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Differentiating risk for mania and borderline personality disorder: The nature of goal regulation and impulsivity ☆

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ABSTRACT

Researchers and clinicians have long noted the overlap among features and high comorbidity of bipolar disorder and borderline personality disorder. The shared features of impulsivity and labile mood in both disorders make them challenging to distinguish. We tested the hypothesis that variables related to goal dysregulation would be uniquely related to risk for mania, while emotion-relevant impulsivity would be related to risk for both disorders. We administered a broad range of measures related to goal regulation traits and impulsivity to 214 undergraduates. Findings confirmed that risk for mania, but not for borderline personality disorder, was related to higher sensitivity to reward and intense pursuit of goals. In contrast, borderline personality disorder symptoms related more strongly than did mania risk with threat sensitivity and with impulsivity in the context of negative affect. Results highlight potential differences and commonalities in mania risk versus borderline personality disorder risk.

1. Introduction

There has been ongoing debate as to whether borderline personality disorder and bipolar spectrum disorders—including bipolar I and II disorders and cyclothymia—are overlapping or distinct conditions (Stone, 2006; Bassett, 2012). Across studies, as many as 14.5–30% of those with bipolar I disorder (Kay et al., 1999; Brieger et al., 2003; Perugi et al., 2013), and as many of 46% of those with bipolar II disorder (Vieta and Colom, 1999; Benazzi, 2000; Henry et al., 2001) also meet criteria for borderline personality disorder. Among respondents with borderline personality disorder in the National Epidemiologic Survey on Alcohol and Related Conditions (NESARC) study, 23.9% also met criteria for bipolar I disorder (Grant et al., 2008). In the community, misdiagnosis between these two conditions is all too common (Ruggero et al., 2010). The high degree of overlap suggests the possibility of shared risk and, consistent with this idea, both disorders involve affective instability and impulsivity (Magill, 2004). Indeed, some propose that both bipolar spectrum disorders and borderline personality disorder share the same underlying cyclothymic diathesis (Perugi et al., 2011). On the other hand, more than half of those with bipolar disorder do not appear to meet criteria for borderline personality disorder, suggesting that identifying unique facets of the two conditions could improve diagnostic accuracy (Blacker and Tsuang, 1992). In this paper, we focus on personality traits that could help explain overlap in risk for bipolar disorder and borderline personality disorder, as well as traits that might help distinguish risk for the two conditions.

Before turning to a discussion of personality traits, it is worth reviewing how well the two conditions can be distinguished on the basis of symptoms, course, and treatment (Paris, 2004). Bipolar spectrum disorders are distinguished by propensities toward elation (Henry et al., 2001) and discrete episodes (Paris, 2004), and are more responsive to mood stabilizers (Paris, 2004). None of these characteristics, though, are fail proof. Many people with bipolar I disorder do not report elation during mania (Sato et al., 2002; Akiskal et al., 2003). It is increasingly well-recognized that people with bipolar spectrum disorders experience chronic unremitting depressive symptoms (Judd et al., 2002), as well as affective instability outside of episodes (Akiskal, 2004), and many experience only a partial response to mood stabilizers (Bauer, 2005). Indeed, the overlap among symptoms has led some to argue for considering borderline personality disorder an "ultra-rapid-cycling" variant of bipolar spectrum disorders (Deltito et al., 2001). Further adding to the difficulties in relying on symptoms and course for differential diagnosis, a growing body of research

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suggests that borderline personality symptoms frequently remit, even though functional impairments can be more persistent (Zanarini et al., 2003a; Gunderson et al., 2011). Symptoms, course, and treatment response may not always provide diagnostic clarification, then, given the heterogeneity in the expression of these disorders.

Examining personality traits might help to bolster the ability to distinguish these two conditions. A growing literature has related bipolar spectrum disorders to goal dysregulation and emotion-relevant impulsivity. For example, multiple studies have found that sensitivity to reward is heightened among those at risk for mania—defined by elevated scores on the Hypomanic Personality Scale (HPS)—as well as among persons with remitted bipolar disorders (Alloy et al., 2009; see Johnson et al. (2012a) for review). Bipolar I disorder and risk for mania have been related to more intense pursuit of goals, including measures of goal striving (Spielberger et al., 1963; Scott et al., 2000; Lam et al., 2005; Wright et al., 2005; Alloy et al., 2008; Fulford et al., 2009) and extremely ambitious life goals (Johnson and Carver, 2006; Fulford et al., 2008; Carver and Johnson, 2009; Gruber and Johnson, 2009; Johnson and Jones, 2009), even after controlling for current mood symptoms. Risk for mania has also been related to greater cognitive reactivity to goal progress (i.e., "positive overgeneralization"; Eisner et al., 2008). Goal dysregulation has received less attention within borderline personality disorder. Here, we suggest that goal dysregulation may help distinguish those at risk for mania compared to those at risk for borderline personality disorder.

In contrast, borderline personality disorder and bipolar disorder have both been related to impulsivity. Bipolar I disorder and risk for mania have been related to heightened impulsivity, especially during positive mood states (Swann et al., 2001; Giovanelli et al., 2013; Johnson et al., 2013; Muhtadie et al., 2014; Newman and Meyer, 2014), and this aspect of impulsivity can be observed even during well periods. Borderline personality disorder has long been related to impulsivity (Lieb et al., 2004), and more recent research suggests that specific elevations in emotion-relevant impulsivity are present as well. Similarly, previous research has suggested that both bipolar disorders and borderline personality disorder are related to an increased propensity towards urgency, or impulsivity during negative emotion states (Whiteside et al., 2005; Johnson et al., 2013; Muhtadie et al., 2014). In one study, individuals diagnosed with borderline personality disorder (and comorbid major depressive disorder) reported significantly more impulsivity than did individuals diagnosed with bipolar II disorder (Wilson et al., 2007).

Beyond impulsivity, negative affectivity might be elevated in those at risk for borderline and bipolar disorders (Maples et al., 2014). Self-reported sensitivity to threat, as indexed by the Behavioral Inhibition Scale (BIS; Carver and White, 1994), is elevated among those with borderline personality traits (Pastor et al., 2007; Claes et al., 2009) and diagnoses (Taylor et al., 2006; Mortensen et al., 2010). Several studies have suggested that BIS is elevated only during periods of depression among those with bipolar spectrum disorders (see Johnson et al. (2012a) for review). In studies comparing levels of negative affectivity across diagnostic groups, individuals diagnosed with borderline personality disorder reported significantly more negative affectivity (hostility and depressed mood) than did individuals diagnosed with bipolar II disorder or cyclothymia (Wilson et al., 2007; Reich et al., 2012). Caution is warranted in that the Wilson study focused on individuals with borderline personality disorder comorbid with major depressive disorder.

In sum, although affective dysregulation is commonly noted in both bipolar spectrum disorders and borderline personality disorder, the relation of affect to goal regulation and impulsivity may provide insight into distinguishing risk for the two disorders.

The aim of the current study was to understand how goal regulation, emotion-relevant impulsivity, and threat sensitivity might help differentiate risk for mania and borderline personality disorder. Based on findings from the above literature, we hypothesized that risk for both mania and borderline personality disorder would be associated with emotion-relevant impulsivity, while risk for mania would be more strongly associated with goal dysregulation than would risk for borderline personality disorder. We included several measures of goal regulation traits that have been previously found to relate to mania risk and bipolar disorder (including reward sensitivity, over-responsivity to goal progress, and ambitious goal-setting).

In considering these issues, it is worth noting our methodological approach. Whereas studies of individuals with diagnosed bipolar disorders and borderline personality disorder undoubtedly have advantages, the repeated difficult experiences of these disorders can have significant implications for negative affect and goal regulation, and the treatments may influence negative affect as well as impulsivity (Newman and Meyer, 2014). As such, it is difficult to determine whether personality trait elevations observed within clinically diagnosed samples represent defining features of these disorders or byproducts of illness chronicity and treatment. In this study, then, we chose to study varying risk for bipolar and borderline personality disorders, rather than a clinical sample, by using scales that were designed to screen for risk of bipolar and borderline personality diagnoses.

2. Methods

2.1. Participants

Participants were 214 (65% female, median age=18 years, range 17–33) undergraduate students enrolled in introductory psychology courses at the University of Miami. The ethnic makeup of the current sample was 58% non-Hispanic Caucasian, 24% Hispanic, 5% African-American, 7% Asian-American, and 6% other ethnicities. Participants provided informed consent and completed measures in group settings as part of course credit. This study was approved by the University of Miami Institutional Review Board.

2.2. Measures

2.2.1. Measures of hypomania and borderline personality disorder risk

To assess risk, we used two scales designed as screeners of diagnostic status. Both scales cover central symptoms of the diagnosis, although the scale of mania risk also includes related personality traits, as we will discuss below. It is also worth noting that the borderline personality disorder screener was developed to detect concurrent diagnoses, whereas the mania screener was developed to assess both concurrent diagnoses and risk of future diagnoses.

2.2.1.1. McLean Screening Instrument for Borderline Personality Disorder (MSI-BPD; Zanarini et al., 2003b). The MSI-BPD was designed as a screening instrument to identify people who may have borderline personality disorder. This 10-item, true-false, self-report questionnaire was derived from the borderline personality disorder module of the Diagnostic Interview for DSM-IV Personality Disorders, a reliable semi-structured interview for Axis II disorders. Each diagnostic criterion is assessed by a single item with the exception of paranoia/dissociation, which is assessed using two items. The MSI-BPD has shown good test–retest reliability (Spearman's rho=0.72, $p < 0.01$) and adequate internal consistency (α=0.74). In this study, reliability was adequate (α=0.79). A cutoff score of 7 among outpatients without a history of psychosis or mania has resulted in good specificity and sensitivity, with 81% of those exceeding this threshold meeting diagnostic criteria for borderline personality disorder (Zanarini et al., 2003b). This cutoff also achieved optimal sensitivity/specificity in a community-based sample of women, with 75% of the sample correctly identified as having borderline personality disorder (Patel et al., 2011). Approximately 15% of our sample scored at or above the cutoff score of 7 (11% female; 24% male).

2.2.1.2. Hypomanic Personality Scale (HPS; Eckblad and Chapman, 1986). The HPS measures risk for manic symptoms. As background, it is important to note that bipolar spectrum disorders as a whole are defined by the presence of manic symptoms of varying degree and diagnosis, and the diagnosis of bipolar I disorder

does not require a history of depression. Indeed, a series of epidemiological studies verify that 25–33% of individuals with bipolar I disorder report no history of depressive episodes (see Cuellar et al. (2005) for review). Thus, in the current study we administered the HPS, a self-report form that assesses subsyndromal symptoms of mania, as the index of risk for bipolar disorder.

The measure consists of 48 true-false items related to changes in energy, emotions, and behaviors. Sample items include the following: "I am frequently so hyper that my friends kiddingly ask me what drug I'm taking" and "Sometimes ideas and insights come to me so fast that I cannot express them all".

In their validation study, Eckblad and Chapman (1986) showed that 78% of persons scoring more than two standard deviations above the mean met diagnostic criteria for a bipolar spectrum disorder, whereas none of the participants scoring one-half standard deviation above the mean and under met diagnostic criteria for bipolar spectrum disorders. In addition, a longitudinal study tracking individuals over 10–13 years showed that elevated scores on the HPS predicted increased risk for diagnosed bipolar disorders (Kwapil et al., 2000). These initial studies were recently replicated, with 14% of healthy college students scoring 1.5 S.D. above the mean on the HPS at baseline meeting criteria for a bipolar spectrum disorder 3 years later (DeGeorge et al., 2014). In addition, high scores on the HPS have most recently been linked to genetic polymorphisms implicated in bipolar disorders (Johnson et al., in press). The HPS has been widely used (Meyer et al., 1999; Johnson, 2005; Meyer and Hofmann, 2005; Johnson and Carver, 2006; Nusslock et al., 2007; Eisner et al., 2008; Gruber and Johnson, 2009). As expected, a small percentage of the current sample (1% female, 7% male) scored at or above the cutoff score of 36 ($\geq$ 95th percentile within the validation sample) on the HPS used in previous research to identify those at high risk for bipolar disorder (Eckblad and Chapman, 1986). The measure has displayed adequate internal consistency (α=0.87) and 15-week test–retest reliability (r=0.81; Eckblad and Chapman, 1986). Internal consistency in the current study was good (α=0.86).

2.2.2. Measures of goal regulation traits

2.2.2.1. Behavioral Inhibition/Behavioral Activation Scales (BIS/BAS; Carver and White, 1994). The BIS/BAS scales were designed to measure affective and behavioral responses to cues of reward and punishment. The BIS scale is composed of seven items that measure the tendency to respond to threatening events with negative affect (i.e., "If I think something unpleasant is going to happen I usually get pretty 'worked up'"). Internal consistency, factor structure, and test–retest reliability of the BIS have been found to be adequate (Carver and White, 1994; Heubeck et al., 1998; Jorm et al., 1999). In the present sample, internal consistency was adequate (α=0.73).

BAS items assess the tendency to respond to cues of reward with engagement and positive affect, ranging from "Very true for me" to "Very false for me" on a four-point scale. The BAS is composed of three factorially distinct subscales: Drive, Reward Responsiveness, and Fun Seeking. The Drive subscale measures motivation to energetically pursue desired goals (e.g., "If I see a chance to get something I want I move on it right away"). The Reward Responsiveness subscale measures the tendency to respond with heightened energy and positive affect when desired events are anticipated or experienced (e.g., "When good things happen to me, it affects me strongly"). The Fun Seeking subscale measures the impulsive behavioral pursuit of pleasurable opportunities (e.g., "I will often do things for no other reason than that they might be fun"). Psychometric properties of the BAS scales (e.g, internal consistency, factor structure, and test–retest reliability) have been found to be adequate (Carver and White, 1994; Heubeck et al., 1998; Jorm et al., 1999). In the present sample, internal consistencies were adequate (α=0.81 for total BAS, 0.66 for Reward Responsiveness, 0.74 for Drive, 0.69 for Fun Seeking).

2.2.2.2. Willingly Approached Set of Statistically Unlikely Pursuits (WASSUP; Johnson and Carver, 2006). The WASSUP is a 30-item self-report questionnaire that measures the tendency to set highly ambitious life goals. Respondents rate the likelihood of setting each goal on a scale of 1 ("NO CHANCE I will set this goal for myself") to 5 ("definitely WILL set this goal for myself"). In this study, we use the two factor-analytically derived subscales that have been most commonly found to relate to risk for mania and diagnoses of bipolar disorder—Financial Success (e.g., "you will have 20 million dollars or more") and Popular Fame (e.g., "celebrities will want to be your friends")—even after controlling for current manic symptoms (Johnson and Carver, 2006; Johnson et al., 2009, 2012b). Males have been shown to endorse significantly higher ratings of ambition for Financial Success than females (Johnson et al., 2009), which was replicated in the current study (t=2.45, $p<0.01$). Internal consistency estimates were adequate: Financial α=0.80 and Popular Fame α=0.87.

2.2.2.3. Positive Overgeneralization (POG; Eisner et al., 2008). The POG assesses potential generalizations from a small success to the respondent's broader sense of self. Factor analysis has revealed three subscales: Lateral Generalization from a good outcome in one domain to positive outcomes in other areas of life (e.g., "When I succeed at something, it makes me think about successes in other areas of my life," α=0.81 in the current study), Upward Generalization to more lofty goals in the same domain (e.g., "When people agree with me after I speak up in class, it makes me think about being in student government," α=0.77 in the current study), and Social Generalization from a positive social outcome to broader social outcomes (e.g., "When I made my first friend here, I knew I'd be a big success socially," α=0.81 in the current study). Responses are recorded on a four-point scale ranging from 1 ("I disagree with the statement a lot") to 4 ("I agree with the statement a lot"). In previous research using an undergraduate sample, risk for mania was significantly associated with all three POG subscales, and in particular with Upward Generalization (Eisner et al., 2008).

2.2.3. Measures of emotion-relevant impulsivity

2.2.3.1. The Positive Urgency Measure (PUM; Cyders et al., 2007). Positive urgency, as measured by the PUM, is defined as the tendency to act impulsively in response to positive moods (e.g. "Others would say I make bad choices when I am extremely happy about something"). The 14 items of the PUM are rated on a four-point scale ranging from 1 (agree strongly) to 4 (disagree strongly). In factor analysis studies, PUM items have emerged as a separate factor from other impulsivity scales and also demonstrate incremental validity above and beyond those measures (see below; Cyders et al., 2007). PUM scores have been associated with risky behavior, gambling behavior, and problematic drinking behavior, and have demonstrated high internal consistency in previous research (αs=0.94–0.95; Cyders et al., 2007). In this study, the scale demonstrated good internal consistency (α=0.82).

2.2.3.2. The UPPS Impulsive Behavior Scale – Urgency (Whiteside and Lynam, 2001). The Urgency subscale of the UPPS consists of 12 true/false items designed to capture tendencies to engage in impulsive behavior in response to negative affect, as well as difficulty with resisting temptations and cravings in those states. The Urgency subscale demonstrates strong relationships with various forms of psychopathology, including aggression, antisocial behavior, substance use, inattention, and eating problems (Miller et al., 2003; Whiteside and Lynam, 2003). The Urgency subscale has shown high internal consistency in previous research (α=0.86–0.89; Whiteside et al., 2005), as was demonstrated in the current study (α=0.89).

3. Results

We first examined the distributions of key variables. As expected, the MSI-BPD was positively skewed and included one significant outlier. After removing this outlier, the distribution remained positively skewed, though the levels of skew and kurtosis were both within acceptable limits. This outlier was removed from all analyses. The mean MSI-BPD score was 2.75 (S.D.=2.77) and the mean HPS score was 19.37 (S.D.=8.19). MSI-BPD scores were correlated with HPS scores (r=0.22, $p<0.01$).

To test hypotheses, we computed bivariate correlations of the HPS and MSI-BPD with the measures pertaining to goal regulation traits and emotion-relevant impulsivity (see Table 1). These analyses revealed clear distinctions in risk for mania (HPS) and borderline personality disorder (MSI-BPD). That is, the HPS was significantly positively related to all eight measures of goal regulation traits (BAS, WASSUP, and POG; rs=0.14–0.48, all ps <0.05) with the exception of the BIS ($r=-0.01$), whereas the MSI-BPD was only significantly associated with the BIS (r=0.23, $p<0.01$). Both risk scales were associated with impulsivity in the context of positive (PUM with MSI-BPD: r=0.29, $p<0.01$; PUM with HPS: r=0.32, $p<0.01$) and negative (UPPS – Urgency with MSI-BPD: r=0.39, $p<0.01$; UPPS – Urgency with HPS: r=0.20, $p<0.01$) affect.

We then tested differences between correlation coefficients using t-tests for nonindependent correlations (Howell, 1997) to further elucidate the relative strengths of association between risk groups (see Table 1). This analysis revealed that the HPS was significantly more associated with seven of the eight measures of goal regulation traits, whereas the MSI-BPD was significantly more related to sensitivity to punishment (BIS) and impulsivity in the context of negative affect (UPPS – Urgency).[1]

[1] Comparing significant correlations between males and females using Fisher's z-transformations yielded one gender difference: the relationship between the PUM and HPS was significantly higher in females than males (z=2.96, $p<0.01$).

Table 1
Summary statistics and comparison of correlations between risk for mania and risk for borderline personality disorder with measures of goal regulation traits and emotion-relevant impulsivity.

Scale	Range	*M*	S.D.	Correlation with Risk for Mania (HPS)	Correlation with Risk for Borderline Personality Disorder (MSI-BPD)	*t* for difference in correlations
HPS	2–42	19.37	8.19	–	–	–
MSI-BPD	0–10	2.68	2.57	–	–	–
Goal Regulation Traits						
BAS – Drive	2–5	3.55	0.73	0.48**	0.11	4.28**
BAS – Reward Responsiveness	3–5	4.35	0.48	0.29*	−0.04	3.56**
BAS – Fun Seeking	1.75-5	3.81	0.74	0.43**	0.08	4.03**
WASSUP – Popular Fame	1–5	1.83	0.82	0.39**	0.11	3.35**
WASSUP – Financial	1–5	2.56	1.15	0.14*	0.01	1.42
POG – Upward	1–5	2.63	0.88	0.25**	−0.02	3.04**
POG – Social	1–5	2.27	0.86	0.17*	−0.05	2.36**
POG – Lateral	1–5	3.75	0.74	0.18*	−0.13	3.47**
BIS	1.43–5	3.80	0.66	−0.01	0.23**	−2.52**
Emotion-relevant impulsivity						
UPPS – Urgency	1–5	2.80	0.92	0.20**	0.39**	−2.28*
PUM	1-4.43	2.30	0.83	0.32**	0.29**	0.36

BAS=Behavioral Activation Scale; BIS=Behavioral Inhibition Scale; HPS=Hypomanic Personality Scale; MSI-BPD=McLean Screening Instrument for Borderline Personality Disorder; POG=Positive Overgeneralization Scale; PUM=Positive Urgency Measure; UPPS=UPPS Impulsive Behavior Scale; WASSUP=Willingly Approached Set of Statistically Unrealistic Pursuits.

* $p < 0.05$.
** $p < 0.01$.

4. Discussion

Results highlight commonalities and differences between risk for bipolar disorder and risk for borderline personality disorder, speaking to the potential importance of goal regulation and emotion-relevant impulsivity in distinguishing risk. Although both risk measures were related to difficulties in emotion-relevant traits, the profile across impulsivity and goal dysregulation measures appeared to distinguished between borderline personality and bipolar disorder risk. We describe findings in more detail before discussing key limitations and future directions.

Risk for borderline personality disorder was associated with sensitivity to threat (BIS) and with impulsivity in response to negative emotion, and these links were statistically stronger than the relationship of these variables with mania risk. These findings are consistent with the idea that negative affect and reactive impulsivity are core characteristics of the borderline personality disorder diagnosis (Trull et al., 2008). Risk for mania, on the other hand, may be more associated with approach motivation and goal dysregulation. Measures of approach motivation, over-ambitious goal setting, and positive overgeneralization were related to mania risk, and the magnitude of these correlations was statistically stronger than the nonsignificant correlations observed with risk for borderline personality disorder. Findings of ambitious goal setting and positive overgeneralization being linked to mania risk are interesting given that increased goal-directed activity is a diagnostic criterion of mania. Nonetheless, previous findings show that these traits are present even outside of episode among persons with bipolar disorder, and so do not appear to specifically reflect an elevation of manic symptoms. Taken together, these findings suggest that the use of measures of impulsivity and goal dysregulation might help differentiate between risk for mania and borderline personality disorder.

Only two of the indices failed to help differentiate manic and borderline risk: impulsivity in response to positive emotions and ambitions related to financial success. Previous and current findings indicate that ambitions related to financial success differ by gender, and so might interfere with the ability to cleanly use this variable to distinguish at-risk groups (Johnson et al., 2009). Positive urgency was significantly correlated with both risk measures, consistent with recent findings that positive urgency is related to a host of syndromes, including anxiety, suicidality, and depression (Johnson et al., 2013). As such, our current findings fit with a growing literature suggesting that positive urgency is a transdiagnostic characteristic.

Several limitations must be noted. The sample for this study consisted of relatively healthy, undiagnosed undergraduates. Nonetheless, while a relatively low percentage of the sample exceeded the cut-off for being at high risk for mania, a larger percentage exceeded the cut-off for risk of borderline personality disorder. This is not entirely surprising, however, as thresholds on these scales have been set somewhat differently by the original developers of the scales. That is, the HPS was set to identify the top 5% of the sample, while the MSI-BPD was designed to maximize sensitivity and specificity in relation to borderline diagnosis. In addition, some behaviors endorsed on the HPS may be developmentally appropriate and not actually reflect mania risk (e.g., "At social gatherings, I am usually the 'life of the party'"). Future research should examine whether affective traits, impulsivity and goal regulation can differentiate those diagnosed with bipolar disorder and borderline personality disorder, as well as those with family history of illness. A related limitation around the current indices of risk used is that the HPS measures lifetime symptoms and personality traits associated with risk for later development of mania, whereas the MSI-BPD may focus more on current clinical state. Our study also fails to consider negative emotionality within the context of bipolar depressive symptoms, as the HPS is narrowly focused on mania risk. Beyond the measures of psychopathology tendencies, many psychological risk factors not measured in the current study might help differentiate risk for mania and borderline personality disorder (e.g., attachment). The current study also relies on self-report measures, and it is likely that some correlations reported here are at least partly due to common method variance and response biases. In addition, the use of laboratory measures and brain imaging to capture affective dysregulation would bolster this line of research. Indeed, recent findings suggest differential patterns of functional connectivity between women with bipolar disorder and those with borderline personality disorder (Das et al., 2014), with increased connectivity within bipolar disorder, and decreased connectivity within borderline personality disorder relative to healthy controls.

Notwithstanding the limitations, current findings provide some indication that the diagnostic specificity of the increasingly influential reward sensitivity model; however, little controlled data are available concerning whether bipolar disorder can be distinguished from other conditions involving intensive affectivity on measures of elevations of reward sensitivity and goal pursuit (although see Fulford et al. (2008) for a comparison with risk for narcissism). If the findings of this study are supported among a diagnosed population using both laboratory and self-report measures, important clinical implications follow.

At the most fundamental level, confirmation of these findings in a clinical population may assist clinicians in more accurately differentiating between these disorders, which is a long-standing clinical problem (Ruggero et al., 2010). Without an accurate diagnosis, patients may receive inadequate treatment. While psychosocial treatments aimed at improving affect regulation (e.g., dialectical behavior therapy, cognitive behavioral therapy) are associated with positive outcomes in both bipolar disorder and borderline personality disorder, research in this area can move towards further refining the potential benefit of these treatments by honing in on disorder-specific affective dysregulation. Identifying factors that may help differentiate the two disorders will improve proper diagnosis and associated treatment.

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