

Psychosocial Interventions for Bipolar Disorder: Perspective From the Behavioral Approach System (BAS) Dysregulation Theory

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Research has emerged providing consistent support for the behavioral approach system (BAS) dysregulation theory of bipolar disorder. The objective of the current article was to examine the extent to which findings from the BAS dysregulation theory can inform psychosocial interventions for bipolar disorder. Toward this end, we first provide an overview of the BAS dysregulation theory. Second, we review extant research on psychosocial interventions for bipolar disorder. And, third, we discuss means by which research and theory in line with the BAS dysregulation model can inform psychosocial interventions for bipolar disorder. Particular attention is given to the clinical implications of research, suggesting that bipolar disorder is characterized by high drive/incentive motivation, ambitious goal-setting, and perfectionism in the achievement domain.

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Approximately 4.4% of the U.S. population experiences a bipolar spectrum disorder (Merikangas et al., 2007).

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The consequences of this disorder are striking, often creating significant impairment such as erratic work history, alcohol abuse, and poor academic achievement (Goodwin & Jamison, 1990; Lagace, Kutcher, & Robertson, 2003; Nusslock, Alloy, Abramson, Harmon-Jones, & Hogan, 2008). Indeed, the World Health Organization (WHO) has consistently ranked bipolar disorder as one of the top 10 leading causes of disability worldwide among adults (Ayuso-Mateos, 2006; Murray & Lopez, 1996).

The quality of outpatient treatment for bipolar disorder advanced considerably with the introduction of lithium carbonate in the 1960s and the anticonvulsants in the 1980s. Whereas patients with bipolar disorder tended to follow deteriorating courses in the prepharmacological era (Cutler & Post, 1982), lithium- or anticonvulsant-treated patients often remain out of the hospital for extended periods (Goodwin & Jamison, 1990; Patel et al., 2006). Nonetheless, there is increasing recognition that pharmacotherapy alone forestalls but does not prevent relapses of bipolar episodes (Miklowitz et al., 2000). Despite the use of mood-stabilizing agents, data suggest relapse rates as high as 40% in one year, 60% in two years, and 73% in five or more years (Gitlin, Swendsen, Heller, & Hammen, 1995). Moreover, the efficacy of medications is limited by the fact that poor medication compliance occurs in 50–67% of individuals

with bipolar disorder within the first year of treatment (Keck et al., 1998).

Recognizing the limitations of pharmacotherapy alone, a 1996 report by the National Institute of Mental Health (Prien & Rush, 1996) recommended developing adjunctive psychosocial interventions as a central focus for research into bipolar disorder. The importance of psychosocial interventions is also highlighted by the fact that environmental variables play an important role in determining whether an individual at risk develops bipolar disorder, and the timing, frequency, and polarity (depressive versus hypomanic/manic) of his or her bipolar episodes (Elicott, Hammen, Gitlin, Brown, & Jamison, 1990; Nusslock, Abramson, Harmon-Jones, Alloy, & Hogan, 2007). Over the past decade, researchers have begun to answer this call, and currently there are three psychosocial interventions for bipolar disorder that have shown promise as adjuncts to pharmacotherapy—Cognitive-Behavioral Therapy (CBT), Psychoeducational Interventions, and Interpersonal and Social Rhythm Therapy (IPSRT). Growing evidence highlights the efficacy of these interventions, as indicated in a recent meta-analysis (Scott, Colom, & Vieta, 2007) that reported a significant reduction in relapse rates (~40%) for individuals with bipolar disorder engaged in psychosocial treatment. Moreover, findings from the multisite Systematic Treatment Enhancement Program for Bipolar Disorder (STEP-BD) indicate that each of the three existing psychosocial interventions for bipolar disorder enhances life functioning (Miklowitz et al., 2007a) and hastens recovery from a bipolar depressive episode (Miklowitz et al., 2007b).

All three of the psychosocial interventions for bipolar disorder were developed by researchers and clinicians translating basic science on bipolar disorder into the clinical arena. For example, CBT has been applied to bipolar disorder given research suggesting that the logic of cognitive vulnerability-stress theories of unipolar depression (Abramson, Metalsky, & Alloy, 1989; Beck, 1967) extends to understanding bipolar episodes and symptoms (Alloy, Reilly-Harrington, Fresco, Whitehouse, & Zechmeister, 1999; Reilly-Harrington, Alloy, Fresco, & Whitehouse, 1999). Psychoeducational interventions developed from findings that life events such as levels of familial expressed emotion (EE; i.e., criticism, hostility, and/or emotional overinvolve-

ment; Miklowitz, Goldstein, Nuechterlein, Snyder, & Mintz, 1988), low parental warmth (Geller et al., 2002), and social support (Johnson, Winett, Meyer, Greenhouse, & Miller, 1999) predict the course of bipolar disorder. IPSRT is grounded in the circadian rhythm and Zeitgeber Theory of bipolar disorder (Ehlers, Frank, & Kupfer, 1988; Malkoff-Schwartz et al., 1998).

Over the past few decades, exciting work has emerged providing support for another model of bipolar disorder—the behavioral approach system (BAS) dysregulation theory. This theory proposes that weak regulation of the BAS, a system involved in approach to reward, might be involved in hypomanic/manic highs and depressive lows that characterize bipolar spectrum disorders (Depue & Iacono, 1989; Depue, Krauss, & Spont, 1987; Urosevic, Abramson, Harmon-Jones, & Alloy, 2008). The BAS dysregulation theory is compelling insofar as it proposes specific psychosocial factors relevant to understanding the etiology and course of bipolar disorder, as well as provides a unified model of both poles of the disorder—depression and hypomania/mania. Recently, Lam et al. (2003) have begun to incorporate findings in line with the BAS dysregulation theory into their treatment protocols. The objective of the current article was to bring attention to this important development and to examine the extent to which the BAS dysregulation theory can inform the treatment of bipolar disorder. The article is organized as follows: First, we provide an overview of the BAS dysregulation theory. Second, we review theory and research on the three psychosocial interventions for bipolar disorder and discuss how findings from the BAS dysregulation theory can help inform these interventions.

BEHAVIORAL APPROACH SYSTEM DYSREGULATION THEORY

Researchers suggest that two psychobiological systems are critical in regulating behavior (Gray, 1981). One of these systems, the BAS, is hypothesized to regulate approach behavior to attain rewards and goals, whereas the other, the behavioral inhibition system (BIS), regulates inhibition of behavior in response to threat and punishment. We focus on the BAS because theory and research underscore its importance in bipolar disorder. The BAS is activated by signals of reward as well as punishment avoidance cues (Fowles, 1988). These

signals can be either external (e.g., presence of a goal/reward) or internal (expectancies of goal attainment). The objective of the BAS is to regulate appetitive motivation and goal-directed behavior in order to obtain rewards and/or avoid punishment. The BAS has been implicated in the generation of positive emotions (Depue & Iacono, 1989; Gray, 1994), and, in particular, goal-striving-related positive affect and drive/incentive motivation (Fowles, 1988). Activation of the BAS causes the person to increase cognitive activity aimed at promoting goal attainment (e.g., hope, self-efficacy, planning; Depue & Iacono, 1989). Also, certain negative emotions sometimes accompany approach behavior, as research has revealed that anger is associated with heightened BAS activity (for a review, see Harmon-Jones, 2004). Finally, research has implicated dopaminergic projections of the Ventral Tegmental Area (Depue & Iacono, 1989), as well as relative left frontal cerebral activity (Harmon-Jones & Allen, 1997; Sutton & Davidson, 1997), as neurobiological processes important in BAS function.¹

The BAS dysregulation theory (Depue & Iacono, 1989; Depue et al., 1987; Urosevic et al., 2008) proposes that weak regulation of the BAS is involved in the roller coaster of hypomanic/manic highs and depressive lows that characterize bipolar spectrum disorders. Individuals with bipolar disorder experience excessive variability in BAS activity (e.g., extreme fluctuations in approach motivation). Consistent with theory, research demonstrates that (a) individuals with a bipolar spectrum disorder experience excessive within-day, and between-day, variability on a variety of indices of BAS (Depue et al., 1981); (b) this variability is a temperamental quality of bipolar disorder (i.e., state-independent; Depue & Iacono, 1989; Depue et al., 1987), and (c) this variability predicts relapse over time (Depue et al., 1981). A source of this variability, according to the theory, is that individuals with bipolar disorder have an overly sensitive BAS that is hyperresponsive to BAS-relevant cues. This BAS hyperresponsivity can lead to excessive BAS activity in response to events involving themes of goal striving and attainment, reward incentive, and anger evocation. This excessive increase in BAS activity in vulnerable individuals is hypothesized to be reflected in hypomanic/manic symptoms such as euphoria, excessive

goal-seeking behavior, decreased need for sleep, irritability, excessive self-confidence, etc. (Depue & Iacono, 1989; Depue et al., 1987). In contrast, depressive symptoms such as sadness, low energy, anhedonia, psychomotor retardation, and hopelessness reflect a shutdown or an excessive decrease in BAS activity in response to BAS deactivation-relevant events such as definite failure and nonattainment of a desired goal (Depue et al., 1987).

The empirical testing of the BAS dysregulation theory has been aided by the development of a self-report measure of BAS sensitivity by Carver and White (1994), the BAS scale of the BIS/BAS scales. The BAS subscales tap individual differences in BAS sensitivity (i.e., BAS responsiveness to relevant stimuli). Compared to relevant control groups, individuals with bipolar I disorder (Meyer, Johnson, & Winters, 2001) and people prone to hypomanic symptoms (Meyer, Johnson, & Carver, 1999) show elevated BAS scores. In a bipolar I sample, high BAS sensitivity at recovery predicted an increase in manic symptoms over six months (Meyer et al., 2001). In addition, high BAS sensitivity prospectively predicted a greater likelihood and shorter time to onset of bipolar episodes over a 3.5-year follow-up period among individuals with a bipolar II and/or cyclothymia diagnosis (Alloy et al., 2008). Research also has demonstrated that individuals with a bipolar spectrum disorder show elevated responses on psychophysiological indices of BAS sensitivity (Harmon-Jones et al., 2002; Harmon-Jones et al., 2008). We now review psychosocial interventions for bipolar disorder and examine the extent to which the BAS dysregulation model can inform these interventions.

COGNITIVE-BEHAVIORAL THERAPY FOR BIPOLAR DISORDER

Cognitive-Behavioral Therapy emerged from highly successful cognitive models of unipolar depression. These models hypothesize that maladaptive cognitive patterns (negative styles for inferring causes, consequences, and self-worth implications in hopelessness theory [Abramson et al., 1989] and negative self-schemata and dysfunctional attitudes in Beck's [1967] theory) act as vulnerabilities for depression when individuals experience stressful life events. These maladaptive cognitive styles increase the likelihood of

negative appraisals of negative life events, thereby leading to hopelessness and negative views of one's self and personal world, and ultimately, depressive symptoms. Cognitive theories of depression have garnered considerable empirical support from cross-sectional studies, prospective studies, and behavioral high-risk studies (for a review, see Abramson et al., 2002).

Cognitive-Behavioral Therapy for unipolar depression identifies, challenges, and ultimately aims to modify cognitive styles to generate a less depressogenic information-processing scheme (Hollon, 2006). CBT is effective for treating unipolar depression (for a review, see Deckersbach, Gershuny, & Otto, 2000), with research indicating that this efficacy extends to severe and treatment-resistant cases (Fava, Grandi, Zielesny, Rafanelli, & Canestrari, 1996). CBT also appears to protect against relapse in patients with unipolar depression and CBT offers relapse protection in the same range as maintenance pharmacotherapy (Evans et al., 1992).

Over the past two decades, growing evidence indicates that the cognitive processes involved in unipolar depression also play a role in the bipolar spectrum disorders. Recent reviews of research into cognition in bipolar disorder (see Alloy et al., 2006 for a review; Alloy, Abramson, Urosevic et al., 2009) concluded that individuals with bipolar spectrum disorders exhibit underlying cognitive patterns as negative as those of unipolar depressed persons overall, but with certain unique characteristics (see below). In addition, there is growing evidence that cognitive styles also predict the course of bipolar disorder, alone or in combination with relevant life events. For example, Scott and Pope (2003) reported that cognitive profiles were the most robust predictor of relapse at 12-month follow-up in patients with hypomania. Moreover, Francis-Raniere, Alloy, and Abramson (2006) found that cognitive styles interacted with congruent negative events to predict increases in depressive symptoms and with congruent positive events to predict increases in hypomanic symptoms over follow-up. Accordingly, CBT is beginning to be applied to bipolar spectrum disorders as an adjunctive treatment to pharmacotherapy.

Although there is variability in how CBT is implemented for bipolar disorder, most protocols address at least the three following themes: medication adherence,

biased or dysfunctional thinking, and psychosocial difficulties (Basco & Rush, 1996; Fava, Bartolucci, Rafanelli, & Mangelli, 2001; Otto, Reilly-Harrington, & Sachs, 2003). Regarding medication adherence, clients are informed of the importance of strict treatment adherence and educated on pharmacology, toxicity, side effects, and the positive effects that mood stabilizers can have on the course of bipolar disorder. Clients are provided behavioral strategies to help increase adherence, and receive psychoeducation on the nature of bipolar disorder and its corresponding symptoms. Regarding biased or dysfunctional thinking, clients are first introduced to the concept that negative thinking can influence the interpretation of events and subsequent emotions. Clients are encouraged to monitor their thoughts, provide evidence for and against negative cognitions, and replace maladaptive interpretations of events with more adaptive explanations. The challenge for both the clinician and client, however, is that they not only need to address the client's depressogenic cognitions but also cognitions associated with hypomanic and/or manic episodes. Clients are educated in identifying increased self-esteem and *positively biased* cognitions as indicators of possible hypomania/mania. By challenging and keeping these cognitions *in check*, the client, ideally, can manage or preempt a bipolar episode. Lastly, CBT therapists typically address psychosocial difficulties associated with bipolar disorder. The therapist helps the client identify strengths that facilitate psychosocial adjustment and weaknesses that may interfere with functioning. Clients are then taught specific problem-solving and behavioral skills to help manage these psychosocial stressors.

The small number of studies conducted to date provide reasonably consistent evidence that CBT has a positive prophylactic effect on bipolar disorder and preliminary evidence that it is also effective in managing acute episodes of bipolar depression. Two uncontrolled studies (Fava et al., 2001; Patelis-Siotis et al., 2001) found that CBT reduced depressive and manic episode relapse rates over a 30-month follow-up compared with the 30 months prior to beginning CBT, and improved psychosocial functioning. Fava et al. (2001) further reported that CBT was associated with a significant reduction in subsyndromal symptoms during remission, which is of import given that subsyndromal

symptoms increase risk of relapse (Benazzi, 2001). Four randomized controlled trials of CBT for individuals with bipolar disorder receiving maintenance medication provide further evidence of the prophylactic effects of CBT. In a study involving individuals with both bipolar I and bipolar II, Scott, Garland, and Moorhead (2001) reported that compared to a wait list control, their CBT group exhibited 60% fewer relapses and fewer hospitalizations during an 18-month follow-up, significant improvements in global functioning and some symptoms (particularly depressive symptoms), and greater medication adherence. Cochran (1984) also found that their CBT plus lithium group showed greater medication compliance than a lithium-only group, as well as fewer hospitalizations and mood episodes. Lam et al. (2000) reported that compared to a treatment as usual control group, a CBT group had significantly fewer bipolar episodes and hospitalizations throughout a 12-month follow-up and lower depressive and manic symptoms. In a follow-up, Lam et al. (2003) found that the CBT group had significantly fewer bipolar episodes and hospitalizations relative to a treatment as usual control group. The proportion of patients in the control group who relapsed during follow-up was 75% compared with 44% in the CBT group. Additionally, the CBT group had fewer days in episode, fewer residual depressive symptoms, and less manic symptom fluctuation during the 12-month follow-up. One study (Zaretsky, Segal, & Gemar, 1999) examined the efficacy of CBT for managing an acute episode of depression in individuals with bipolar I and bipolar II to standard CBT for unipolar depression. The authors reported that the two forms of CBT were equally effective. Additional support for the efficacy of CBT in managing acute bipolar depression comes from the STEP-BD study by Miklowitz et al. (2007b) mentioned earlier, in which all three of the psychosocial interventions (CBT, Family-Focused Treatment [FFT], and IPSRT) for bipolar disorder hastened the recovery from a depressive episode. Lastly, work by Scott et al. (2006) suggests that severity of course may moderate clients' responsiveness to CBT. The authors report that CBT was more effective than treatment as usual in those with fewer than 12 previous episodes, but less effective in those with more episodes.

CBT FOR BIPOLAR DISORDER: PERSPECTIVE FROM THE BAS DYSREGULATION THEORY

Cognitive-Behavioral Therapy was developed from cognitive models of unipolar depression and was subsequently applied to bipolar disorder. Research indicates, however, that although negative cognitive styles characterize unipolar depression and bipolar disorder alike (Alloy et al., 2005; Johnson & Kizer, 2002), individuals with bipolar disorder exhibit cognitive profiles with unique characteristics that are in line with the high drive/incentive motivation associated with high BAS sensitivity (Alloy et al., 2005, 2006; Urosevic et al., 2008). This is in contrast to the dependency and attachment attitudes typically observed among unipolar depressed individuals (for alternative findings, see Hammen, Ellicott, & Gitlin, 1992). This section examines the implications of research on the cognitive profiles of individuals with bipolar disorder in line with the BAS dysregulation theory for CBT for bipolar disorder. As outlined above, CBT for bipolar disorder typically addresses medication adherence, biased or dysfunctional thinking, and psychosocial difficulties. We argue that research in line with the BAS dysregulation theory may be particularly helpful in informing the biased or dysfunctional thinking component of CBT for bipolar disorder. Specifically, clinicians and scientists informed by research suggesting that cognitive profiles of individuals with bipolar disorder are in line with high drive/incentive motivation may be able to more effectively identify and address the cognitive distortions of their clients.

In traditional CBT for unipolar depression and bipolar disorder, there are two levels of cognitions that a CBT therapist typically addresses with a client (Basco & Rush, 1996; Greenberger & Padesky, 1995; Lam, Jones, Hayward, & Bright, 1999). The first level is state-dependent "automatic thoughts" that typically occur prior to or during a mood disorder episode. The clinician then addresses the underlying state-independent worldview, schema, or assumptions that an individual has about reality.

In addressing state-dependent automatic thoughts, there is growing consensus that CBT therapists should target the cognitive prodromes of bipolar episodes as opposed to automatic thoughts experienced during full-blown episodes (Lam et al., 2003). In medicine,

prodromes are defined as the early signs and symptoms that herald a full episode (Molnar, Feeney, & Fava, 1988). Research indicates that individuals with bipolar disorder, as well as their relatives, are able to report prodromes reliably (Keitner et al., 1996; Lam, Wong, & Sham, 2001). Two advantages in targeting prodromes in the treatment of bipolar disorder are (a) full-blown bipolar episodes may overwhelm the coping strategies of patients, where these strategies may be highly effective in managing prodromes of bipolar episodes; and (b) the prodromal period precedes the full bipolar syndrome (Smith & Tarrrier, 1992), representing a window in which intervention might protect patients from relapse. In line with this view, good coping skills during prodromal periods have been associated with higher social functioning (Lam & Wong, 1997), which predicts longer intervals between episodes (Gitlin et al., 1995).

Growing evidence suggests that the cognitive prodromes of manic episodes are characterized by extreme goal-setting and heightened expectations of success in the achievement domain. This is consistent with the BAS's involvement in regulating appetitive motivation and goal-directed activity (Gray, 1981, 1994). Meyer, Beevers, and Johnson (2004) noted that current symptoms of hypomania/mania positively correlated with higher expectations of attaining upcoming goals. The relationship between hypomanic/manic symptoms and success expectancies is most pronounced following a proposed BAS activation relevant event (i.e., goal attainment; Johnson, Ruggero, & Carver, 2005). Individuals with bipolar disorder seem to overinterpret this initial success and become unrealistically confident about achieving the next goal (Johnson et al., 2005). They may express beliefs such as *there is nothing that I cannot do, I have to obtain the goal, I am invincible*. This unrealistic confidence may fuel excessive goal-striving behaviors and even higher goal-setting (Johnson, 2005). Indeed, increased goal-directed activity is one of the two most common behavioral prodromes of mania and has been independently associated with increased rates of manic episodes (Lam et al., 2001). In line with this research, certain clinicians have begun to take a BAS dysregulation perspective and are giving particular attention to the importance of helping patients understand the relationship between ambitious goal-setting

and the onset of manic episodes (Lam et al., 2003). These clinicians argue that the therapist and patient can develop a treatment plan in which surges of ambitious goal-setting and confidence are identified and challenged during the prodromal period. An important cognitive strategy for dealing with prodromal mania is reframing the ambitious goal-setting and surge of confidence as early symptoms of mania as opposed to thoughts to be considered in their own right (Lam et al., 1999). This allows the client to more objectively identify what is a manic prodrome versus simply a good mood. Lam and Wong (1997) report that the optimal coping strategies for prodromes of mania involve behavioral deactivation strategies, including *modifying high activities, restraining oneself, and engaging in calming activities*. Accordingly, an extreme surge in ambition (i.e., BAS hyper-activation) should serve as a cue to the individual with bipolar disorder to reduce goal-striving behavior and normalize social and sleep routines. We argue that CBT as a whole for bipolar disorder would benefit from the perspective taken by Lam and colleagues of giving particularly close attention to ambitious goal-setting and increased goal-directed activity during the prodromal period.

Where manic prodromes of extreme confidence and ambitious goal-setting typically occur following success in the achievement domain (Johnson, 2005), depressive prodromes of low self-esteem and decreased goal-setting typically occur in response to failure in the achievement domain (Lam et al., 2000). According to the expanded BAS dysregulation theory of Urosevic et al. (2008), low efficacy expectancy resulting from failure in the achievement domain leads to BAS deactivation. This BAS deactivation is characterized by decreased goal-setting and expectancy of success, followed by reduced motivation and goal-oriented behaviors. As noted by an individual with bipolar disorder, "I know that I am becoming depressed when I think there is no point in pursuing goals." Accordingly, a CBT therapist taking a BAS dysregulation perspective should be particularly primed to target cognitive-behavioral prodromes of depression in the achievement domain. Once a client's prodromes have been identified, the clinician can assist the client in monitoring and modifying cognitive prodromes of depression to reduce the risk of relapse. Lam and Wong (1997)

report that the coping strategy most often employed among individuals with bipolar disorder in the *Good Coping Group* involved *getting myself organized and keeping busy* (i.e., increased BAS activity). Accordingly, behavioral activation strategies such as exercise, goal striving, and pleasurable activities can be employed in order to target the BAS deactivation often associated with bipolar depression (Depue & Iacono, 1989; Depue et al., 1987).

Once the clinician and client have addressed state-dependent automatic thoughts—which we argue are best addressed during the prodromal period (i.e., cognitive prodromes)—the next step in traditional CBT is to address the underlying assumptions or cognitive style that the bipolar patient has about his or her self and world (Basco & Rush, 1996; Lam et al., 1999, 2003). These assumptions are state-independent cognitions from which automatic thoughts arise in response to relevant life events (Lam et al., 1999). Assumptions can be considered rules for living or conditional statements that incorporate an *if...then* component (e.g., *if I am not the best, I am nothing*). Once identified, strategies that have been outlined to address dysfunctional assumptions among individuals with bipolar disorder include, but are not limited to, the use of thought records, collaborative empiricism, and behavioral experiments (Basco & Rush, 1996; Lam et al., 1999, 2003; Otto, Reilly-Harrington, Kogan, Henin, & Knauz, 1999).

In line with the BAS dysregulation theory's focus on high drive/incentive motivation, as well as the research just outlined on state-dependent cognitions in manic and depressive episodes, the cognitive style of individuals with bipolar disorder is marked by ambitious goal-setting, autonomy, and perfectionism in the achievement domain (Johnson, 2005; Lam, Wright, & Smith, 2004). Clinical observations report high goal-setting, drive, and work motivation among individuals with a history of mania that are *inappropriately high* (Peven & Shulman, 1983, p. 13). Researchers have also found that a history of bipolar disorder is associated with stronger emphasis on goal pursuit and goal attainment. For example, two studies found that individuals with a history of mania are more likely to endorse items reflecting perfectionism and the need to achieve goals on the Dysfunctional Attitudes Scale relative to

individuals with no mood disorder (Lam et al., 2004; Scott, Stanton, Garland, & Ferrier, 2000). Alloy, Abramson, Walshaw, et al. (2009) found that euthymic bipolar spectrum participants scored higher on BAS-relevant cognitive dimensions of perfectionism, autonomy, and self-criticism than did normal controls, but not on non-BAS-relevant dimensions of sociotropy, dependency, or approval from others. Moreover, in this study, only BAS-relevant cognitive dimensions predicted the likelihood of onset of depressive and hypomanic/manic episodes among individuals with bipolar disorder over a 3.2-year follow-up. Further, a study by Spielberger, Parker, and Becker (1963) reported that 93% of individuals with a history of bipolar disorder endorsed the item *I nearly always strive hard for personal achievement*. Ambitious goal-setting and perfectionism in the achievement domain among individuals with bipolar disorder appear to be a state-independent feature of the disorder given that (a) studies of goal-oriented cognitive styles in bipolar disorder have been conducted when individuals are in a remitted/euthymic state (Lam et al., 2004; Scott et al., 2000), (b) the effect holds even after controlling for baseline mood state (Alloy et al., 2008; Johnson et al., 2005), and (c) current symptoms of bipolar disorder do not correlate with ambitious goal-setting (Lozano & Johnson, 2001). Researchers have extended these findings to individuals with subsyndromal bipolar disorder (Johnson & Carver, 2006) and nonaffected family members of individuals with bipolar disorder (for a review, see Johnson, 2005). These findings suggest that ambitious goal-setting and perfectionism in the achievement domain may index a temperamental/cognitive vulnerability to bipolar disorder. In line with this view, high scores on the Neuroticism-Extraversion-Openness inventory achievement-striving scale predicted increases in bipolar symptoms over six months (Lozano & Johnson, 2001).

What is the incremental value of a BAS dysregulation perspective in the application of CBT to bipolar disorder? We argue that research indicating that ambitious goal-setting and perfectionism in the achievement domain characterize the cognitive style of bipolar disorder suggests that CBT therapists may benefit from being particularly sensitive to cognitive distortions in the achievement domain of their clients with bipolar

disorder. To date, however, only one of the six studies outlined above on the efficacy of CBT for bipolar disorder systematically targeted goal-oriented cognitions. In this study, Lam et al. (2003) randomly assigned 103 individuals with bipolar disorder to CBT or medication management. In the CBT group, the therapists specifically targeted extreme striving attitudes. As reported above, the authors found evidence that CBT was protective for both bipolar depression and mania, with the CBT group experiencing significantly fewer episodes and hospitalizations relative to the control group. Importantly, highly driven and extreme goal attainment beliefs were identified as vulnerability factors, and at six-month follow-up, the CBT group scored significantly lower than a comparison control group regarding such goal-striving attitudes.

In summary, the BAS dysregulation theory proposes high drive/incentive motivation and high BAS sensitivity characterize bipolar disorder (Depue & Iacono, 1989; Fowles, 1988). Consistent with theory, growing evidence suggests that the cognitive profiles of bipolar disorder are characterized by extreme goal-striving tendencies and perfectionism in the achievement domain, rather than the sociotropic, dependent features often exhibited by unipolar individuals. Accordingly, we propose that an important contribution of the BAS dysregulation theory to CBT for bipolar disorder is highlighting the potential value of targeting achievement-oriented cognitive profiles in managing both the depressive and manic phases of bipolar disorder. Preliminary research supports this proposal (Lam et al., 2003). Further work, however, is needed to test the nuances of this issue. Although research indicates that bipolar spectrum individuals have higher mean levels on BAS-relevant cognitive dimensions (perfectionism, autonomy, self-criticism), there are likely notable individual differences in such cognitive profiles. It will be important for researchers and clinicians to examine these individual differences and adjust their treatment plan accordingly.

PSYCHOEDUCATIONAL INTERVENTIONS

A second prominent psychosocial intervention for bipolar disorder is psychoeducation. Models of psychoeducation for bipolar disorder have been informed by the literature on psychoeducational treatments for schizophrenia (Miklowitz & Goldstein, 1997). Early

research demonstrated that family-based psychoeducation reduced relapse rates and improved psychosocial functioning in individuals with schizophrenia over a two-year period (Falloon et al., 1985; Hogarty et al., 1986). Given the fact that bipolar disorder shares many of the clinical characteristics of schizophrenia (e.g., relapse–remission course, need for maintenance medication), clinicians and researchers began examining psychoeducation as a treatment for bipolar disorder.

Central to psychoeducational models for bipolar disorder is research indicating that environmental variables influence the timing, frequency, and polarity (depressive versus hypomanic/manic) of bipolar episodes (for a review, see Craighead & Miklowitz, 2000). Environmental variables in bipolar disorder have been examined in two domains: life events and family/marital discord. Regarding the former domain, research indicates that individuals with bipolar disorder experience an elevated rate of life events in the period preceding the onset of an episode relative to other periods in their life (Alloy et al., 2005; Ambelas, 1979, 1987; Johnson & Roberts, 1995). For example, a prospective study that followed bipolar individuals across a two-year period found that individuals who received the highest total life event scores had 4.53 times the risk of relapse compared with individuals who did not experience such events (Elicott et al., 1990). Moreover, Perris (1984) found that a greater number of negative events preceded the onset of bipolar depression than the onset of unipolar depression.

The second domain—family discord as a trigger for recurrences—has focused on EE attitudes among caregiving relatives. EE reflects the extent to which relatives of patients express critical, hostile, or emotionally overinvolved attitudes toward their disturbed family member (Miklowitz et al., 1988). High EE in family members of individuals with bipolar disorder predicts a more pernicious course relative to bipolar individuals whose family members express low-EE attitudes (Miklowitz et al., 1988, 2000). Further, high-EE relative/patient pairs have more conflict in laboratory assessments during the postepisode stabilization period than low-EE relative/patient pairs (Simoneau, Miklowitz, & Saleem, 1998).

Psychoeducation for bipolar disorder has been implemented in different forms. One commonly used

approach is a 21-session FFT program (Miklowitz & Goldstein, 1990, 1997). This protocol involves three primary components: psychoeducation about bipolar disorder, communication enhancement, and problem-solving skills training. The *Psychoeducation* component includes information about the course, causes, and treatment of bipolar disorder. Clients and their family members are educated on the important role that life events and stressors play in the course of bipolar disorder and life events are viewed as *occasion setters* for the onset of bipolar episodes. Similar to CBT, clients and their family members are educated on the importance of identifying early warning signs or prodromes of bipolar episodes given that full-blown episodes often overwhelm a person's coping strategies. The *Communication Enhancement* component is concerned with enhancing the quality and efficiency of the family's or couple's communication. Family members are informed about the role of the family in the course of bipolar disorder, and that family tension, when combined with ineffective or negative communication, can result in increased risk of relapse. Family members are acquainted with new communication strategies for negotiating family tension, including expressing positive feelings, active listening, making positive requests for change, and expressing negative feelings. Finally, the *Problem-Solving Skills Training* involves identifying specific problems faced by families during the aftermath of an episode and strategies for managing these problem areas. Family members are assisted in defining the problem areas, brainstorming solutions, and implementing these solutions.

Psychoeducation programs have also been implemented in group and marital format. Group psychoeducation for bipolar disorder addresses illness awareness, treatment compliance, early detection of symptoms, and lifestyle regularity (Colom et al., 2003). Marital psychoeducation addresses these issues in the context of an intimate relationship (Clarkin, Carpenter, Hull, Wilner, & Glick, 1998).

Research indicates that psychoeducational interventions for bipolar disorder have a positive prophylactic effect for a number of clinically relevant indices. Most of the studies used a randomized controlled trial in which clients were assigned to either a psychoeducational intervention or a Crisis/Clinical Management program (CM). All clients received concomitant

pharmacotherapy. Both FFT (Miklowitz, George, Richards, Simoneau, & Suddath, 2003; Miklowitz et al., 2000; Rea et al., 2003) and group psychoeducation (Colom et al., 2003) were associated with reduced relapse rates relative to CM. Miklowitz, George, et al. (2003) and Miklowitz et al. (2000) reported that clients undergoing FFT had longer survival intervals (i.e., time to relapse) and a greater decrease in affective symptoms than clients undergoing CM at follow-up. FFT (Rea et al., 2003) and group psychoeducation (Colom et al., 2003) have also been associated with reduced hospitalization, and a psychoeducation intervention for clients and their spouses has been associated with increased medication compliance (Clarkin et al., 1998). However, these studies indicated that psychoeducation is typically more effective in managing depression than mania. In Colom et al. (2003), at the end of follow-up, group psychoeducation clients had a lower number of all types of recurrences than CM patients, except for mania.

Two studies have examined the effect of FFT on EE and the interaction patterns of individuals with bipolar disorder and their relatives. One of these studies found that following treatment, clients and relatives who received FFT showed a greater amount of positive interactional behavior compared with those in the CM condition (Simoneau, Miklowitz, Richards, Saleem, & George, 1999). Additionally, Honig, Hoffman, Rozendaal, and Dingemans (1997) found that FFT lowered EE and that clients with key relatives who had low EE had a better course (lower hospital admissions) than clients with high-EE key relatives.

Over the past decade, clinicians have begun to apply family-based psychoeducation for children and adolescents with bipolar disorder. Regarding children, family-based psychoeducation is associated with an increase among parents in their knowledge of bipolar disorder (Fristad, Arnett, & Gavazzi, 1998; Fristad, Goldberg-Arnold, & Gavazzi, 2003), high consumer satisfaction (Fristad, Gavazzi, & Soldano, 1998), greater social/parental support (Fristad, Goldberg-Arnold, & Gavazzi, 2002; Fristad et al., 2003), and a decrease in negative EE (Fristad, Arnett, et al., 1998). Miklowitz et al. (2004) recently examined the efficacy of FFT for adolescents with bipolar disorder and found that FFT was associated with improvements in both depression and manic symptoms and behavior over a one-year period.

**PSYCHOEDUCATION FOR BIPOLAR DISORDER: PERSPECTIVE
FROM THE BAS DYSREGULATION THEORY**

Although psychoeducation interventions for bipolar disorder typically address a number of topics, including information about symptoms, medication adherence, and etiology, one important objective is to help clients and their family members identify triggers of bipolar episodes (Morris, Miklowitz, & Waxmonsky, 2007). Bipolar disorder is presented in the context of a vulnerability-stress model in which genetic, biological, and social factors interact in bringing about episodes of mood disorder or in protecting against their occurrence (Miklowitz & Goldstein, 1997). Clients and their family members/spouses are educated about the relationship between life stress and affective episodes, encouraged to anticipate future stressors, and encouraged to identify low-stress activities. However, aside from work on EE and circadian rhythm disruption, many of the psychoeducational manuals take a more generalist approach to life stress and do not explicitly discuss specific types of life events that have been found to precipitate bipolar episodes in the research literature. In many respects, this is understandable given that much of the research into life events and bipolar disorder has been largely atheoretical, with many studies relying on global classifications of events such as *negative events*, *stressful events*, and *severe events*. However, an advantage of the BAS dysregulation theory is that it makes specific predictions about the types of life events relevant to the onset of both manic and depressive episodes. Accordingly, as outlined below, we propose that research in line with the BAS dysregulation theory may be helpful to psychoeducation interventions in identifying specific types of life events relevant to the course of bipolar disorder.

BAS Activation- and BAS Deactivation-Relevant Life Events

According to the BAS dysregulation theory, there are two prerequisites for the development of bipolar symptoms/episodes—an occurrence of an event that is appraised as BAS relevant and a hypersensitivity to BAS-relevant events (Urosevic et al., 2008). The BAS hypersensitivity characterizing individuals at risk for bipolar disorder “transforms the normally mild effects of events into periods of dysregulation. That is, the biobehavioral systems of bipolar prone individuals will be more perturbed by stimuli of both positive and neg-

ative valence” (Depue et al., 1987, pp. 118–119). In essence, individuals vulnerable to bipolar disorder are unable to effectively regulate their emotions and behavior because their proneness to BAS dysregulation renders them excessively responsive to BAS-relevant events. In support, Alloy et al. (2009a) found that BAS-relevant events prospectively predicted increases in bipolar symptoms among bipolar spectrum participants over a one-year follow-up.

Two types of BAS-relevant events have been proposed—BAS activation-relevant events and deactivation-relevant events. BAS activation-relevant events involve an opportunity for an individual to attain a highly valued reward/goal. Depue and Collins (1999) have proposed a variety of rewards to be BAS activating—ranging from food, sex, social rewards, money, to long-term goals. Alloy, Abramson, Whitehouse, Sylvia, Hafner, et al. (2009) noted that self-reported BAS sensitivities, especially the BAS-Drive subscale, interacted with BAS-activation relevant events to prospectively predict increases in hypomanic symptoms. High-BAS participants who experienced more BAS activation-relevant events showed the largest increase in hypomanic symptoms. Johnson et al. (2000) found that life events involving high goal attainment were significantly related to higher levels of follow-up manic, but not depressive, symptoms, even when controlling for baseline manic symptoms. In line with the BAS dysregulation theory’s focus on high drive/incentive motivation among individuals with bipolar disorder, positive events that did not involve the attainment of a valued reward were not associated with an increase in manic symptoms. These results are consistent with research showing that the relationship between hypomanic/manic symptoms and success expectancies is most pronounced following a proposed BAS activation-relevant event (i.e., goal attainment; Johnson et al., 2005). Nusslock et al. (2007) extended this work in reporting that a full 42% of bipolar spectrum individuals developed a new episode of hypomania in response to a goal striving life event (Nusslock et al., 2007). In contrast, only 4% of bipolar individuals not exposed to this event developed a new hypomanic episode during the same time. Taken together, the findings of these two studies suggest that goal striving and goal attainment life events are two BAS

activation-relevant events particularly important to the course of bipolar disorder.

BAS deactivation-relevant events involve definite failure to obtain or loss of pertinent rewards/goals (Depue & Iacono, 1989; Depue et al., 1987; Urosevic et al., 2008). The lower the expectations of a positive outcome of one's actions, or the more hopeless the individual becomes, the greater the subsequent BAS deactivation will be (Abramson et al., 2002). BAS deactivation-relevant events have been shown to prospectively predict increases in depressive symptoms among individuals with a bipolar spectrum disorder (Alloy, Abramson, Whitehouse, Sylvia, Hafner, et al., 2009). Given the BAS dysregulation theory's focus on drive/incentive motivation, and the fact that the cognitive profiles of bipolar individuals are characterized by extreme goal-striving tendencies, perfectionism, and autonomy, we predict that bipolar individuals will be particularly vulnerable to depression in response to failure or loss in the achievement domain.

As indicated, psychoeducational interventions tend to focus on the role that more global life stress plays in the course of bipolar disorder. Research and theory on BAS activation and deactivation events, however, may be able to help provide better resolution on the specific types of life events likely to precipitate bipolar episodes. We propose that events in the achievement domain are particularly salient to the course of bipolar disorder. It may appear counterintuitive to bipolar individuals and their families that events involving the pursuit and attainment of achievement goals can act as risk factors for bipolar episodes. Indeed, bipolar individuals highly value these goal-oriented events (Johnson, 2005). We are not suggesting that bipolar individuals refrain from pursuing or attaining goals. We are suggesting, however, that bipolar individuals enter into these events with an understanding that they may be at heightened risk of relapse. With this understanding, psychoeducational interventions can help bipolar individuals develop problem-solving and coping strategies to regulate the affect these events likely invoke.

Self-Generated BAS-Relevant Life Events

Clinicians have long noted that individuals with bipolar disorder, often, by their own behavior, create life events that worsen the course of their illness. This *stress*

generation effect indicates that depressed or bipolar individuals often experience an increased rate of life events that are dependent on their behavior (Daley et al., 1997; Hammen, 1991). This suggests a *two-hit model* in which individuals with BAS hypersensitivity not only react more strongly to BAS-relevant events but also are exposed to such events more frequently through event generation or selection. That is, the stimulus-seeking, hyper-driven, and workaholic traits characteristic of individuals with bipolar disorder may create or select the very life events likely to trigger bipolar episodes. In line with this view, Urosevic et al., (2009) reported that bipolar spectrum individuals experienced both more BAS activation-relevant (e.g., took on new tasks) and more BAS deactivation-relevant events (e.g., failed at a task) than normal participants.

One example of this might be an individual with bipolar disorder who has recently attained a goal for which she has strived. According to Johnson et al. (2005), this goal attainment is likely to induce a surge in confidence in the individual and an expectancy of future success in the achievement domain (i.e., cognitive prodrome). This success expectancy leads the individual to excessive goal-striving behaviors and grandiose plans. Given the suggestion that manic prodromes are associated with decreased awareness of danger signs (Lembke & Ketter, 2002), the individual begins making risky financial decisions, takes on more work than she can handle, and engages in excessive pleasurable activities. These self-generated events exacerbate the individual's prodromal symptoms, leading to further dysregulation, and eventually to a full manic episode. Over time, it becomes clear to the person that she is unable to manage her current state. Because she is so overextended, she fails to meet professional/familial obligations; she becomes aware of the financial and/or personal implications of her impulsive decisions, and, as a result, experiences significant failure in the achievement domain. This failure serves as a BAS deactivation-relevant event, which may cause a subsequent depressive episode.

This sequence of events could potentially have been preempted had the bipolar individual been aware of the concept of stress generation. There is growing awareness among clinicians of the importance of informing individuals with bipolar disorder and their families that the events that have the most notable

impact on the course of bipolar disorder are often generated by the bipolar individual (Lam et al., 1999). However, to date, the majority of psychoeducational manuals do not devote much discussion to self-generated events, particularly as it pertains to the achievement domain. BAS-relevant events that seem positive and proactive can, in excess, create chaos and significant stress. The goal is to strike a balance so that the individual with bipolar disorder can enjoy goal striving, but moderate it so that such behaviors do not result in dysregulation. This is especially true during a prodromal period in which the bipolar individual is hypersensitive to BAS-relevant events (Urosevic et al., 2008). Thus, psychoeducational programs may benefit from allocating more attention to the impact of self-generated life events in the achievement domain on the course of bipolar disorder.

This sequence of events also highlights the bidirectional relationship between life events and motivational state. That is, under certain circumstances, the presence of a BAS-relevant life event may serve as an initial trigger for an excessive increase or decrease in approach motivation, which, ultimately, may result in a bipolar episode. However, under other circumstances, a person's motivational or affective state may cause him or her to actually generate or select the particular types of life events that may lead to a more severe bipolar course. Clinicians can help patients understand this process and monitor both their response and exposure to relevant life events, particularly during prodromal periods.

Expressed Emotion in Achievement Domain

Although less direct, research in line with the BAS dysregulation theory may also have implications for the *communication enhancement training* module of FFT programs. On this topic, elevated drive, ambition, and achievement motivation have not only been observed in individuals with bipolar disorder but also are characteristic of the family members of individuals with a history of bipolar disorder (Spielberger et al., 1963).² Family members of bipolar probands have higher lifetime occupational and educational attainment than the general population (Tsuchiya, Agerbo, Byrne, & Mortensen, 2004). Growing up in such families, individuals with bipolar disorder are likely expected to attain an equiva-

lent degree of professional success. Indeed, two-thirds of individuals with bipolar disorder had academic performance in the good to excellent range prior to the onset of their first bipolar episode (Kutcher, Robertson, & Bird, 1998). These expectations may result in the individual with bipolar disorder engaging in excessive goal-striving behaviors in the presence of possible academic/professional reward, thus putting themselves at risk for a hypomanic/manic episode. These expectations, however, may also result in family members being particularly critical, hostile, and/or over involved when the individual with bipolar disorder experiences failure in the achievement domain. Accordingly, family members of individuals with bipolar disorder may benefit from being particularly attuned to negative EE attitudes in the achievement domain. Presumably, this attention would have benefits for managing both mania and depression. With respect to mania, decreased EE in the achievement domain may help individuals with bipolar disorder moderate extreme goal-striving attitudes/behaviors associated with mania tendencies. In terms of depression, decreased EE in the achievement domain may help reduce catastrophic responses to academic/professional failure and increase a sense of social support. Further research is needed to test this prediction.

In summary, we propose that research in line with the BAS dysregulation theory has important implications for psychoeducational interventions for bipolar disorder. Family members and clients may benefit from being educated on the role that BAS activation-relevant events and BAS deactivation-relevant life events have on triggering bipolar episodes. Research indicates that goal-striving and goal-attainment life events are particularly salient BAS activation-relevant events (Johnson et al., 2000; Nusslock et al., 2007). We hypothesize that definite failure in the achievement domain is a salient BAS deactivation-relevant event, although future research is needed to test this prediction. Second, clinicians should inform their clients of the importance of minimizing excessive goal-striving behaviors, particularly during manic prodromes, in order to minimize exposure to self-generated BAS-relevant events. As discussed in the next section, self-generated events that may be particularly important to manage are disruptions in social and circadian rhythms.

Lastly, with respect to *Communication Enhancement* in FFT programs, research into BAS dysregulation theory indicates that bipolar disorder is characterized by elevated drive, ambition, and achievement motivation. Thus, negative EE in the achievement domain may be a particularly relevant stressor for bipolar individuals.

INTERPERSONAL AND SOCIAL RHYTHM THERAPY

The Social Rhythm or Zeitgeber Theory (Ehlers, Kupfer, Frank, & Monk, 1993; Ehlers et al., 1988) postulates that life events that disrupt daily rhythms or schedules will be especially likely to precipitate bipolar symptoms and episodes. This theory suggests that individuals with bipolar disorder have a predisposition to circadian rhythm and sleep–wake cycle abnormalities that may be responsible, in part, for the symptomatic manifestations of the illness. In this model, a *Social Zeitgeber* is defined as a personal relationship, social demand, or life task that entrains biological rhythms such as circadian rhythms or the sleep–wake cycle. It is hypothesized that life events (both positive and negative) that involve the disruption or loss of a Social Zeitgeber can trigger bipolar episodes by causing a dysregulation of biological rhythms (Ehlers et al., 1988). In line with this view, Wehr, Sack, and Rosenthal (1987) have demonstrated that sleep reduction can lead to mania in individuals with bipolar disorder and that sleep deprivation has significant antidepressant effects in individuals with both unipolar and bipolar depression (Leibenluft, Moul, Schwartz, Madden, & Wehr, 1993; Leibenluft & Wehr, 1992). Further, Malkoff-Schwartz et al. (1998, 2000) found that manic patients had significantly more preonset stressors characterized by social rhythm disruption (e.g., change in sleep–wake cycle) than did depressed patients with bipolar disorder. Wehr et al. (1987) argued that sleep loss may be a common causal pathway in the genesis of mania. Other research has shown that social rhythm disruption precipitates depressive symptoms and episodes among bipolar individuals (Sylvia et al., 2009).

Based on such research, Frank et al. (1997) and Frank et al. (1999) developed IPSRT. This therapy integrates interpersonal psychotherapy for unipolar depression (Klerman, Weissman, Rounsaville, & Chevron, 1984) with behavioral and environmental strategies to help stabilize irregularities of the sleep–wake cycle among bipo-

lar individuals. Techniques are drawn from interpersonal psychotherapy given the hypothesis that social or interpersonal events play an important role in entraining biological rhythms (Ehlers et al., 1988, 1993). It is proposed that teaching individuals with bipolar disorder skills to navigate interpersonal stressors will help them have more regularity in their biological and circadian rhythms.

With regard to social rhythm maintenance, IPSRT focuses on (a) the reciprocal relationships between life stress and the onset of mood disorder symptoms, (b) the importance of maintaining regular daily rhythms and sleep–wake cycles, and (c) the identification and management of potential precipitants of rhythm dysregulation with special attention to interpersonal triggers. Clients are first instructed to monitor their social routines and rhythms using the Social Rhythm Metric (SRM; Monk, Kupfer, Frank, & Ritenour, 1991), a self-report instrument designed to quantify daily life rhythms. Using the SRM, the client ideally begins to see the interplay among instabilities in daily routines, patterns of social stimulation, sleep–wake times, and mood fluctuations. IPSRT then implements behavioral strategies to help the client alter those activities that promote rhythm irregularities (minimizing overstimulation, monitoring the frequency and intensity of social interactions). The client is encouraged to make significant life changes in order to protect the integrity of his or her circadian rhythms and sleep–wake cycle.

The interpersonal techniques employed in IPSRT are similar to those described in Klerman and colleagues' (1984) description of interpersonal psychotherapy for unipolar depression. The therapist determines the important individuals in the client's life, known as the interpersonal inventory. In addition to outlining the *cast of characters* in the client's life, the therapist probes the quality of those relationships and aspects of the relationships that the client would like to change. The therapist also identifies an interpersonal problem area during the initial phase of treatment that will serve as the interpersonal treatment focus. These problem areas include grief, role disputes, role transitions, and interpersonal deficits. Thus, IPSRT is a truly integrated therapy that allows interpersonal and social rhythm strategies to function synergistically.

Preliminary evidence suggests that IPSRT has a positive prophylactic effect as an adjunct to long-term

maintenance pharmacotherapy. Frank et al. (2005) reported that individuals with bipolar disorder assigned to IPSRT went longer without a new affective episode. Further, IPSRT was associated with higher regularity of social rhythms, and this increased regularity was associated with a reduced likelihood of recurrence. In an earlier study, individuals with bipolar disorder who received IPSRT had fewer depressive episodes over the course of a year relative to patients in a comparative clinical management group (Frank, 1999). No differences, however, were observed for rates of manic episodes. Another study compared the efficacy of IPSRT versus CM on rates of suicide attempts among individuals with bipolar I disorder who were followed up for an average of 1.4 years (Rucci et al., 2002). Both IPSRT and CM were associated with a reduction in suicide attempt risk. Given the low number of suicide attempts, the authors were unable to compare the efficacy of IPSRT to CM. In an attempt to examine the mechanisms through which IPSRT works, Frank et al. (1997) examined the extent to which initial exposure to IPSRT leads to lifestyle regularity. IPSRT was efficacious in regularizing the daily lifestyles of recovering bipolar patients, whereas this lifestyle regularity was not observed in the CM group. Research also indicates that changing the treatment protocol (from IPSRT to CM and vice versa) for individuals with bipolar disorder is associated with higher rates of recurrence and levels of symptomatology (Frank et al., 1999). The authors note that “it appears that a constant treatment regimen contributes to enhanced stability. By contrast, changing treatment parameters may represent yet another destabilizing pathway to recurrence in bipolar disorder” (p. 585). Lastly, a recent treatment outcome study integrated the central tenets of FFT and IPSRT (Miklowitz, Richards, et al., 2003), reporting that clients given this combined therapy along with medication showed longer time to relapse than those given CM. Consistent with existing FFT and IPSRT studies, however, the combined treatment had a greater impact on depressive than manic symptoms.

IPSRT FOR BIPOLAR DISORDER: PERSPECTIVE FROM THE BAS DYSREGULATION THEORY

A central component of IPSRT is identifying and managing potential precipitants of rhythm dysregulation

(Frank, Swartz, & Kupfer, 2000). As outlined above, IPSRT has given particular attention to the disruptive effects that interpersonal events have on circadian rhythms (Frank et al., 2000). This attention is highly warranted given the important role that such events (childcare, marriage, etc.) play in entraining biological rhythms (for a review, see Frank, 2007). However, the research outlined in the current article indicating that bipolar disorder is characterized by high drive/incentive motivation indicates that individuals with bipolar disorder may also be especially sensitive to events in the achievement domain. Moreover, this hypersensitivity may put individuals with bipolar disorder at particular risk for social/circadian rhythm disruption in response to such events. Accordingly, we argue that it will be helpful for the IPSRT therapist to be particularly attuned to the social and circadian rhythm disruption associated with both interpersonal and achievement-oriented life events.

IPSRT also focuses primarily on the disruptive effects that independent life events (i.e., caused by external factors and/or not related to the individual's behavior) have on circadian rhythms. As noted by Frank et al. (2000), “the search for triggers of rhythm disruption leads the IPSRT therapist to comb the patient's history in search of *external* sources of rhythm disruption” (p. 599). However, the stress-generation hypothesis proposes that individuals with bipolar disorder often create or select the very events that trigger bipolar episodes (Daley et al., 1997; Hammen, 1991). Accordingly, the social/circadian rhythm disruption typically observed prior to a bipolar episode is often generated by the patient rather than imposed on him or her by an external source (Akiskal, 1996; Lam et al., 2003). The BAS dysregulation theory expands on this view, proposing that a common source of circadian rhythm disruption is self-generated, goal-striving behaviors. The drive to succeed can often lead to working excessively long hours and neglecting important social routines (Lam et al., 1999). In extreme cases, this can involve sleep disruption and total disruption to social routines, which can lead to disruption of circadian rhythms. In line with this view, the two most common prodromes of a manic episode are increased goal-directed activity and decreased need for sleep (Lam & Wong, 1997). Indeed, Molnar et al. (1988) reported that 100% of bipolar

participants reported increased goal-directed activity during a manic prodrome and 90% reported decreased sleep. This highlights the important relationship between self-generated, goal-oriented events and social/circadian rhythm disruption in the onset and/or exacerbation of bipolar episodes. It also highlights the importance of regulating excessive goal-striving-related behaviors during manic prodromal periods.

We are not suggesting that IPSRT reduce its focus from the disruptive effects of independent interpersonal events. We are suggesting, however, that it may be helpful for the IPSRT therapist to be particularly sensitive to the disruptive effects of both independent and self-generated triggers of rhythm disruption. Following the BAS dysregulation theory (Depue et al., 1987), we propose that self-generated events in the achievement domain may be particularly relevant triggers for social/circadian rhythm disruption. Many of the therapeutic strategies designed to address the effect of independent interpersonal events on circadian/social rhythms could be applied to both independent and self-generated goal-relevant events. For example, the interpersonal inventory used in IPSRT is designed to identify and assess the major relationships in an individual's life. This logic could be extended to the development of a *goal-relevant inventory* in which the therapist and client could identify the meaning and value of relevant goals. Using the SRM (Monk et al., 1991), the therapist and client could then examine the extent to which these events are likely to induce social/circadian rhythm disruption and identify goal-pursuit strategies that would minimize such rhythm disruption.

CONCLUSION AND FUTURE DIRECTIONS

Evidence suggests that psychosocial interventions have a positive prophylactic effect on bipolar disorder. However, a limited number of studies have been conducted and further work is needed. Accordingly, the objective of the current article was to examine whether recent findings in line with the BAS dysregulation theory can inform the three prominent psychosocial interventions for bipolar disorder—CBT, Psychoeducation, and IPSRT. The research presented in the current article suggests that the biopsychosocial vulnerability for bipolar disorder may be particularly expressed in the achievement domain. We propose that clinicians and

researchers may benefit from being particularly sensitive to the role of achievement-relevant themes in the treatment and management of bipolar disorder. Accordingly, we propose the following recommendations: First, research indicates that the cognitive profiles of bipolar disorder are characterized by extreme goal-striving tendencies and perfectionism in the achievement domain, rather than the sociotropic, dependent features often exhibited by unipolar depressed individuals. In line with Lam et al. (1999, 2003), clinicians working with bipolar individuals should be primed to address these perfectionistic tendencies in the achievement domain. Second, bipolar patients and their family members should be educated on the role that goal-relevant events play in precipitating bipolar episodes. In line with the stress-generation hypothesis, we argue that clinicians should address both independent and self-generated BAS-relevant events. Third, the fact that bipolar disorder seems to be characterized by elevated drive, ambition, and achievement motivation suggests that negative EE in the achievement domain may be a particularly relevant stressor for individuals with bipolar disorder and should be addressed by FFT therapists. Fourth, IPSRT may benefit from being attuned to the possible disruptive effect that independent and self-generated goal-relevant events have on social/circadian rhythms.

The majority of research into psychosocial interventions for bipolar disorder has focused on adults. However, epidemiological findings (Weissman et al., 1996) suggest that bipolar disorder first peaks in rates between the age of 15 and 19. This transition from adolescence to young adulthood has been referred to as an *age of risk* (Weissman et al., 1996) during which bipolar conditions *consolidate* and sometimes progress to a more severe condition. Accordingly, researchers and clinicians have begun the important task of developing age-appropriate psychosocial interventions for children and adolescents with bipolar disorder (Fristad, Arnett, et al., 1998; Fristad, Gavazzi, et al., 1998; Fristad et al., 2003; Miklowitz et al., 2004; Post & Leverich, 2006). Adolescence is a period of significant transition in which individuals encounter a number of BAS activation (graduating from high school, applying to college, dating) and BAS deactivation (academic failure, social rejection) relevant events. Helping individuals with

bipolar disorder navigate these events may help prevent a worsening of course.

NOTES

1. Although there is some evidence for specific brain areas associated with BAS functioning (for a review, see Depue & Collins, 1999), there are still many unexamined questions regarding the neural circuitry of this system. Thus, at this point in time, the BAS is more of a theoretical construct than a well-defined neurobiological pathway. Throughout the present article we occasionally use the terms *BAS activation* and *BAS deactivation*. With regard to BAS activation, we are not referring to the activation of specific neural structures, but rather more generally to the activation of an approach-oriented motivational state. Similarly, with regard to the term *BAS deactivation*, we are not referring to the deactivation of specific neural structures, but rather to the deactivation or shutdown of an approach-oriented state.
2. Preliminary evidence suggesting that the similarity in levels of achievement motivation and creativity between bipolar individuals and their nonaffected family members is driven, at least in part, by genetic factors comes from two sources: (a) an early study by McNeil (1971) demonstrating that biological, but not adoptive, parents of bipolar individuals displayed high levels of creativity, and (b) research estimating the overall heritability of bipolar disorder to be approximately 70% (Edvardson et al., 2008).

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