# Schema Theory and Schema Therapy in Mood and Anxiety Disorders: A Review

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Schema theory was developed for patients with chronic psychological problems who fail to make significant gains in cognitive therapy. Although the theory has been applied most frequently to personality disorders, mood and anxiety disorders may also be a relevant application. This article reviews the literature applying schema theory to mood and anxiety disorders. The literature suggests that people with mood and anxiety disorders present high levels of early maladaptive schemas, some of which would appear to reflect the characteristics of the individual disorders. Preliminary research suggests that schema therapy may be successfully extended to mood and anxiety disorders. Further research is necessary to examine the utility of schema therapy for these clienteles and to identify the individuals who stand to benefit most.

**Keywords:** cognitive schemas; schema therapy; mood disorders; anxiety disorders; literature review

Mood and anxiety disorders encompass a wide range of highly prevalent mental health problems. An estimated 20.8% of the population will experience a mood disorder at some point in their lives, whereas 28.8% will experience an anxiety disorder (Kessler et al., 2005). Among the risk factors for developing mood or anxiety disorders are a positive family history of a psychiatric disorder and childhood trauma (de Graaf, Bijl, Smit, Vollebergh, & Spijker, 2002).

The cognitive vulnerability–stress theory has been advanced to explain mood and anxiety disorders (Alloy & Riskind, 2006). Based on Beck's (1987) cognitive theory, individuals who have negative cognitive schemas or core beliefs are at an increased risk for depression. When a stressful life event occurs, negative cognitive schemas are activated and affect the way the individual interprets the event, leading to depressive symptoms. A similar process has been proposed to explain the vulnerability to anxiety (e.g., Hankin & Abela, 2005). Considerable evidence supports the cognitive vulnerability–stress theory as applied to the mood and anxiety disorders (e.g., Hankin, Abramson, Miller, & Haeffel, 2004; Reardon & Williams, 2007).

Based on Beck's cognitive model, cognitive behavioral therapy (CBT) has evolved as a treatment of choice (Clark & Beck, 2010; Clark, Beck, & Alford, 1999; Newman, Leahy, Beck, Reilly-Harrington, & Gyulai, 2002). CBT employs techniques such as cognitive restructuring, behavioral activation, exposure, and relaxation training. For example, patients undergoing CBT

are asked to track their automatic thoughts and the associated beliefs, emotions, and behaviors. They are then taught to challenge their maladaptive beliefs and test alternative behaviors. This form of psychotherapy has been demonstrated effective for a wide range of disorders (Nathan & Gorman, 2007).

Although as a whole CBT is quite effective for the mood and anxiety disorders, some patients continue to show symptoms or experience relapses subsequent to treatment, particularly in chronic cases (Durham, Chambers, MacDonald, Power, & Major, 2003; Fournier et al., 2009). For these patients, a different approach would seem to be required. To this end, Jeffrey Young developed schema theory for patients with severe, chronic psychological problems who fail to make significant gains in traditional cognitive therapy (Young, 1990; Young, Klosko, & Weishaar, 2003). Young suggests that certain patients are a poor fit for cognitive therapy and require a more extensive treatment approach, in part because of their difficulty identifying, accessing, and changing their cognitions and emotions. Young's schema theory does not attempt to compete with traditional Beckian theory, but rather expands on it for a treatment-resistant clientele whose psychological problems are thought to be maintained by complex characterological underpinnings. It does so by placing greater emphasis on the developmental origins of severe psychopathology.

Central to the schema model are *early maladaptive schemas* (EMSs), defined as broad, pervasive character traits that develop during childhood in reaction to toxic early experiences (Young et al., 2003). Young et al. have identified 18 different EMSs to date, each with its own proposed origin and long-term impact. The 18 EMSs are grouped into five umbrella categories known as *schema domains*, bringing together the EMSs that tend to develop together. A complete listing of the EMSs and schema domains is provided in Table 1. A broad body of literature has supported the existence and developmental origins of EMSs in personality disorders (e.g., Jovev & Jackson, 2004; Lobbestael, Arntz, & Sieswerda, 2005). A second component of the theory and a main focus of treatment are schema "modes." These modes represent the current emotional state of the individual, including the particular constellation of EMSs that are activated at a given moment in time. New research has begun to support the schema mode component of the theory (Arntz, Klokman, & Sieswerda, 2005; Lobbestael, Van Vreeswijk, & Arntz, 2008).

The EMSs are assessed using the self-report Young Schema Questionnaire (YSQ; Young, 2005). Each item in the questionnaire is a statement based on a maladaptive belief as defined by schema theory. Respondents are asked to rate the degree to which they agree with the statements on a 6-point Likert scale (1–6). A mean score is calculated for each EMS, a higher score representing a higher endorsement of the EMS in question. The YSQ is evolving as schema theory continues to develop and is currently in its third revision, available in both long (YSQ-L3) and short (YSQ-S3) forms. Research has supported the validity of the YSQ as a measure of the EMSs (e.g., Baranoff, Oei, Cho, & Kwon, 2006; Lee, Taylor, & Dunn, 1999; Stopa, Thorne, Waters, & Preston, 2001).

Schema theory also has clinical implications. Young et al. (2003), for example, discuss each EMS's impact on the therapeutic process and propose a recommended treatment approach. In doing so, they have developed an integrative form of psychotherapy known as *schema therapy* (ST), an approach employing techniques from multiple schools of psychotherapy. Research has demonstrated that ST is an effective treatment for personality disorders (Giesen-Bloo et al., 2006; Gude & Hoffart, 2008), and that the degree of EMS change over the course of ST predicts symptom relief (Nordahl, Holthe, & Haugum, 2005).

Schema theory and ST have been most widely applied to personality disorders given how these conditions naturally fit with schema theory. However, the schema model might also be relevant to the mood and anxiety disorders. Indeed, the maladaptive childhood experiences that are considered causal to EMSs place individuals at risk not only for Axis II disorders, but also for the full range of psychological disorders, with little specificity (Green et al., 2010). In addition,

**TABLE 1.  THE 18 EARLY MALADAPTIVE SCHEMAS (EMSS) AND 5 SCHEMA DOMAINS OF THE YSQ-3**

| Schema Domain | EMS | Brief Description |
|---|---|---|
| Disconnection and rejection | 1. Abandonment | The belief that significant others will leave |
| | 2. Mistrust/Abuse | The belief that others will lie or take advantage |
| | 3. Emotional Deprivation | The feeling that adequate emotional support is not available |
| | 4. Defectiveness/Shame | The belief that one is flawed or worthless |
| | 5. Social Isolation/Alienation | The feeling of separation from others |
| Impaired autonomy and performance | 6. Dependence/ Incompetence | The feeling that one is unable to take care of oneself |
| | 7. Vulnerability to Harm or Illness | The belief that catastrophe is impending |
| | 8. Enmeshment/ Undeveloped Self | The fusion of identity with a significant other |
| | 9. Failure | The belief that one is inadequate compared with others |
| Impaired limits | 10. Entitlement/Grandiosity | The belief that one is superior to and more deserving than others |
| | 11. Insufficient Self-Control/ Self-Discipline | The belief that one cannot restrain emotions or impulses |
| Other-directedness | 12. Subjugation | The feeling that one's own needs are less important than those of others |
| | 13. Self-Sacrifice | The focus on meeting the needs of others at the expense of one's own |
| | 14. Approval-Seeking/ Recognition-Seeking[a] | The heightened need for approval/ recognition from others |
| Overvigilance and inhibition | 15. Negativity/Pessimism[a] | The pervasive focus on negative aspects of life |
| | 16. Emotional Inhibition | The constriction of emotional expression |
| | 17. Unrelenting Standards/ Hypercriticalness | The perfectionist drive to achieve |
| | 18. Punitiveness[a] | The belief that mistakes warrant punishment |

*Note.* The names of some EMSs vary slightly between the three versions of the YSQ. The YSQ-3 names are used. YSQ = Young Schema Questionnaire; YSQ-3 = Young Schema Questionnaire, third edition.
[a]These EMSs are new to the third version of the YSQ. Absent from the list is the *Social Undesirability* EMS, no longer a separate EMS as of YSQ-3.

EMSs have been shown to apply to Axis I disorders; individuals with high EMS scores demonstrate continual schema arousal that is not simply a function of stressful experiences (Schmidt & Joiner, 2004). In complex cases, mood and anxiety disorders can be characterized by a great deal of chronicity (Satyanarayana, Enns, Cox, & Sareen, 2009; Yonkers, Bruce, Dyck, & Keller, 2003). Given this chronicity and the developmental risk factors, it would appear logical to extend schema theory and ST beyond the personality disorders to also benefit mood and anxiety disorder patients.

The purpose of this article was to review the literature applying schema theory and ST to the mood and anxiety disorders. We synthesized the existing research extending schema theory beyond the personality disorders and highlighted its relevance to mood and anxiety psychopathology. The effects of schema-focused therapy on EMSs and other processes are also examined. We searched the PsychINFO and Medline databases in August 2010 using the search terms "Early Maladaptive Schemas," "EMS," "Young Schema Questionnaire," "YSQ," "Schema Modes," "Schema Therapy," and "Schema-focused Therapy." Reference lists of relevant articles were also examined for additional studies. Articles were retained if they were peer-reviewed and presented original, interpretable research on some aspect of schema theory, specifically in adults with mood or anxiety symptoms and/or diagnosed with primary mood or anxiety disorders, but not with personality disorders. For practical reasons, only articles written in English or French were considered.

Multiple studies have addressed schema theory in mood and anxiety disorders. Some have examined EMSs or schema modes in association with the symptoms of depression or anxiety, whereas others have targeted specific diagnosed disorders. In many cases, mood or anxiety disorders were not the primary concern of the study. Some articles used these participants as control groups for the purposes of comparison with personality disorder samples, whereas others examined such symptoms of depression and anxiety as indicators of the validity of the YSQ. Nevertheless, the data reported do provide insight into the applicability of schema theory to this population. A small and emerging body of literature explores the impact of CBT on EMSs and the efficacy of ST as a treatment for mood and anxiety disorders.

## Symptoms of Depression and Anxiety

Several studies have associated EMSs or schema domains with the general symptoms of depression and anxiety across the psychiatric disorders or in nonclinical samples. The studies examining schema theory in mood and anxiety symptoms without a clinical diagnosis are summarized in Table 2.

Welburn, Coristine, Dagg, Pontefract, and Jordan (2002) explored the relationship between EMSs and psychiatric symptoms among day-treatment patients with a wide range of disorders and comorbidities. A full 75% of the sample had been diagnosed with a mood disorder, whereas 26% had an anxiety disorder. Results showed that EMSs explained 47% of the variance of depressive symptoms. Twelve of 15 assessed EMSs were significantly correlated with the symptoms of depression, but only the *Abandonment* and *Insufficient Self-Control* EMSs made a unique contribution to the prediction of depression. EMSs also accounted for 52% of the variance of anxiety symptoms, significant contributors being *Abandonment*, *Vulnerability to Harm or Illness*, *Failure*, *Self-Sacrifice*, and *Emotional Inhibition*. In all, 13 of the 15 assessed EMSs were significantly correlated with the symptoms of anxiety. Results were not presented by primary disorder or controlled for comorbidities. Nevertheless, these EMSs would appear to be associated with the symptoms of depression and anxiety across the range of psychological disorders.

In a mixed Axis I sample, Stopa et al. (2001) also assessed the correlation between EMSs and the symptoms of anxiety and depression. They found that 10 of 14 assessed EMSs were significantly correlated with the symptoms of depression, whereas 7 were correlated with the general symptoms of anxiety and 8 with phobic anxiety. Together, *Abandonment*, *Defectiveness/Shame*, *Subjugation*, and *Self-Sacrifice* explained 43% of the variance of depression. The *Defectiveness/Shame* EMS alone explained 21% of the variance of phobic anxiety symptoms, again pointing to the application of EMSs to the cross-diagnostic symptoms of anxiety and depression.

Another study in a mixed clinical sample assessed the construct validity of the EMSs by evaluating their ability to predict the symptoms of depression and anxiety in multiple regression analyses (Glaser, Campbell, Calhoun, Bates, & Petrocelli, 2002). *Abandonment* was found to significantly predict depressive symptoms as measured by three different self-report questionnaires.

**TABLE 2.  Summary of Studies on Early Maladaptive Schemas (EMSs) in the Symptoms of Depression and Anxiety**

| Study | N | Sample | EMSs Associated With Depression | EMSs Associated With Anxiety |
|---|---|---|---|---|
| Welburn et al. (2002) | 203 | Mixed clinical | *Abandonment* *Insufficient Self-Control* | *Abandonment* *Vulnerability to Harm or Illness* *Failure* *Self-Sacrifice* *Emotional Inhibition* |
| Stopa et al. (2001) | 69 | Mixed Axis I | *Abandonment* *Defectiveness/Shame* *Subjugation* *Self-Sacrifice* | *Defectiveness/Shame* |
| Glaser et al. (2002) | 141 | Mixed clinical | *Abandonment* *Social Isolation* | *Abandonment* *Vulnerability to Harm or Illness* |
| McGinn et al. (2005) | 55 | 60% depression 40% anxiety | All domains correlated | *Overvigilance* *Other-Directedness* *Impaired Autonomy/ Performance* |
| Harris & Curtin (2002) | 211 | Nonclinical | *Defectiveness/Shame* *Insufficient Self-Control* *Incompetence* *Vulnerability to Harm or Illness* | |
| Schmidt et al. (1995) | 181 | Nonclinical | *Dependency* *Defectiveness/Shame* | *Vulnerability to Harm or Illness* *Incompetence/Inferiority* *Emotional Inhibition* |
| Calvete et al. (2005) | 407 | Nonclinical | *Defectiveness/Shame* *Self-Sacrifice* *Failure* | *Abandonment* *Failure* *Subjugation* |
| Trip (2006) | 160 | Nonclinical | | *Unrelenting Standards/Hypercriticalness* *Punitiveness* |

One measure of depression was also predicted by *Social Isolation*. A measure of anxiety was significantly predicted by *Abandonment* and *Vulnerability to Harm or Illness*, although a second measure of anxiety was not significantly predicted by any EMS. All EMSs combined predicted up to 54% of the variance of depression and 50% of the variance of anxiety, consistent with the aforementioned studies.

McGinn, Cukor, and Sanderson (2005) examined the association between schema domains and the general symptoms of depression among psychiatric outpatients with depressive or anxiety disorders. Average symptom levels were in the moderate-to-severe range for depression and moderate for anxiety. Results showed that all five schema domains were positively correlated

with self-reported depression ($r$ between .47 for *Impaired Limits* and .74 for *Impaired Autonomy/ Performance*). Correlations were weaker for anxiety, at $r$ = .52 for *Overvigilance*, $r$ = .33 for *Other-Directedness*, and $r$ = .30 for *Impaired Autonomy/Performance*, the two remaining domains being nonsignificant. Results were not provided for individual EMSs or by primary diagnosis.

Because schema modes are the newest addition to the schema model, research results have only just begun to emerge in this area. Only a single study was identified presenting mode results in patients with mood or anxiety disorders. A sample of patients with Axis I disorders, including depression and anxiety, was compared with patients with Axis II disorders and nonpsychiatric controls (Lobbestael, van Vreeswijk, Spinhoven, Schouten, & Arntz, 2010). Results showed a linear trend for most modes, indicating that Axis I patients had significantly higher scores than nonclinical controls but lower scores than personality disorder patients. However, for the *Angry Child*, *Detached Self-Soother*, and *Happy Child* modes, and a trend toward significance for the *Impulsive Child* mode, quadratic trends showed that there was a large difference between non-clinical controls and Axis I participants, but little difference between Axes I and II patients. Axis I disorders were found to predict 10 of 14 modes above and beyond the prediction provided by Axis II disorders. As such, although Axis II disorders were most strongly associated with modes, Axis I disorders were much more strongly associated than nonpsychiatric controls.

Numerous studies have associated EMSs with the symptoms of anxiety in students or other nonclinical samples, often as components of a larger study. For example, Schmidt, Joiner, Young, and Telch (1995) found that the original *Dependency* and *Defectiveness/Shame* EMSs accounted for 33% of the variance of depression in a nonclinical sample, whereas *Vulnerability to Harm or Illness*, *Incompetence/Inferiority*, and *Emotional Inhibition* accounted for 34% of the variance of anxiety. Harris and Curtin (2002) reported that the *Defectiveness/Shame*, *Insufficient Self-Control*, *Incompetence*, and *Vulnerability to Harm or Illness* EMSs explained 63% of the variance of self-reported depressive symptoms. Calvete, Estévez, López de Arroyabe, and Ruiz (2005) found that depressive symptoms among undergraduate students were predicted by *Defectiveness/Shame*, *Self-Sacrifice*, and *Failure*, whereas anxiety was predicted by *Abandonment*, *Failure*, and *Subjugation*. Trip (2006) found that all 18 EMSs were associated with trait anxiety in a nonclinical sample, whereas only *Unrelenting Standards/Hypercriticalness* and *Punitiveness* were associated with state anxiety.

Looking at the mood–EMS relationship from a different angle, Stopa and Waters (2005) compared the effect of positive and negative mood induction on EMS scores. Of the 15 assessed EMSs, only *Defectiveness/Shame* was significantly higher after negative mood induction than after positive mood induction. In the opposite sense, only *Entitlement/Grandiosity* was significantly higher after positive mood induction compared with negative mood induction. Scores on the remaining 13 EMSs were not different depending on whether the participant was in a positive or negative mood state. These results suggest that the *Defectiveness/Shame* and *Entitlement/Grandiosity* EMSs may reflect mood symptoms to some degree, but supports the stability of most EMSs across mood states. This finding has important implications because it upholds the conceptualization of EMSs as stable character traits rather than the expression of mood symptoms—at least in a nonclinical sample.

## Mood Disorders

In addition to associating EMSs with the general symptoms of depression and anxiety in mixed clinical and nonclinical samples, some researchers have studied samples diagnosed with specific clinical disorders to examine the specificity of EMSs. Studies examining schema theory in patients diagnosed with a mood disorder are summarized in Table 3.

**TABLE 3.  SUMMARY OF STUDIES ON EARLY MALADAPTIVE SCHEMAS (EMSS) IN MOOD DISORDERS**

| Study | N (controls) | General Findings | Associated EMSs |
|---|---|---|---|
| Shah & Waller (2000) | 60 MDD (67 non-clinical) | Higher scores on all EMSs for MDD<br>3 EMSs to classify participants | *Defectiveness/Shame*<br>*Self-Sacrifice*<br>*Insufficient Self-Control* |
| Bailleux et al. (2008) | 15 MDD (18 alcohol dependent) (cited norms) | Higher scores on all except three EMSs for MDD | |
| Riso et al. (2003) | 42 CD (27 NCD) (24 nonclinical) | CD > NCD on 3 domains when controlling for depressive and personality disorder symptoms | *Impaired Autonomy*<br>*Overvigilance*<br>*Disconnection and Rejection* |
| Riso et al. (2006) | 55 MDD | EMSs stable at 2.5–5 years | |
| Halvorsen et al. (2009) | 23 MDE<br>40 PrD (40 ND) | MDE > ND on all EMS<br>MDE > PrD on 8 EMSs<br>MDE = PrD > ND on 5 EMSs | *Emotional Deprivation*<br>*Abandonment*<br>*Mistrust/Abuse*<br>*Defectiveness/Shame*<br>*Social Undesirability* |
| Wang et al. (2010) | 61 MDE<br>42 PrD (46 ND) | EMSs stable at 9 years | |
| Halvorsen et al. (2010) | 47 MDE<br>39 PrD (29 ND) | *Impaired Limits* domain predict depression at 9 years | |
| Nilsson et al. (2010) | 25 BP<br>31 BPD (29 non-clinical) | BPD > BP on 14 of 18 EMS<br>BP > controls on 1 EMS,<br>+ trend for 8 EMSs | *Insufficient Self-Control* |

*Note*. MDD = major depressive disorder; MDE = major depressive episode; CD = chronic depression; NCD = nonchronic depression; PrD = previously depressed; ND = never depressed; BP = bipolar disorder; BPD = borderline personality disorder.

## Major Depressive Disorder

One study examined EMSs in relation to parenting style in a sample of outpatients with major depressive disorder (MDD) compared with healthy controls (Shah & Waller, 2000). Depressed patients scored higher than controls on all EMSs, demonstrating the relevance of the schema model to MDD. Despite the global activation of all EMSs in a discriminant function analysis, only three EMSs were needed to classify participants into their respective groups. A model composed of *Defectiveness/Shame*, *Self-Sacrifice*, and *Insufficient Self-Control* correctly classified 88% of MDD participants and 90% of controls, adding specificity to the findings.

Riso et al. (2003) examined the schema domains in chronic depression, compared to patients with nonchronic MDD and healthy controls. The two depressed groups scored higher than controls on all schema domains, but the scores of those with chronic depression exceeded the scores of patients with nonchronic depression. The chronically depressed group had higher scores than those with nonchronic depression on the *Disconnection and Rejection*, *Impaired Autonomy*, and *Overvigilance* domains even when controlling for both depressive and personality disorder

symptoms. This suggests that chronic depression is associated more strongly with EMSs than the nonchronic form, and that this association is not simply a function of current depressive or Axis II symptoms.

Another study compared the EMS scores of depressed inpatients to nonclinical norms (Bailleux, Romo, Kindynis, Radtchenko, & Debray, 2008). Among the depressed sample, 13 were diagnosed with unipolar depression and 2 with bipolar depression. Mean depression severity scores fell within the moderate range. Results showed that depressed patients scored significantly higher than norms on 12 of 15 EMSs (exceptions: *Emotional Inhibition*, *Unrelenting Standards/Hypercriticalness*, and *Entitlement/Grandiosity*). Correlations were also found between certain EMSs and coping styles, however, a small sample size limits the interpretation of these findings.

Riso et al. (2006) examined the stability of the EMSs among patients with MDD in a 2.5- to 5-year longitudinal study. Although many participants had received psychotherapy during the interval between assessments, results showed that the schemas were stable among patients with MDD. This stability held up even when controlling for depressive symptoms at each time point. Depression-controlled stability coefficients ranged from a low of .46 for *Failure* to a high of .85 for *Unrelenting Standards/Hypercriticalness*, with a median stability of $r = .70$. As such, results supported the view of EMSs as stable character traits among people with depression, rather than as a reflection of their mood symptoms at the time of assessment.

A recent series of studies by one research team has examined various aspects of the EMSs in association with depression (Halvorsen, Wang, Eisemann, & Waterloo, 2010; Halvorsen et al., 2009; Wang, Halvorsen, Eisemann, & Waterloo, 2010). In the first set of analyses, depressed participants scored higher than nondepressed participants on most EMSs, but these scores exceeded those of previously depressed patients on only eight (*Social Isolation*, *Dependence/Incompetence*, *Vulnerability to Harm or Illness*, *Enmeshment*, *Failure*, *Emotional Inhibition*, *Entitlement/Grandiosity*, and *Insufficient Self-control*; Halvorsen et al., 2009). However, when controlling for current depressive symptoms, the scores of the three groups were significantly different on all EMSs. Currently depressed participants had the highest scores, followed by previously depressed participants, and then by controls. In the 9-year follow-up study, EMSs were found to be stable over the study period (Wang et al., 2010). Lastly, scores on the *Impaired Limits* domain at the beginning of the study made a unique contribution to the prediction of major depressive episodes 9 years later, at $sr^2 = .09$, a prediction nearly as large as that provided by prior depression ($sr^2 = .10$; Halvorsen et al., 2010). In all, this study supports the EMSs as character traits that remain stable over time and as markers of the cognitive vulnerability to depression, even in the absence of current symptoms.

## Bipolar Disorder

A single study has examined EMSs in bipolar spectrum disorders (Nilsson, Jørgensen, Straarup, & Licht, 2010). Participants with bipolar disorder were compared to those with borderline personality disorder and to student controls. As expected, borderline personality was associated with significantly higher scores on most EMSs. However, participants with bipolar disorder had significantly higher scores than did healthy controls on *Insufficient Self-Control*, as well as a trend toward higher scores on *Approval-Seeking/Recognition-Seeking*, *Entitlement/Grandiosity*, *Self-sacrifice*, *Subjugation*, *Enmeshment*, *Failure*, *Social Isolation*, *Mistrust/Abuse*, and *Abandonment*. Although this study does support the phenomenological difference between borderline and bipolar disorders as intended, the significant (and marginally significant) differences obtained between controls and bipolar participants in a small sample suggest that EMSs should be further explored in the bipolar spectrum.

# ANXIETY DISORDERS

Various studies have examined the EMSs associated with different anxiety disorders, including panic disorder with or without agoraphobia, social phobia, posttraumatic stress disorder (PTSD), and obsessive–compulsive disorder (OCD). These studies are summarized in Table 4. Delattre et al. (2004) compared EMSs in a mixed anxiety disorder sample with nonpsychiatric controls. The anxiety group significantly exceeded controls on all 13 assessed EMSs. Results were interpreted to suggest that the YSQ measures general trait anxiety because there were no individual EMSs emerging as specific to the anxiety disorders. However, the sample included participants with any of three anxiety disorders (panic disorder, social phobia, or generalized anxiety disorder), and results were not examined by disorder. Because variability may exist across the anxiety disorders, the conclusions that can be drawn from this study are limited. Nevertheless, a close look at the data shows that the three EMSs on which the anxiety group exceeded controls by the greatest margin were *Emotional Deprivation*, *Social Isolation*, and *Dependence/Incompetence*. EMSs in general, and these three EMSs in particular, would appear to discriminate between nonpsychiatric controls and anxiety disorder patients. However, the different anxiety disorders must be examined individually to determine whether different EMS profiles discriminate between patient groups.

## Panic Disorder With or Without Agoraphobia

Hedley, Hoffart, and Sexton (2001) examined two EMSs (*Vulnerability to Harm or Illness* and *Dependence/Incompetence*) in panic disorder with agoraphobia. Using a cross-lagged panel analysis, they demonstrated that *Vulnerability to Harm or Illness* predicted the fear of bodily sensations, the fear of losing control, and avoidance behaviors. *Dependence/Incompetence* did not predict any of these variables but was predicted by *Vulnerability to Harm or Illness*. Hence, *Vulnerability to Harm or Illness* appears to be a core EMS in agoraphobia, leading to the fears and behavioral characteristics of the disorder and to a resulting sense of dependence or incompetence in the face of these fears.

Another study examined agoraphobia, although specifically among female patients who also had eating disorders (Hinrichsen, Waller, & Emanuelli, 2004). Results showed that the *Vulnerability to Harm or Illness* EMS explained 48.5% of the variance in agoraphobia severity. Because there was no difference in EMSs by type of eating disorder, these results applied equally to all participant groups. These results replicate the findings of the previous study and suggest that agoraphobia is associated with the fear of impending catastrophe underlying the *Vulnerability to Harm or Illness* EMS, at least in a sample also affected by eating disorders.

## Social Phobia

Hinrichsen et al. (2004) also examined the association between EMSs and the symptoms of social phobia. Multiple regression analyses showed that *Abandonment* and *Emotional Inhibition* were associated with social phobia, explaining 25.9% of the variance. This suggests that social phobia can be understood as fears of losing significant others combined with the inhibition of emotions to avoid disapproval. However, because this study was conducted in an eating-disordered sample, further studies are necessary to establish the generalizability of these findings.

Pinto-Gouveia, Castilho, Galhardo, and Cunha (2006) compared patients with social phobia to a mixed group of anxiety disorder patients and nonpsychiatric controls. Socially anxious participants obtained higher scores than nonpsychiatric controls on all assessed EMSs except *Unrelenting Standards/Hypercriticalness* and higher than the mixed anxiety group on *Emotional Deprivation*, *Failure*, *Social Undesirability/Defectiveness*, *Mistrust/Abuse*, *Dependence*, *Social Isolation/Alienation*, *Subjugation*, and *Defectiveness/Shame*. In addition, regression analyses revealed

**TABLE 4.  SUMMARY OF STUDIES ON EARLY MALADAPTIVE SCHEMAS (EMSS) IN ANXIETY DISORDERS**

| Study | N (controls) | General Findings | Associated EMSs |
|---|---|---|---|
| **Mixed anxiety disorders** | | | |
| Delattre et al. (2004) | 50 ANX (50 nonclinical) | • ANX > nonclinical on all EMSs | *Emotional Deprivation* *Social Isolation* *Dependence/Incompetence* |
| **Panic disorder with or without agoraphobia** | | | |
| Hedley et al. (2001) | 59 | • *Vulnerability to Harm or Illness* predicts agoraphobic fears, cognitions, behaviors | *Vulnerability to Harm or Illness* |
| Hinrichsen (2004) | 70 | • *Vulnerability to Harm or Illness* explains 49% of the variance of agoraphobia | *Vulnerability to Harm or Illness* |
| **Social phobia (SP)** | | | |
| Hinrichsen (2004) | 70 | • *Abandonment* and *Emotional Inhibition* explain 26% of the variance of social phobia | *Abandonment* *Emotional Inhibition* |
| Pinto-Gouveia et al. (2006) | 62 (41 mixed ANX) (55 nonclinical) | • SP > nonclinical on all EMSs except 1<br>• SP > mixed ANX on 8 EMSs<br>• 4 EMSs predict fear of negative evaluation | *Defectiveness/Shame* *Mistrust/Abuse* *Emotional Deprivation* *Unrelenting* *Standard/Hypercriticalness* |
| **Posttraumatic stress disorder (PTSD)** | | | |
| Dutra et al. (2008) | 137 | • 10/12 EMSs correlated with PTSD symptoms<br>• All EMSs correlated with dissociation | *Emotional Inhibition* *Unrelenting* *Standard/Hypercriticalness* *Mistrust/Abuse* |
| Edworthy et al. (2008) | 108 | • *Impaired Limits* predict symptoms | *Impaired Limits* domain (*Entitlement/Grandiosity, Insufficient Self-Control/ Self-Discipline*) |
| Price (2007) | 77 | • 3 EMSs predict cognitive intrusions<br>• 1 EMS predicts cognitive avoidance | *Defectiveness/Shame, Dependence/ Incompetence* *Enmeshment* *Failure* |
| Cockram et al. (2010) | 163 veterans (57 veterans) | • PTSD > controls on all EMSs<br>• 2 EMSs classify participant groups | *Vulnerability to Harm or Illness* *Emotional Inhibition* |

Obsessive–compulsive disorder (OCD)

| | | | |
|---|---|---|---|
| Atalay et al. (2008) | 45 (45 nonclinical) | • OCD > controls on 11/18 EMSs<br>• *Dependence/ Incompetence* correlated with severity | *Social Isolation*<br>*Vulnerability to Harm or Illness*<br>*Negativity/Pessimism*<br>*Dependence/ Incompetence* |
| Lochner (2005) | 59 (26 TTM) | • OCD > TTM on 6/15 EMSs | *Social Isolation*<br>*Vulnerability to Harm or Illness*<br>*Mistrust/Abuse*<br>*Defectiveness/Shame*<br>*Subjugation*<br>*Emotional Inhibition* |

*Note.* ANX = anxiety; TTM = trichotillomania.

that the *Defectiveness/Shame*, *Mistrust/Abuse*, *Emotional Deprivation*, and *Unrelenting Standards/ Hypercriticalness* EMSs made a unique contribution to the prediction of the fear of negative evaluation. The EMSs emerging in this study as specific to social phobia would appear consistent with the disorder in question, converging on the notion of a socially defective self, perfectionistic self-standards, and a lack of the affection and support.

## Posttraumatic Stress Disorder

Because early life adversity increases the risk of developing PTSD in response to a traumatic event later in life (Brewin, Andrews, & Valentine, 2000), the role of EMSs in PTSD has also been examined in four studies. One study looked at EMSs and PTSD symptoms among survivors of trauma (Dutra, Callahan, Forman, Mendelsohn, & Herman, 2008). Results showed that all EMSs except two were significantly correlated with PTSD symptoms, the top three being $r = .42$ for both *Emotional Inhibition* and *Unrelenting Standards/Hypercriticalness* and $r = .40$ for *Mistrust/ Abuse*. All EMSs were correlated with dissociative symptoms. However, the traumatic experiences reported by participants included both early childhood trauma, considered causal to EMSs, and adult trauma. Because the study did not distinguish between the long-term effects of early trauma and the vulnerability to PTSD subsequent to adult trauma, the interpretation of these results is limited.

Another study looked at EMSs in the risk of developing posttraumatic stress symptoms subsequent to the pain of childbirth (Edworthy, Chasey, & Williams, 2008). A sample of pregnant women was assessed several weeks prior to their due dates and again 6 weeks after delivery. Multiple regression analysis revealed there was no relationship between childbirth-related PTSD symptoms and past trauma, past mental illness, or the type of delivery. However, the cognitive appraisal of the birthing experience did predict posttraumatic stress. Specifically, the *Impaired Limits* domain ($sr^2 = .05$) combined with a negative appraisal of the birthing experience explained 28% of the variance of PTSD symptoms are caused by childbirth. The *Impaired Limits* domain brings together the *Entitlement/Grandiosity* and *Insufficient Self-Control* EMSs. People with these schemas are considered to have little tolerance for frustration or pain, difficulties cooperating, and problems with long-term goals. It was concluded that the pain and need for cooperation

inherent to childbirth, combined with goals or expectations regarding personal performance during labor, would make the experience particularly challenging for women with elevated scores on the *Entitlement/Grandiosity* and *Insufficient Self-Control* EMSs.

Price (2007) assessed the EMSs in association with posttraumatic stress among people working in the helping professions. Participants were included in the study if they had experienced a work-related traumatic event severe enough to trigger PTSD symptoms. Regression analyses showed that cognitive intrusions regarding the traumatic event were predicted by *Defectiveness/Shame*, *Dependence/Incompetence*, and *Enmeshment* ($r^2 = .26$), whereas cognitive avoidance was predicted by *Failure* ($r^2 = .25$). The *Dependence*, *Enmeshment*, and *Failure* EMSs are all part of the *Impaired Autonomy and Performance* domain, implying that the individual felt unable to function independently. *Defectiveness/Shame* is part of the *Disconnection/Rejection* domain, but is highly associated with the feeling of inadequacy and failure. Together, these EMSs appear to be related to the development of posttraumatic stress in the wake of a traumatic event, at least among those in the helping professions.

A recent study examined EMSs in a sample of Vietnam War veterans with and without a past diagnosis of PTSD (Cockram, Drummond, & Lee, 2010). Veterans with a PTSD diagnosis had systematically and significantly higher scores on all EMSs than those without, reporting mean scores more than three times higher for a full 10 EMSs. *Vulnerability to Harm or Illness* and *Emotional Inhibition* were found to discriminate between the two participant groups. PTSD participants also reported more abuse, parental indifference, and parental overcontrol during childhood, supporting the developmental origins of EMSs as presented in individuals with PTSD symptoms triggered by trauma experienced during adulthood.

## Obsessive–Compulsive Disorder

Atalay, Atalay, Karahan, and Çakiskan (2008) compared EMSs among patients with OCD and healthy controls. OCD patients scored significantly higher than controls on 11 of 18 EMSs. The greatest differences were observed for *Social Isolation*, *Vulnerability to Harm or Illness*, and *Negativity/Pessimism*. The severity of OCD symptoms was significantly correlated only with the *Dependence/Incompetence* EMS, with none of the other EMSs even approaching statistical significance. Another study compared EMSs in OCD and in trichotillomania (TTM) (Lochner et al., 2005). OCD participants scored significantly higher than the TTM group on *Mistrust/Abuse*, *Social Isolation*, *Defectiveness/Shame*, *Subjugation*, and *Emotional Inhibition*, with a nonsignificant trend toward a higher score for *Vulnerability to Harm or Illness*. OCD patients reported more childhood trauma, disability, and comorbidity, but also better response to treatment. Unfortunately, because there was no healthy control group, it was not possible to identify EMSs elevated among both disorders.

## Early Maladaptive Schemas and Psychotherapy for Mood and Anxiety Disorders

Although several studies have examined the changes in EMSs over the course of psychotherapy, very few have examined the efficacy of ST in depression or anxiety disorders. The existing preliminary studies are summarized in Table 5.

Halford, Bernoth-Doolan, and Eadie (2002) assessed EMSs among a mixed sample of mood and anxiety disorder patients undergoing CBT. The intensive, short-term invention was comprised of 24–56 hours of group therapy over the course of 4–6 weeks, in addition to weekly or twice weekly individual sessions. Results showed reductions in schema domain scores, although

**TABLE 5.  SUMMARY OF TREATMENT STUDIES**

| Study | Design | N (controls) | Treatment | Disorder | Results |
|---|---|---|---|---|---|
| Halford et al. (2002) | Open trial | 134 | Intensive group + individual CBT | Mixed mood and anxiety disorders | Reduced domain scores with small effect size Reductions in domain scores predict symptom reduction |
| Rusinek et al. (2004) | Controlled trial | 36 (36) | CBT | PDA | No effect on EMSs |
| Borge et al. (2008) | RCT with active treatment controls | 40 (40) | Intensive residential CBT vs. IPT | Social phobia | No difference between CBT and IPT Global effect: reduction of YSQ total score |
| Cockram et al. (2010) | Controlled trial with retrospective control group | 54 ST (127 CBT) | Multimodal, including ST or CBT | PTSD (adult trauma) | ST > CBT for PTSD and anxiety ST ≥ CBT for depression (nonsignificant trend) |

*Note.* RCT = randomized controlled trial; ST = schema therapy; CBT = cognitive behavioral therapy; IPT = interpersonal therapy; PDA = panic disorder with or without agoraphobia; YSQ = Young Schema Questionnaire.

with small effect sizes. Greater reductions in schema domains predicted greater improvements in symptoms. This shows that an intensive, multiformat cognitive behavioral intervention would seem to produce small reductions in EMSs for at least some patients. Because these reductions are associated with favorable overall treatment outcome, this study points to the possible role of EMS work in maximizing symptom improvements.

Rusinek, Graziani, Servant, Hautekeete, and Deregnaucourt (2004) examined the effects of a 10-week CBT group (2 hours/week) for panic disorder with agoraphobia. EMS scores were compared with those of nonpsychiatric controls. Anxious participants had higher scores than controls on all EMSs both at pretest and posttest. However, treatment did not reduce scores on any EMSs, despite significant improvements in agoraphobic cognitions and reductions in the degree of impairment. This study suggests an association between EMSs and panic disorder with agoraphobia, but suggests that such EMSs are resistant to change.

Borge et al. (2008) compared the efficacy of intensive, 10-week residential interventions for severe social phobia. Participants were randomized to either cognitive therapy or interpersonal

therapy (group and individual therapy). Results indicated no differences between cognitive therapy and interpersonal therapy on any outcome measure, both treatments having positive impacts for participants. The intensive interventions reduced the total score on the YSQ from a mean of 2.70 at pretreatment to 2.44 posttreatment and 2.13 at 1-year follow-up. Because results are not provided for the individual EMS, it is impossible to determine whether the EMSs that declined over the course of treatment were those that would be expected in connection with the symptoms of social phobia.

Cockram et al. (2010) examined the effect of a combined individual and group therapy for patients with PTSD. The complete treatment consisted of approximately 190 hours of psychoeducation, modules for the management of alcohol and substance abuse and insomnia, and either complete ST or traditional CBT for PTSD. In the ST group, 17 of 18 EMSs were significantly reduced at posttreatment, the only exception being *Enmeshment*, for which the mean score was low at intake. The reduction of EMS scores was maintained at 3 months, whereas five EMSs continued to fall even lower in the follow-up period (*Self-Sacrifice*, *Unrelenting Standards/Hypercriticalness*, *Insufficient Self-Control*, *Approval-Seeking/Recognition-Seeking*, and *Punitiveness*). The degree of change in the EMSs of the *Impaired Autonomy* domain predicted change in PTSD symptoms, explaining 26.3% of the variance. Although both treatments were effective in reducing PTSD symptoms, a group × time interaction showed that patients receiving ST improved significantly more than the CBT sample on measures of PTSD and anxiety, with a nonsignificant trend toward the same effect for depressive symptoms.

## SUMMARY AND CONCLUSIONS

This article reviewed the literature applying Jeffrey Young's schema theory to mood and anxiety disorders. Studies have found that, as a whole, people with mood or anxiety disorders tend to have higher scores on most or all EMSs, whereas one study suggests that those with chronic depression score higher than those with nonchronic depression (Riso et al., 2003). In addition to this general effect, certain disorders or symptoms appear to be characterized by different primary EMSs. Research associating the schema modes with mood and anxiety disorders is extremely limited, with only a single published study (Lobbestael et al., 2010). Although this study was not specific to mood and anxiety disorders, it is an important starting point because it suggests that at least certain modes are nearly as present in Axis I as in Axis II disorders.

In terms of depression, evidence suggests that all EMSs are elevated, but that *Defectiveness/Shame* and *Insufficient Self-Control* are key EMSs specific to the symptoms of depression and to MDD (Calvete et al., 2005; Halvorsen et al., 2009; Halvorsen et al., 2010; Harris & Curtin, 2002; Schmidt et al., 1995; Shah & Waller, 2000; Stopa et al., 2001; Welburn et al., 2002). That these EMSs are associated with depression is not surprising given that items reflect overly negative views of the self (e.g., "I am inherently flawed and defective" and "When tasks become difficult, I usually cannot persevere and complete them").

Most EMSs are also elevated in anxiety disorders as a whole, although the core EMSs appear to vary somewhat across the anxiety disorders. The *Vulnerability to Harm or Illness* EMS might be considered a core EMS in anxiety because it is specific to general anxiety symptoms (Glaser et al., 2002; Schmidt et al., 1995; Welburn et al., 2002), as well as to panic disorder (Hedley et al., 2001; Hinrichsen et al., 2004), PTSD (Cockram et al., 2010), and OCD (Atalay et al., 2008; Lochner et al., 2005). Items assessing this EMS include "I can't seem to escape the feeling that something bad is about to happen." An additional key EMSs in anxiety—*Emotional Inhibition*—was identified in two studies on PTSD (Cockram et al., 2010; Dutra et al., 2008), whereas *Social Isolation* emerged in the two studies addressing OCD (Atalay et al., 2008; Lochner et al., 2005). Because of the limited number of studies, the variability of designs, uncontrolled comorbidities, and the

statistical limitations imposed by sample size and a large 18 EMS model, further specificity for individual disorders has not been clearly established.

Although the EMSs have been demonstrated to be elevated across the mood and anxiety disorders, various evidence also supports their existence as underlying character traits rather than simply a reflection of symptoms. This has been demonstrated in various ways. For example, the experimental manipulation of mood in a nonclinical sample has very little effect on EMSs (Stopa & Waters, 2005). In clinical samples, the history of depression is associated with higher EMSs even in the absence of current depressive symptoms (Halvorsen et al., 2009), whereas chronic depression is associated with higher EMS scores than nonchronic depression (Riso et al., 2003). In anxiety, even the successful treatment of panic disorder with agoraphobia using traditional CBT does not affect EMSs, despite symptomatic improvements (Rusinek et al., 2004). Furthermore, longitudinal studies have demonstrated the stability of EMSs over time, with follow-up periods as long as 9 years (Riso et al., 2006; Wang et al., 2010). In addition, the various results tend to hold true even when controlling for current symptoms (Halvorsen et al., 2009; Riso et al., 2003; Riso et al., 2006; Wang et al., 2010). These wide variety of results, combined with the specificity between certain EMSs and the characteristics of the associated disorders, supports the idea that EMSs are stable, underlying character traits that occur at a different level than moment-to-moment (or even year-to-year) fluctuations in mood and anxiety symptoms.

Although the specificity of certain EMSs to certain disorders is of theoretical interest, this specificity may not be the most critical finding in the available literature. It is important to consider that high YSQ scores are associated with continued schema activation and distress levels (Schmidt & Joiner, 2004), and that individuals with mood and anxiety disorders demonstrate consistently high scores. The stability of EMSs, combined with the established role of childhood adversity as a vulnerability factor for mood and anxiety disorders, clearly points to the relevance of schema theory to the mood and anxiety disorders, perhaps particularly so among chronic cases. Research on personality disorders has shown that ST can reduce EMSs and that the degree of EMS change predicts symptom relief (e.g., Giesen-Bloo et al., 2006; Nordahl et al., 2005). The next step, then, is to consider treating mood and anxiety disorders from a schema-focused approach with a view of reducing both current symptomatology and vulnerability to relapse.

Only a few studies have examined the effects of treatments on EMSs. Although CBT is an empirically supported treatment for most mood and anxiety disorders, one study showed that it did not lead to changes in EMSs in patients with panic disorder with agoraphobia (Rusinek et al., 2004). This is consistent, however, with additional studies suggesting that EMSs are resistant to change (e.g., Welburn, Dagg, Coristine, & Pontefract, 2000). Intensive psychotherapy has been shown to produce significant reductions in EMSs in social phobia (Borge et al., 2008), PTSD (Cockram et al., 2010), and in a mixed mood and anxiety disorder sample (Halford et al., 2002). The only study specifically comparing ST to traditional CBT found that both treatments were effective for PTSD, but that ST was more effective (Cockram et al., 2010). It is important to note that the participants in this study were veterans whose PTSD diagnoses were exclusively based on war-related traumatic experiences, not the other types of traumatic events that can trigger PTSD or EMSs. Based on these preliminary results, additional research examining the efficacy of ST for mood and anxiety disorder, as well as its relative efficacy to CBT, is warranted.

This review opens the door to a broad range of future research. The most obvious gap in the current literature is the examination of schema modes. Future research is needed to examine the schema modes in mood and anxiety disorders because these are a major target in ST (Young et al., 2003). In addition, the fit between schema theory and certain disorders has received very little attention to date. Specifically, bipolar disorder should be further examined, given that it is a chronic, long-term condition that has much in common with borderline personality disorder

(Benazzi, 2006), for which the efficacy of ST has been demonstrated (Giesen-Bloo et al., 2006). The severity and profile of EMSs and modes in generalized anxiety disorder should also be explored, given that no such studies have been conducted regarding this anxiety disorder. Additional research based on schema theory in the remaining disorders should also be conducted taking into account comorbidity because multiple comorbidities may mask the specificity of EMSs to each clinical condition. Lastly, because schema theory and ST were developed to explain cases resistant to traditional CBT, treatment resistance should also be examined as a variable in future research. By distinguishing between treatment-resistant cases and those cases that respond well to other treatments, it will be possible to identify the patients who would most benefit from this form of therapy.

In summary, consistent with schema theory, the literature to date suggests that people with mood and anxiety disorders show high levels of EMSs, some of which appear to reflect characteristics of the specific disorders. Thus, despite how it is often considered, schema theory is not exclusively the domain of personality disorders; it can be extended to understanding mood and anxiety disorders. Preliminary work also suggests that ST could perhaps be extended for use with mood and anxiety disorders, although further research is necessary to strengthen this assertion and identify individuals who stand to benefit the most.

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