inclusion of positive thoughts and feelings in self ($r = .01$ to $.40$). Last, correlations between psychological symptoms and OP were variable in magnitude ($rs = -.16$ to $-.57$), whereas correlations with RS were quite large in magnitude ($rs = -.53$ to $-.81$). In particular, RS was so strongly correlated with symptoms of dysphoria as to suggest redundancy ($rs = -.75$ to $-.81$). For correlations between the criteria and individual defusion/decentering scales, see the Appendix.

Finally, we tested whether the two defusion/decentering factors predicted the above criteria *after* accounting for negative affectivity and for mindfulness (operationalized here as present moment awareness), given their close theoretical and empirical associations with defusion/decentering. Full results from Student Sample 2 are presented in the online supplement. To summarize briefly, the defusion/decentering factors explained significant additional variance beyond negative affectivity in 10 of 11 models (change in $R^2 = .032$ to $.280$), as well as beyond mindfulness in 10 of 11 models (change in $R^2 = .047$ to $.399$), suggesting that the defusion/decentering factors are incrementally informative in predicting the above outcomes beyond related strong and established predictors.

Does the Valence of Decentering/Defusion Items Substantively Alter Relationships With Criteria?

Our finding that defusion/decentering relates differently to negatively versus positively valenced thoughts and emotions may suggest a meaningful distinction in the effects of defusion/decentering, dependent on content valence. Alternatively, this could be an artifact of the fact that 80% of the defusion/decentering items included here relate to negatively valenced experiences, including *all* of the items that load on the RS factor. Thus, rather than measuring decentering or defusion in general, an individual's responses to these items might primarily or also reflect decentering specifically from negative thoughts and feelings, the *presence* of negative thoughts and feelings, or idiosyncratic responses to negatively valenced questions.

To remove the influence of item valence, we conducted structural analyses modeled after SEM multitrait-multimethod analyses (e.g., Brown, 2015). We focused on three measures (i.e., EQ, BAFT, DDS) that were treated as the "traits" in these analyses, and three valences (i.e., positive, negative, and unspecified valence) that were treated as "methods."[2] As described in the Measures section, none of these measures included all three valences, so we created parallel items for a subset of the original item measures to yield "matched" items with positive and negative valences (for the

[1] Note that intensity, believability, and inclusion of thoughts and feelings in self were each assessed with a single item, likely attenuating correlations relative to those of constructs assessed with a full scale (e.g., symptoms).

[2] Given the complexity of SEM multitrait-multimethod models (e.g., difficulties with convergence, the need for multiple items for all possible combinations of "trait" and "method"; Brown, 2015), and our desire to include multiple measures to draw broader conclusions, it was not feasible to examine each of the two defusion/decentering factors separately. Thus, we chose to instead examine a single defusion/decentering construct that included content from both factors; such a decision also seemed defensible because the factors are substantially correlated ($r = .66$).

Table 6
Convergent and Discriminant Correlations Between Defusion/Decentering Factors and Relevant Constructs

Correlation	Student Sample 1		Student Sample 2		Student Sample 3		Clinical Sample	
	OP	RS	OP	RS	OP	RS	OP	RS
Convergent correlations								
Mindfulness: Nonreactivity	—	—	**.69****	.33**	**.66****	.30**	**.71****	**.61****
Mindfulness: Nonjudging	**.41****	**.77****	.25**	**.65****	.28**	**.68****	**.52****	**.77****
Neuroticism	—	—	**−.68****	**−.82****	**−.66****	**−.77****	**—**	—
Negative Affectivity	—	—	−.39**	**−.64****	−.37**	**−.41****	**−.52****	**−.72****
Self-esteem	**.51****	**.66****	**.47****	**.67****	—	—	—	—
Perseverative thinking	**−.44****	**−.83****	**−.46****	**−.85****	—	—	—	—
Rumination	−.38**	**−.61****	−.32**	**−.60****	**−.40****	**−.70***	**−.53****	**−.63****
Experiential avoidance	−.32**	**−.47****	.10	**−.43**	−.23	**−.52****	**−.41****	**−.52****
Discriminant correlations								
PSC: Self-reflection	−.01	−.39**	−.05	**−.41****	−.05	**−.42****	—	—
PSC: Internal state aware	**.40****	.17**	.22*	.07	.39**	.20**	—	—
Self-concept clarity	.34**	**.68****	.37**	**.67****	**—**	—	—	—
Reappraisal	—	—	**.52****	.22**	—	—	**.41****	.31**
Suppression	—	—	.06	−.20**	—	—	−.15	−.25**
Mindfulness: Observing	—	—	.33**	−.12	—	—	.23**	.16
Mindfulness: Describing	—	—	.31**	.30**	—	—	**.44****	**.46****
Mindfulness: Awareness	.27**	**.60****	.23**	**.50****	**—**	—	**.44****	**.56****
Extraversion	—	—	.27**	.36**	.17*	.23**	—	—
Conscientiousness	—	—	.33**	.29**	—	—	—	—
Agreeableness	—	—	.31**	.17*	—	—	—	—
Openness	—	—	.25**	.08	—	—	—	—
Positive Affectivity	—	—	**.50****	.39**	.13*	.35**	**.52****	**.45****

Note. $N = 351$ (Student Sample 1), 344 (Student Sample 2), 503 (Student Sample 3), 206 (Clinical Sample). Correlations ≥|.40| are shown in boldface. OP = Observer Perspective; RS = Reduced Struggle with Inner Experience.
$^{*}p < .05$. $^{**}p < .01$.

DDS), or positive, negative, and unspecified valences (for the EQ and BAFT; see Table 8). Note that we only included a subset of items from each measure and we added new items, so these analyses should not be considered a "test" of the measures themselves, but rather they are intended to inform an examination of item valence with regard to the underlying construct.

The items used in these analyses are shown in Table 8, and data were collected from Student Samples 2 and 3. The model was specified such that each item loaded on both (a) a factor for the measure from which it was taken or modeled (EQ, BAFT, or DDS) and (b) the appropriate valence factor (positive, negative, or unspecified). To separate the variance attributable to measure and valence, the measure factors were specified as orthogonal to the valence factors (correlations were allowed within measure and within valence factors). Thus, the item loadings on each of the measure factors represent construct-relevant variance that is independent of item valence, whereas the valence factors represent shared variance across measures due to item valence that is independent of construct-relevant variance.

The pattern of factor loadings was very similar across both samples, so we focus on Student Sample 3, which had a larger sample and, consequently, should produce more precise parameter estimates. Table 8 shows the standardized factor loadings. For both the EQ and BAFT, strong measure factors emerged across items of varying valence, with secondary loadings on the valence factors, and in particular the negative valence factor. This suggests the presence of a coherent "valence-free" defusion-decentering factor for these items. However, whereas negative items loaded strongly on the DDS scale factor, positive items loaded very weakly on this factor, forming a strong positive valence factor instead. The DDS is unique in that it asks about one's perceived overall ability to defuse from specific thoughts and emotions, so these results suggest that one's ability— or perhaps more likely, motivation— to defuse is fundamentally different across positive and negative content.

Finally, we examined the correlations of the orthogonal measure factors and valence factors with the criteria examined earlier, now specified as latent variables (see Table 8 for correlations among these latent variables). Because the CFA indicated that the Negative and Unspecified valence factors were very highly correlated ($r = .96$), we dropped the Unspecified valence factor from the correlational analyses.[3] Two patterns stand out. First, the inverse associations of the "valence-free" defusion/decentering factor—as assessed by the BAFT—with negative-valenced outcomes were still significant (rs = −.20 to −.50); however, the DDS and EQ valence-free factors were less consistently related to these outcomes. Second, the previously described positive associations of defusion/decentering with positively valenced internal thoughts or feelings (see Table 7 and Appendix) did not remain after accounting for the valence of the decentering/defusion items; in fact, these correlations with inclusion of positive thoughts and feelings in self were now negative, as originally hypothesized. Thus, the prepon-

[3] Note that it is possible that because so many negative items were included in this study, the items that did not specify a valence were interpreted as if they referred to negative contents.

Table 7
Correlations Between Defusion/Decentering Factors and Criteria

Factor	Student Sample 1		Student Sample 2		Student Sample 3		Clinical Sample	
	OP	RS	OP	RS	OP	RS	OP	RS
Attachment to self-relevant thought: Intensity								
Negative	−.15*	−.20**	−.23**	−.34**	−.18**	−.25**	−.13	−.22*
Positive	.09	.12*	.24**	.14*	.12*	.16**	.21*	.27**
Attachment to self-relevant thought: Believability								
Negative	−.14*	−.15*	−.16*	−.31**	−.09	−.28**	−.28**	−.24**
Positive	.22**	.25**	.35**	.26**	.22**	.20**	.28**	.22*
Inclusion of thoughts in self	−.13*	−.23**	−.04	−.08	−.19**	−.12*	−.25**	−.10
Negative	—	—	−.34**	−.44**	−.31**	−.43**	−.40**	−.36**
Positive	—	—	.24**	.30**	.07	.23**	.21*	.40**
Inclusion of feelings in self	−.08	−.14*	.05	−.05	−.20**	−.12**	−.15	−.03
Negative	—	—	−.31**	−.44**	−.32**	−.39**	−.47**	−.40**
Positive	—	—	.18*	.29**	.01	.19**	.29**	.39**
Internalizing symptoms								
Social anxiety	−.33**	−.66**	−.37**	−.68**	−.29**	−.65**	−.41**	−.63**
Panic	.20**	−.60**	−.37**	−.62**	−.16*	−.53**	−.29**	−.54**
Dysphoria	−.42**	−.77**	−.52**	−.81**	−.35**	−.75**	−.57**	−.77**

Note. $N = 351$ (Student Sample 1), 344 (Student Sample 2), 503 (Student Sample 3), 211 (Clinical Sample). OP = Observer Perspective; RS = Reduced Struggle with Inner Experience.
* $p < .05$. ** $p < .01$.

derance of negatively valenced items appears to impact how these measures are associated with positively valenced outcomes.

Discussion

Across four data sets, we examined the structure and validity of scores on measures of decentering and defusion. A number of key findings emerged: (a) Existing measures of decentering and defusion were weakly to modestly related to each other. (b) Items on decentering and defusion measures seem to reflect two related constructs, which we have labeled Observer Perspective (OP) and Reduced Struggle with Inner Experience (RS). (c) OP and RS factors generally show expected patterns of relationships with a variety of criterion, and they show moderate specificity vis-a-vis one another in their patterns of associations. (d) Exceptions are that although increased OP and RS predict decreased intensity and believability of negative thoughts, they demonstrated *increased* intensity and believability of positive thoughts, and RS demonstrated particularly strong correlations with negatively valenced constructs, including negative affectivity, neuroticism, perseverative thinking, and dysphoria. And (e) the reliance on negative content of items in these scales may affect the empirical associations and conclusions that can be drawn. Below, we discuss some of these findings in greater detail.

Meaning of Factor Structure

The measures included in our studies appear to reflect two distinct but related constructs: observer perspective and reduced struggle with inner experience. Interestingly, these factors seem to correspond to two of the metacognitive processes in a recent model of decentering and related constructs (Bernstein et al., 2015). In their model, Bernstein and colleagues proposed that three related constructs underlie decentering-related phenomena. The first, meta-awareness, reflects one's awareness of one's ongoing mental life. They argue, and we agree, that meta-awareness is a necessary precondition for any subsequent processes (without at least some awareness of one's thought processes, one's secondary appraisals of these thoughts is unlikely to matter). The second, disidentification from internal experience, involves experiencing one's internal states as separate from oneself, and seems to map onto our OP factor. The third, reduced reactivity to thought content, reflects a reduced internal impact of one's thoughts (see also Briñol & Petty, 2009; Briñol, Gasco, Petty, & Horcajo, 2013), and seems similar to our RS factor. Furthermore, the factors onto which each of the scales loaded in our analysis match their conceptual predictions based on the content of items (e.g., TMS, EQ, and DDS items load on OP, CFQ items load on RS). Although the Bernstein et al. conceptual paper was not published at the time of our data collection, the convergence of our empirical data with their conceptual framework is striking.

It is worth noting, however, that other interpretations of our factor structure are plausible. For example, whereas Bernstein and colleagues (2015) argue that these factors should be mutually reinforcing, it might also be the case that OP represents the *true* decentering factor. Indeed, the various definitions of decentering and defusion we examined most commonly emphasize the distant observer perspective. The degree to which a person struggles with their thoughts might then be construed as a *consequence* of ineffective decentering. Whether RS is a conceptually meaningful consequence is unclear, as it could plausibly be a stand-in for other measures of (mal)adaptive functioning, given the very strong correlations with negative affect, neuroticism, perseverative thinking, and internalizing symptoms. But it is noteworthy that RS consistently demonstrated incremental predictive power over negative affectivity (which was reduced to nonsignificance) when predicting internalizing symptoms, suggesting that RS may tap into variance

Table 8
Confirmatory Factor Analysis (Top of Table) Specifying Orthogonal Measure and Valence Factors in Defusion/Decentering Items and Factor Correlations With Criteria (Bottom of Table)

		Measure factors			Valence factors		
	Factor	EQ	BAFT	DDS	Positive	Negative	Unspecified
	Standardized factor loadings						
EQ2+	Observe pleasant feelings without being drawn in	**.62****			.15*		
EQ7+	Slow my thinking in times of joy	**.48****			.12		
EQ5+	Separate myself from positive thoughts/feelings	**.64****			.20**		
EQ2-	Observe unpleasant feelings without being drawn in	**.65****				**.45****	
EQ5-	Separate myself from negative thoughts/feelings	**.57****				.33**	
EQ7-	Slow my thinking during stress	**.43****				.23**	
EQ5N	Separate myself from thoughts/feelings	**.66****					.30**
EQ2N	Observe feelings without being drawn in	**.66****					.38**
BAFT4+	Must stay in control of positive emotions		**−.48****		.01		
BAFT12+	Could lose control of myself when happy		**−.44****		−.06		
BAFT13+	Must do something about it when I feel really good		**−.48****		−.03		
BAFT14+	Must push pleasant thoughts out of my mind		−.39**		−.12*		
BAFT12-	Could lose control of myself when anxious/afraid		**−.45****			**.48****	
BAFT13-	Must do something about my anxiety/fear		**−.55****			.23**	
BAFT14-	Must push unpleasant thoughts out of my mind		**−.52****			−.16	
BAFT3-	Can't do the things that I want to do when I have anxiety/fear		**−.55****			**.42****	
BAFT6-	My anxious thoughts/feelings are a problem		**−.49****			**.63****	
BAFT4N	Must stay in control of my emotions		**−.47****				−.03
BAFT3N	My emotions get in the way of important things		**−.55****				**.51****
BAFT6N	My thoughts and emotions are a problem		**−.48****				**.61****
DDS10+	Defuse from excitement			.15*	**.62****		
DDS1+	Defuse from feelings of gratitude			.13	**.66****		
DDS5+	Defuse from feelings of pride in self			.12	**.55****		
DDS6+	Defuse from thoughts of optimism			.08	**.74****		
DDS10-	Defuse from feelings of sadness			**.53****		.20**	
DDS1-	Defuse from anger			**.48****		.10	
DDS5-	Defuse from negative thoughts of self			**.62****		.21**	
DDS6-	Defuse from thoughts of hopelessness			**.61****		.34**	
	Correlations between factors and criteria						
Attachment to self-relevant thoughts							
Positive		−.01	−.02	−.09	−.30**	.24**	
Negative		−.14	−.34**	−.10	.04	−.28**	
Inclusion of thoughts and feelings in self							
Positive		−.17**	.00	−.17**	−.20*	.25**	
Negative		−.26**	−.20**	−.09	.13	−.37**	
General		−.25**	−.09	−.17**	−.12	−.15*	
Internalizing symptoms							
Panic		−.06	−.39**	.07	.26**	−.14*	
Social anxiety		−.07	−.37**	−.05	.03	−.45**	
Dysphoria		−.18*	−.50**	.02	.16	.33**	

Note. $N = 503$ (Student Sample 3). All items were coded such that higher scores indicate greater defusion or decentering. Standardized factor loadings greater than or equal to |.40| are shown in boldface. Underlined items are novel items generated for this study. Fit indices for CFA: $\chi^2(316) = 593.95$, $p < .001$; CFI = .920; RMSEA = .042; SRMR = .052. Attachment to self-relevant thoughts (positive and negative) are latent variables with believability and intensity as indicators. Inclusion of thoughts and feelings in self (positive, negative, and neutral) are latent variables with the thoughts and feelings items as indicators. Internalizing symptoms are latent variables with their respective IDAS items as indicators. Note that the "Unspecified" valence factor was removed because it was very highly correlated with the "Negative" factor ($r = .96$).
* $p < .05$. ** $p < .01$.

that is uniquely and specifically associated with psychopathology.

One's level of meta-awareness may also differentially affect their ability to accurately report on these two factors, perhaps contributing to the emergence of distinct factors. Specifically, at least some level of meta-awareness may be necessary to recognize *any* kind of perspective (i.e., detached or immersed) toward one's internal experiences, and consequently, measures of observer perspective will necessarily be confounded, at least in part, with meta-awareness. For individuals low in meta-awareness, the meaning of an item like "can see that I am not my thoughts" or "view things from a wider perspective" may be unclear, leading to responses that are inconsistent or inaccurate. In contrast, regardless of one's level of meta-awareness, if aversive thoughts or feelings are causing significant distress and a perceived need to eliminate them, the individual is very likely to be aware of this struggle and able to report it (or, conversely, they may be aware that they do not engage in such

struggles). Thus, it is plausible that meta-awareness is a "prerequisite" for insight into one's level of OP, but less so for RS, resulting in the empirical distinction observed here. Although we are not aware of any pure measure of meta-awareness, the inclusion of such a measure with measures of OP and RS might help future research to explore these ideas.

Last, a more mundane interpretation of the factor structure is possible. All of the items on the OP factor are worded such that agreement indicates greater decentering/defusion, whereas all of the items on the RS factor are worded such that *dis*agreement indicates greater decentering/defusion. Examination of the structure of other putative unidimensional and bipolar constructs (e.g., self-esteem, some personality traits) has revealed that item keying can at times lead to the identification of nonsubstantive factors (i.e., a straightforward item factor and a reverse-keyed factor), because of response characteristics such as acquiescence, careless responding, confirmation bias, and social desirability/favorability (Kam & Meyer, 2015; Weijters, Baumgartner, & Schillewaert, 2013). Because none of the decentering/defusion measures had reverse-keyed items, measure and keying were confounded such that we were not able to employ analytical techniques to isolate the impact of keying (see Kam & Meyer, 2015, for a structural analysis of keying with a similar approach to our analyses examining item valence). Thus, although we found this two-factor structure consistently across multiple samples, the substantive meaning and import of this distinction needs to be examined in future research.

Roles of Valence

Counter to theory about decentering and defusion, we found that the associations of trait decentering/defusion measures with relevant criteria (i.e., believability/intensity of self-relevant thoughts, inclusion of thoughts and feelings in self) depended on the valence of the criterion. Although associations with negative criteria were in the expected direction, individuals who reported high levels of decentering/defusion indicated *greater* believability/intensity of positive thoughts and *greater* inclusion of positive thoughts and feelings in their conception of self. To our knowledge, this study is the first examination of fusion with positive thoughts or feelings, and thus it will be important to replicate these findings and to build on them. Although defusion/decentering theoretically *may* be applied to any internal experiences, it is plausible that people generally are only motivated to defuse from negative contents, as these experiences are aversive and defusion/decentering is one means of reducing the concomitant negative affect (Bernstein et al., 2015). Fusion with positive thoughts and experiences may also serve a protective function by providing a stable sense of self-esteem and well-being, similar to self-serving biases among psychologically healthy individuals (Kernis, 1993; Taylor & Brown, 1988).

As noted in Table 1, the majority of items across the scales we examined were negative in content, either in terms of people's primary cognitions (e.g., the TMS-D item: "I am receptive to observing unpleasant thoughts and feelings without interfering with them.") or in terms of people's secondary cognition (e.g., the CFQ item: "My thoughts cause me distress or emotional pain."). Thus, another possible reason for these valence-dependent results is that the negatively valenced items do not adequately assess defusion/decentering from positive contents. When we conducted analyses using items we generated ourselves to parse out possible effects of item valence and the constructs ostensibly measured by each scale, we generally found that valenced items tapped into both the underlying construct and the relevant valence. Further, as can be seen by comparing Table 8 with Table 7 (and the Appendix), although many effects were reproduced, in the case of inclusion of *positive* thoughts in the self, several relationships were significantly reversed once the valence of item content was partialed out of the decentering/defusion measures. Thus, the theoretically congruent prediction—that decentering/defusion should be realized in less overlap between the self and *any* thought or feeling— was only borne out after controlling for the negative content of the items. Overall, these analyses suggest that existing measures of decentering/defusion are limited in their ability to detect defusion/decentering that is independent of the valence of the experience. This is particularly important for the ACT conceptualization of defusion, which postulates that fusion with any content, whether positive or negative, may become problematic if it leads to rigid behavior that is overly determined by the thoughts to which one is fused (Hayes et al., 2012).

Practical Implications

We found that measures of decentering and defusion were only weakly to moderately associated with each other, suggesting that these scales are not measuring the same things in practice. This is problematic, as researchers and clinicians often expect very similar results regardless of which specific measure of a construct is used, and our findings highlight the importance of carefully selecting defusion/decentering measures that are most appropriate for a given purpose. We provide tables in the Appendix that show measure-specific correlations to facilitate this selection process, and to inform evaluations of the construct validity of scores on each measure. Summarizing briefly for the decentering measures, EQ appeared to be more relevant to healthy psychological functioning than TMS-Decentering, which was often unrelated to the constructs examined here. Among defusion measures, BAFT and CFQ generally had similar (and strong) associations with psychological maladjustment and a lack of acceptance, whereas DDS tapped more into taking a distanced perspective on internal experiences. However, we emphasize that there was substantial variability in associations across measures, and this is consistent with measure-specific variance as indicated by significant error covariances of items from the same measure in structural analyses. We also note that none of these measures have items that provide good coverage of both OP and RS, so we recommend using multiple measures to assess the full breath of decentering and defusion. Specifically, the EQ would provide the best assessment of one's perspective toward thoughts and feelings, whereas either the BAFT (defusion from anxiety-relevant thoughts) or CFQ (defusion more generally) would provide good coverage of the extent to which one struggles with these experiences.

Our results have several other assessment implications. First, if the intent is to assess defusion/decentering from anything *other than* negative contents (i.e., positive contents, neutral contents, or regardless of valence), existing measures may result in attenuated associations or associations with incorrect directionality. As such, results using current measures where negatively valenced items

predominate may not provide trustworthy assessment of decentering or defusion from neutral or positive internal experiences. If decentering/defusion *in general* are of interest, future work should develop and validate valence-free measures of these constructs, as doing so should increase the breadth of domains to which such measures would be applicable. However, if researchers are interested in decentering/defusion from only negative internal states, then care should be taken to differentiate these concepts from the mere presence of negative internal states. In addition, the discriminant and incremental validity of scores on the RS factor and its component measures is of concern, as it was consistently quite strongly associated with numerous broad indices of maladaptive psychological functioning. Thus, RS likely serves as a good proxy for general psychological distress, but OP is more likely to provide *unique* information relative to other processes and traits associated with psychopathology (e.g., rumination, experiential avoidance, neuroticism).

In terms of clinical implications, our data replicate other findings of substantially lower defusion/decentering in clinical samples than in nonclinical samples across measures (e.g., Forman et al., 2012; Fresco et al., 2007; Herzberg et al., 2012), consistent with the idea that interventions should target this process. In our data, Cohen's *d* were generally large, indicating that treatment-seeking individuals reported lower levels of both OP and RS (*d*s for CFQ = .98 to 1.07, DDS = −.66 to −.88, BAFT = .96 to 1.08, EQ = −90 to −1.02, TMS-D = −.90 to −1.00). It is noteworthy that, although the two-factor structure fit best in the clinical sample, the strong correlation between the factors means that there is less of a distinction between factors for psychologically distressed individuals. One possible explanation for this finding is that most clinical participants reported current therapy (and likely others had received it in the past), where they were likely to engage in techniques to help increase their meta-awareness (e.g., disputing thoughts, observing emotions, defusion/decentering exercises). Such training may have allowed these participants to more accurately report on their levels of OP, relative to nonclinical samples, which may have attenuated the distinction between the two factors.

Limitations and Future Directions

This study has multiple strengths, including a variety of analytic approaches and replication of primary results across multiple samples, nonclinical and clinical. However, several limitations should be considered when interpreting these findings. First, although we used some novel assessment techniques, such as rating participant-generated self-relevant thoughts and the inclusion of thoughts and feelings in self, all of our assessments relied on self-report. Although other-report may not be very useful for assessing this internal, nonvisible process, interviewing or coding of narratives may provide additional information that is valuable for assessing individuals with low levels of meta-awareness or insight into these processes. Second, these data are correlational and cross-sectional, precluding any causal inferences (i.e., does low defusion/decentering lead to psychopathology, and/or vice versa?). Third, although we examined a clinical sample that was low in decentering/defusion, we did not include a sample of individuals expected to be high in defusion/decentering (e.g., experienced meditators).

As described previously, we were not able to separate out the impact of keying on the two-factor structure revealed here. Defusion/decentering measures with reverse-keyed items would facilitate further examination of the underlying structure, as would a measure of meta-awareness (although we recognize that it may not be feasible to assess low levels of meta-awareness via self-report). We also did not examine how social desirability correlates with the OP and RS factors; such information would assist in evaluating the extent to which these factors are substantive versus artifactual. Finally, we only examined defusion/decentering associations with internalizing psychopathology symptoms (i.e., dysphoria, panic, social anxiety). Future research should include associations of defusion/decentering from positive and negative content with symptoms associated with elevated positive affect or positive self-relevant thoughts, such as mania and narcissism, as increased fusion with positive contents may be uniquely problematic for these individuals. As the field refines the definition and measurement of defusion and decentering, we look forward to seeing its applications to a wider variety of internal experiences, in both the adaptive and maladaptive realms of psychological functioning.

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Appendix

Correlations of Decentering/Defusion Measures With Other Constructs by Sample

Variable	Sample	EQ	DDS	TMS decenter	BAFT	CFQ
Mindfulness: Acting with awareness	SS1	.30**	.13*	−.06	**.48****	**.58****
Mindfulness: Acting with awareness	SS2	.18**	.11	−.13*	.38**	**.40****
Mindfulness: Acting with awareness	CS	**.48****	.32**	.10	**.40****	**.46****
Mindfulness: Describing	SS2	.28**	.12*	.03	.21	.21**
Mindfulness: Describing	CS	**.40****	.35**	.23**	.32**	.36**
Mindfulness: Nonjudging	SS1	**.41****	.21**	.00	**.63****	**.67****
Mindfulness: Nonjudging	SS2	.22**	.10	−.03	**.52****	**.50****
Mindfulness: Nonjudging	SS3	.25**	.13**	.04	**.52****	**.55****
Mindfulness: Nonjudging	CS	**.48****	.29**	.24**	**.53****	**.60****
Mindfulness: Nonreactivity	SS2	**.48****	.30**	**.42****	.08	.28**
Mindfulness: Nonreactivity	SS3	**.51****	.34**	.35**	.10**	.25**
Mindfulness: Nonreactivity	CS	**.55****	**.40****	**.48****	.29**	**.51****
Mindfulness: Observing	SS2	.30**	.09	.23**	−.22**	−.08
Mindfulness: Observing	CS	.28**	.20**	.05	.13	.11
BFI: Agreeableness	SS2	.30**	.13*	.01	.15**	.10
BFI: Conscientiousness	SS2	.28**	.19**	−.03	.17**	.24**
BFI: Extraversion	SS2	.25**	.15**	.06	.29**	.22**
BFI: Extraversion	SS3	.17**	.17**	.14**	.14**	.19**
BFI: Neuroticism	SS2	**−.51****	−.31**	−.17**	**−.53****	**−.67****
BFI: Neuroticism	SS3	**−.51****	−.35**	−.27**	**−.49****	**−.64****
BFI: Openness	SS2	.25**	.09	.08	.06	.05
Negative affect	SS2	−.34**	−.20**	−.06	**−.43****	**−.54****
Negative affect	SS3	−.34**	−.16**	−.05	**−.48****	**−.57****
Negative affect	CS	**−.47****	−.39**	−.28**	**−.55****	**−.57****
Positive affect	SS2	**.41****	.24**	.15**	.20**	.33**
Positive affect	SS3	**.40****	.30**	.22**	.22**	.23**
Positive affect	CS	**.48****	.38**	.21**	.36**	.34**
Perseverative thinking	SS1	**−.43****	−.20**	−.02	**−.61****	**−.79****
Perseverative thinking	SS2	−.36**	−.22**	.01	**−.59****	**−.72****
Rumination	SS1	−.35**	−.29**	−.01	**−.50****	**−.56****
Rumination	SS2	−.26**	−.19**	.02	**−.46****	**−.50****
Rumination	SS3	−.34**	−.21**	−.08*	**−.49****	**−.59****
Rumination	CS	**−.44****	−.39**	−.24**	**−.51****	**−.58****
Experiential avoidance	SS1	−.31**	−.21**	.04	**−.46****	**−.40****
Experiential avoidance	SS2	−.10	−.06	.08	**−.44****	−.28**
Experiential avoidance	SS3	−.20**	−.09*	−.06	**−.47****	−.38**
Experiential avoidance	CS	−.38**	−.25**	−.19**	**−.52****	**−.42****
Self-esteem	SS1	**.54****	.36**	.03	**.47****	**.56****
Self-esteem	SS2	**.41****	.26**	.13*	**.40****	**.49****
PSC: Internal state awareness	SS1	.38**	.28**	.12*	.07	.11
PSC: Internal state awareness	SS2	.26**	−.05	.04	−.04	.04
PSC: Internal state awareness	SS3	.38**	.13**	.16**	.08*	.12**
PSC: Self-reflection	SS1	−.03	−.06	.17**	**−.41****	−.35**
PSC: Self-reflection	SS2	.01	.00	.13*	−.32**	−.35**
PSC: Self-reflection	SS3	−.05	−.01	.15**	−.38**	−.37**
Self-concept clarity	SS1	.38**	.11	−.09	**.51****	**.61****
Self-concept clarity	SS2	.28**	.19**	−.12*	**.48****	**.51****
Reappraisal	SS2	**.41****	.26**	.28**	−.03	.22**
Reappraisal	CS	.37**	.26**	.22**	.17*	.27**
Suppression	SS2	−.04	−.02	.14**	−.25**	−.15*
Suppression	CS	−.20**	−.03	−.04	−.24**	−.18**

Note. SS1–SS3 = Student Sample 1–3; CS = Clinical Sample; $N_{SS1} = 351$; $N_{SS2} = 344$; $N_{SS3} = 503$; $N_{CS} = 211$. Correlations greater than or equal to |.40| are shown in boldface. All defusion/decentering scales were coded such that higher scores indicate greater defusion or decentering.
* $p < .05$. ** $p < .01$.

(*Appendix continues*)

Correlations of Decentering/Defusion Measures With Criteria by Sample

Measure	Sample	EQ	DDS	TMS Decenter	BAFT	CFQ
Attachment to self-relevant thought: Intensity						
Negative	SS1	−.13*	−.10	−.05	−.18**	−.19**
Negative	SS2	−.20**	−.20**	−.01	−.24**	−.30**
Negative	SS3	−.13**	−.13**	−.06	−.22**	−.19**
Negative	CS	−.10	−.06	−.06	−.21**	−.17*
Positive	SS1	−.15**	.07	.01	.01	.06
Positive	SS2	.26**	.09*	.12*	.03	.13*
Positive	SS3	.18**	.13**	.03	.09**	.12**
Positive	CS	.31**	.08	.00	.12	.24**
Attachment to self-relevant thought: Believability						
Negative	SS1	−.13*	−.16**	−.11*	−.09	−.17**
Negative	SS2	−.16**	−.11*	.00	−.20**	−.26**
Negative	SS3	−.11*	−.04	.01	−.17**	−.21**
Negative	CS	−.27**	−.21**	−.13	−.26**	−.17*
Positive	SS1	.23**	.18**	−.02	.14**	.17**
Positive	SS2	.34**	.16**	.08	.16**	.20**
Positive	SS3	.25**	.19**	.09*	.14**	.12**
Positive	CS	.29**	.20**	.12	.20**	.20**
Inclusion of thoughts in self						
General	SS1	−.12*	−.01	−.16**	−.19**	−.23**
General	SS2	.02	−.01	−.09*	−.02	−.09*
General	SS3	−.11**	−.10*	−.09*	−.07	−.11**
General	CS	−.18**	−.13	−.13	−.17*	−.08
Negative	SS2	−.30**	−.16**	−.15**	−.23**	**−.40****
Negative	SS3	−.27**	−.21**	−.06	−.26**	−.39**
Negative	CS	−.29**	−.26**	−.18**	−.21**	−.35**
Positive	SS2	.27**	.07	.07	.21**	.22**
Positive	SS3	.12**	.07*	.07*	.09*	.18**
Positive	CS	.20**	.08	.11	.19**	.34**
Inclusion of feelings in self						
General	SS1	−.09*	−.04	−.11*	−.15**	−.15**
General	SS2	.07	.07	−.14*	−.02	−.04
General	SS3	−.09*	−.11**	−.12**	−.07	−.13**
General	CS	−.05	−.04	−.13	−.04	−.03
Negative	SS2	−.29**	−.13*	−.14*	−.24**	−.37**
Negative	SS3	−.27**	−.20**	−.08*	−.20**	−.37**
Negative	CS	−.38**	−.31**	−.24**	−.27**	−.36**
Positive	SS2	.20**	.09*	.00	.19**	.23**
Positive	SS3	.05	.07*	.00	.09*	.16**
Positive	CS	.31**	.18**	.18**	.22**	.33**
Internalizing symptoms						
Dysphoria	SS1	**−.44****	−.19**	.02	**−.57****	**−.72****
Dysphoria	SS2	**−.41****	−.23**	−.09	**−.51****	**−.69****
Dysphoria	SS3	−.31**	−.13**	−.06	**−.47****	**−.64****
Dysphoria	CS	**−.53****	**−.42****	−.23**	**−.56****	**−.63****
Panic	SS1	−.24**	−.08	.10	**−.46****	**−.54****
Panic	SS2	−.32**	−.15**	.01	**−.43****	**−.49****
Panic	SS3	−.18**	−.04	.02	−.37**	**−.45****
Panic	CS	−.25**	−.20**	−.15*	**−.49****	**−.41****
Social anxiety	SS1	−.36**	−.21**	.05	**−.52****	**−.59****
Social anxiety	SS2	−.33**	−.12*	.07	**−.48****	**−.51****
Social anxiety	SS3	−.28**	−.15**	−.04	**−.47****	**−.52****
Social anxiety	CS	**−.40****	−.27**	−.22**	**−.54****	**−.45****

Note. SS1–SS3 = Student Sample 1–3; CS = Clinical Sample; N_{SS1} = 351; N_{SS2} = 344; N_{SS3} = 503; N_{CS} = 211. Correlations greater than or equal to |.40| are shown in boldface. All defusion/decentering scales were coded such that higher scores indicate greater defusion or decentering.
* $p < .05$. ** $p < .01$.

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