Positive Emotional Traits and Ambitious Goals among People at Risk for Mania: The Need for Specificity

June Gruber and **Sheri L. Johnson**
University of California, Berkeley

University of Miami

Abstract

Recent psychosocial theories implicate disturbances in reward pursuit among individuals putatively at risk for mania. The present study examined associations of a measure of risk for mania (the Hypomanic Personality Scale; HPS) with both four trait positive emotions (joy, pride, compassion, and love) and ambitious life goals in five domains (fame, wealth, political influence, family, and friends) among 302 participants from two university settings. Findings indicated that higher HPS scores were related to reward (joy) and achievement-focused (pride) positive emotions, with weaker relations to prosocial (compassion, love) positive emotions. HPS scores were more robustly related to extrinsic (fame, politics) as compared to other-oriented (friends, family) ambitious life goals, with the exception of wealth. These effects were independent of current symptoms of mania and depression. Discussion focuses on the implications of elevated reward and achievement-related positive emotions and goals in understanding risk factors for mania.

Bipolar disorder is defined by the occurrence of a single episode of mania (American Psychiatric Association, 2000) and is associated with profound functional impairment (Coryell et al., 1993). It is ranked as the sixth leading cause of medical disability worldwide (Murray & Lopez, 1996). Bipolar disorder is also associated with a high suicide rate, with up to 19% of individuals committing suicide (e.g., Simpson & Jamison, 1999), a rate 12-15 times greater than the general population (e.g., Harris & Barraclough, 1997). Given the costs of bipolar disorder, a better understanding of mechanisms involved is crucial.

Traditional approaches towards understanding mechanisms underlying bipolar disorder tended to focus purely on biological factors. Indeed, bipolar disorder is one of the most heritable psychiatric disorders (McGuffin et al., 2003). Dysregulation in specific neurotransmitter systems, furthermore, are consistently evidenced among people with bipolar disorder. Biological variables, however, do not adequately predict the course of mood episodes. For example, even when patients received appropriate pharmacological treatment, up to 50% of patients with bipolar disorder relapse within one year (Keller et al., 1992). Thus, new models have been developed which integrate psychosocial and biological factors, and research findings have supported these psychosocial variables as predictors of symptom course in bipolar disorder (Miklowitz & Johnson, 2006).

One central psychosocial factor associated with increased risk for mania involves excessive pursuit of extrinsic rewards in one's environment (e.g., Johnson, 2005). For example, several studies have documented heightened sensitivity to reward as measured using the Behavioral

Address correspondence to June Gruber, Department of Psychology, University of California, Berkeley, 2205 Tolman Hall #1650, Berkeley, CA 94720-1650, june@berkeley.edu.

Activation Scale (BAS; Carver & White, 1994) among individuals with bipolar I disorder (Meyer, Johnson, & Winters, 2001; Salavert et al., 2007; but see Jones, Tai, Evershed, Knowles, Bentall, 2006, for a nonreplication), students with bipolar spectrum disorders (Alloy et al., 2006), and students at risk for mania (e.g., Meyer, Johnson, & Carver, 1999). Furthermore, scores on BAS subscales have been found to predict increases in manic symptoms among persons with bipolar I disorder (Meyer, Johnson, & Winters, 2001) and individuals with bipolar spectrum disorders (Alloy et al., 2008). Studies have found that BAS elevations can also be documented among persons at risk for mania, as measured using the Hypomanic Personality Scale (HPS; Eckblad & Chapman, 1986). Similarly, after success feedback, people at risk for mania have been found to exhibit increased self-confidence compared to healthy controls (Johnson, Ruggero, & Carver, 2005). People at risk for mania exhibit increased reactivity in response to positive stimuli relative to healthy controls across psychophysiological (Sutton & Johnson, 2002), cognitive (Johnson, Ruggero, & Carver, 2005), and neuroimaging (Lawrence et al., 2004) studies. Furthermore, heightened goal pursuit among persons diagnosed with bipolar disorder also has been found to predict increases in manic symptoms over a 4-month period (Lozano & Johnson, 2001).

In this paper, we examined two factors putatively related to increased reward pursuit in bipolar disorder; namely, dispositional positive emotion and ambitious goal setting. A central aim of this study was to examine how risk for mania relates to specific types of positive emotions and ambitious goals. We focused on whether a measure of risk for mania was associated with (1) elevations in positive emotions associated with achievement and reward as compared to prosocial, other-oriented positive emotions and (2) ambitious goals that are associated with extrinsic as compared to prosocial, other-oriented goals. To provide background for this study, we outline findings from both positive emotion traits and ambitious goals below.

POSITIVE EMOTIONAL TRAITS

Several studies suggest that people with bipolar disorder generally report higher global positive affect in their everyday lives than do those without the disorder (Bagby et al., 1996; Hofmann & Meyer, 2006; Lovejoy & Steuerwald, 1995). To date, however, we cannot identify a study that has more carefully examined specific dispositional affective patterns in bipolar disorder. Recent research by affective scientists stresses the importance of distinguishing among distinct classes of positive emotions in the study of emotion and psychopathology (e.g., Fredrickson, 1998; Shiota, Keltner, & John, 2006; Tracy & Robins, 2004). Specifically, this includes differentiating between positive emotions associated with the *pursuit of rewards* (e.g., joy), *achievement* (e.g., pride), and those that promote *prosocial attachment and connection* (e.g., love and compassion). Prior work suggests that love and compassion, but not pride and joy, are associated with prosocial personality dispositions such as Agreeableness (Shiota et al., 2006). These distinctions are important to consider given that risk for mania is associated with exaggerated positive emotional responses to rewards (e.g., Meyer et al., 2001). Given this, one might expect that dispositional elevations in positive emotion might be specific to reward and achievement-oriented emotions relative to prosocial emotions.

GOAL SETTING

Risk for mania has also been strongly associated with high levels of extrinsic goal setting (Johnson, 2005). For example, in a high school sample, risk for mania was strongly correlated with increased expectations for long-term scholastic and work success (Meyer & Krumm-Merabet, 2003). Johnson and Carver (2006) created a self-report scale to assess ambitious aspirations across a set of domains. In two validation studies, undergraduates at risk for mania endorsed highly ambitious aspirations in extrinsic domains, such as popular fame, political

influence, and wealth but not other-focused ambitious involving friends and family (Johnson & Carver, 2006).

SUMMARY AND PRESENT RESEARCH

In sum, risk for mania appears to be associated with increased reward pursuit. The present study was thus designed to assess whether risk for mania was associated with dispositional tendencies towards reward and achievement, but not prosocial other-focused, classes of dispositional positive emotion. We also wanted to replicate previous findings that risk for mania is associated with extrinsic goals relating to fame, wealth, and political influence, but not other-focused ambitious such as the well being of friends and family (Johnson, Eisner, & Carver, 2007). In evaluating dispositional positive emotions and ambitious life goals, we focused on trait-like risks for bipolar disorder, so conducted analyses controlling for current levels of depressive and manic symptoms. This enabled us to ensure any associations of mania risk with positive emotions and goal setting were independent of current symptom severity, thus potentially representing a trait-like correlate of risk.

METHOD

Participants and Procedures

Participants were 302 young adults (47.68% female) drawn from two university communities; namely, the University of California, Berkeley ($n = 95$) and the University of Miami ($n = 207$). All participants participated in the present study for partial fulfillment of a course requirement. At both sites participants were invited to a single session experiment where the experimenter greeted them and they completed informed consent procedures. Sessions lasted approximately 30 minutes. Berkeley participants were between the ages of 18 and 31 (Mean 19.97, $SD = 2.04$), with 25% female. Miami participants were within the same age range (Mean = 20.69, $SD = 1.32$), with 34.0% female. Information regarding which ethnic category participants most closely identified with was not collected.

Measures

Risk for Mania—We measured putative risk for mania using the Hypomanic Personality Scale (HPS; Eckblad & Chapman, 1986). The HPS consists of 48 true-false self-report items capturing episodic shifts in emotion, behavior, and energy. Sample items include: "I often feel excited and happy for no apparent reason," and "frequently find my thoughts are racing." The HPS has high internal consistency and excellent predictive validity for the onset of manic and hypomanic episodes. First, high scores on the HPS are correlated with DSM-IV diagnoses of bipolar disorder (e.g., Eckblad & Chapman, 1986) and current mania symptoms (Klein, Lewinsohn, & Seeley, 1996). These researchers found that twenty-five percent of undergraduates who scored above a high risk for mania actually qualified for a DSM-IV-TR diagnosis of bipolar disorder (Eckblad & Chapman, 1986). Second, Kwapil and colleagues (2000) demonstrated that participants who scored high on the HPS had an increased risk for the development of manic episodes (25% compared to 10%) at a 13-year follow-up assessment (Kwapil et al., 2000). The internal consistency of the HPS in the present study was α = .86 and the mean score was 18.76 (SD = 9.51). Given that risk for mania is relatively rare, we over-sampled individuals with high scores on the HPS (≥34). That is, those with high scores on the HPS were contacted individually in an effort to schedule them for the research study. This over-sampling of high HPS scorers was most apparent in our Berkeley sample. HPS mean scores for Berkeley was 21.34 ($SD = 11.60$), Miami was 17.57 ($SD = 8.14$) and the combined mean score across sites was 18.76 ($SD = 9.51$).

Current Depression Symptoms—Current symptoms of depression were assessed using the short form of the Beck Depression Inventory, Short Form (BDI; Beck & Beck, 1972), a widely used 13-item, self-report measure assessing current depressive symptoms assessing cognitive, affective, and somatic symptoms of depression with scores ranging from 13 to 52. The BDI has been demonstrated to have acceptable reliability and validity across clinical and nonclinical samples (Beck, Steer, & Garbin, 1988), high internal consistency, and robust correlations with other measures of depression (e.g., Gould, 1982). In the present study, the internal consistency of this measure was $\alpha = .90$ across samples. BDI mean scores for Berkeley was 19.21 ($SD = 5.70$), Miami was 15.82 ($SD = 3.23$) and the combined mean score across sites was 16.88 ($SD = 4.45$).

Current Mania Symptoms—Current symptoms of mania were assessed using the Altman Self-Rating Mania Scale (ASRM; Altman, Hedeker, Peterson, & Davis, 1997), a five-item self-report inventory with scores ranging from 5 to 25. Scale items include inflated self-confidence, talkativeness, heightened cheerfulness, reduced need for sleep, and excessive activity level. These items load onto a single component in factor analyses that is highly correlated with both clinical interview and self-report measures of mania (Altman, Hedeker, Peterson, & Davis, 2001). The ASRM effectively differentiates mania from other clinical disorders (Altman et al., 1997). The internal consistency of the measure in this sample was $\alpha = .77$. ASRM mean scores for Berkeley was 10.51 (3.37), Miami was 9.70 (SD = 3.82) and the combined mean score across sites was 9.95 (SD = 3.70).

Distinct Dispositional Positive Emotions—Dispositional, or trait, positive emotion experience was measured using the Dispositional Positive Emotion Scales (DPES; Shiota, Keltner, & John, 2006), a 38-item self-report instrument assessing seven distinct positive emotional traits including pride, joy, love, compassion, amusement, awe, contentment. DPES are rated along a 7-point scale from 1= strongly agree to 7 = strongly disagree with trait-like statements asking about their "typical day-to-day actions." Subscales have been shown to demonstrate acceptable validities, measuring related but distinct constructs, averaging $r = .44$, and demonstrate unique associations with the Big Five personality dimensions (Shiota et al., 2006). Given our interest in reward, achievement, and prosocial related emotional traits, we focused specifically on the joy, pride, love, and compassion DPES subscales. In the present study, all subscales demonstrated acceptable reliabilities, ranging from $\alpha = .72$ to $\alpha = 81$.

Goal Setting—The Willingly Approached Set of Seriously Unrealistic Plans (WASSUP; Johnson & Carver, 2006) was used to measure the tendency to set extremely ambitious life goals. The WASSUP is a thirty-item questionnaire with seven factor-analytically derived subscales tapping into unique types of aspirations: popular Fame (e.g., you will appear regularly on TV), idealized relations with Friends (e.g., everyone you know will love you), having an impact on World well-being (e.g., you will create world peace), Political influence (e.g., you will be important in political circles), idealized relations with Family (e.g., your relationship will be more romantic than Romeo and Juliet), Financial Success (e.g., you will have 20 million dollars or more), and Creative output (you will create a great work of art, music, or poetry). Participants are asked to rate the likelihood of each of the goal outcomes to occur, from 1 (no chance of occurring) to 5 (definitely will occur). Findings from Johnson and Carver further demonstrated that the WASSUP was not significantly associated with current manic symptoms. In the present study, we focused on 5 of the WASSUP subscales, 3 relating to extrinsic goals (fame, political influence, and wealth) and 2 relating to other-oriented goals (family, friends). All subscales demonstrated acceptable reliabilities, ranging from $\alpha = .74$ to $\alpha = .88$, with the exception of Politics ($\alpha = .60$) which was limited by the small number ($n = 2$) of subscale items.

Global Trait Affect—To ensure that findings were not better accounted for by global positive affect (PA) and were independent from negative affect (NA), we assessed global PA and NA using the Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988) to a subset of the total participants ($n = 95$). The PANAS is a 20-item self-report measure containing adjectives to assess NA and PA. Participants are instructed to indicate, to what extent you feel this in general for each adjective using a 5-point Likert scale (1 = very slightly or not at all; 5 = extremely). Reliabilities were acceptable for the NA ($\alpha = .89$) and PA ($\alpha = .87$) subscales.

RESULTS

Preliminary Analyses

Before conducting analyses of hypotheses, we first examined univariate distributions for all key variables. The HPS (Skewness statistic = .86, Standard error = .14), ASRM (Skewness statistic = .57, SE = .14) and BDI (Skewness statistic = 1.76, SE = .14) scales were positively skewed. This is consistent with expectations, in that few students would be expected to be at high risk for mania or exhibit clinically significant levels of both manic and depressive symptoms. Given that the distribution of these variables mirrored the expected population distribution and that correlational analyses are robust with respect to skew, we did not transform variables before conducting analyses.[1]

Second, we examined whether patterns of associations of measured risk for mania with outcome measures varied depending on the university. We did this in order to ensure that our findings generalized across the two recruitment sites. To do this, for each dependent variable we conducted a hierarchical regression model with Site (Berkeley or Miami) entered in step 1, risk for mania (HPS) entered in step 2, and an interaction term for HPS X Site in step 3. Results suggested an absence of any significant interaction between HPS X Site for all of our dependent measures and comparable patterns of associations between HPS and the dependent measures for both sites. Given this, subsequent analyses combined participants from both sites for ease of presentation.

Third, we examined correlations of DPES and WASSUP scales. As shown in Table 1, correlations of the DPES and WASSUP revealed that these subscales appeared to be indexing separable constructs with low correlations between DPES and WASSUP scale items.[2]

Fourth, we examined potential confounds of the HPS with affect and current symptoms. HPS was not correlated with either PA ($r = .10$, *ns*.) or NA ($r = −.14$, *ns*) from the PANAS administered to the Berkeley sample ($n = 95$). HPS demonstrated expected positive correlations with current manic, $r = .13$, $p < .05$ and current depressive symptoms, $r = .22$, $p < .01$. Z transformations (Meng, Rosenthal, & Rubin, 1992) indicated that HPS was not more strongly associated with depressive as compared to manic symptoms ($z = 1.78$, $p > .20$).

We also examined how the DPES and WASSUP were correlated with current symptoms. As evident in Table 2, current symptoms of mania were correlated with decreased pride, love, and compassion on the DPES and increased fame, friends, family, and wealth on the WASSUP. Current symptoms of depression were associated with decreased enthusiasm, pride, and compassion on the DPES but were not significantly related to any subscales of the WASSUP.

[1]We conducted parallel analyses with HPS dichotomized into high and low risk groups using previously recommended scale cutoffs (Eckblad & Chapman, 1986) and obtained similar results.
[2]We re-ran correlations between the DPES and WASSUP subscales controlling for HPS scores and obtained a similar pattern of findings.

Overview of Primary Analyses—As planned, Pearson's two-tailed correlational analyses of the relationship of risk for mania using the HPS to distinct positive emotional traits from the DPES and ambitious goal-setting types from the WASSUP were conducted. Although our primary analyses were partial correlations controlling for current manic and depressive symptom levels ($n = 302$), we examined bivariate correlations as a preliminary analysis.

Associations Between Mania Risk and Positive Emotional Traits—Before conducting partial correlations, we examined bivariate correlations were computed between the HPS and the four target DPES positive emotional trait subscales (pride, joy, love, and compassion). A Bonferroni correction was applied to correct for multiple comparisons (adjusted p-value for significance = .0125). As evident in Table 3, the HPS was significantly correlated with all the positive emotion subscales except for love.

More importantly, we computed partial correlations with current symptoms of mania and depression included as covariates. As seen in Table 3, the HPS was significantly correlated with all the positive emotion subscales. In general, the HPS was significantly associated with most of the positive emotion subscales independent of current symptoms.

A key goal of the present study was to examine whether the HPS was differentially related to reward and achievement-related, but not prosocial, dimensions of positive emotion. To do this, we used z transformations (Meng et al., 1992). To test whether the HPS was more strongly correlated with reward (joy) and achievement (pride) oriented emotions, we separately compared the strength of partial correlations of HPS with joy and pride to the partial correlations of HPS with love and compassion for a total of 4 comparisons. These analyses indicated that the HPS was more strongly associated with joy as compared to associations of HPS with love ($z = 2.70$, $p < .01$) or compassion ($z = 1.88$, $p < .05$). Similar to the pattern of findings with joy, pride was more strongly associated with HPS when compared specifically to prosocial emotions; namely, compared to love ($z = 2.62$, $p < .01$) and compassion ($z = 1.80$, $p < .05$). In sum, risk for mania was more strongly associated with reward (joy) and achievement (pride) oriented emotions compared to prosocial other-focused (compassion, love) classes of positive emotions.

Associations Between Mania Risk and Ambitious Goal Setting—As above, preliminary bivariate correlations were computed between HPS and the five WASSUP goal-setting subscales (fame, politics, wealth, family, friends). Again, a Bonferroni correction was applied to correct for multiple comparisons (adjusted p-value for significance = .01). As evident in Table 3, HPS was significantly correlated with all the WASSUP subscales except friends.

We computed partial correlations between the HPS with each of the five target WASSUP goal-setting subscales to account for the influence of current symptoms of mania and depression. The HPS was significantly correlated with all the goal-setting subscales except for friend- and family-focused striving as seen in Table 3. In sum, the HPS was significantly and positively associated with extrinsic goals relating to fame and politics but was not associated with other-focused goals including friends and family, regardless of whether current symptoms were controlled for.

A second key goal of the present study was to examine whether the HPS was differentially related to extrinsic (fame, politics, wealth) but not other-focused (family, friends) goals. We again used z transformations (Meng et al., 1992) to compare the strength of partial correlations of the HPS with fame, politics, and wealth to the partial correlations of the HPS with family and friends for a total of 6 comparisons. These analyses indicated that the HPS was more strongly associated with fame as compared to associations of HPS with family ($z = 3.27$, $p < .001$) and friends ($z = 2.41$, $p < .01$). Politics was more strongly associated with HPS than family

(z = 2.44, p < .01) and trended towards being more strongly associated than friends (z = 1.58, p = .057). However, HPS was not more strongly associated with wealth compared to both friends (z = 0.04, *ns*.) and family (z = 0.90, *ns*.). Overall, scores on the HPS were more strongly associated with extrinsic (fame, politics) as compared to other-focused (family, friends) goals, with the exception of the extrinsic goal of wealth.

DISCUSSION

The aim of this study was to examine how a measure of risk for mania (i.e., HPS) related to dispositional positive emotions and goal setting. Whereas previous studies to date have relied on global measures of PA (e.g., Lovejoy & Steuerwald, 1995; Myin-Germeys et al., 2003), this is the first study that we are aware of that examined associations between a measure of risk for mania and dispositional tendencies towards functionally distinct types of positive emotions. Although most relationships were moderate, scores on the HPS were more strongly correlated with the tendency to experience reward (joy) and achievement (pride) positive emotions and less so for prosocial emotions, such as love and compassion. On the WASSUP scale, the HPS robustly related to extrinsic goals for fame, political influence, and wealth, but was not correlated with other-focused goals regarding family or friends after controlling for current symptoms of mania and depression. In sum, across both DPES and WASSUP scales, the HPS tended to be related to extrinsic reward and achievement, compared to prosocial, positive emotions and goals. These patterns were consistent across sites and did not appear to be confounded by current symptom levels.

Before considering the implications of this study, it is important to note several limitations. First, our findings rely exclusively on undergraduate samples. On the one hand, the analog nature of this sample could diminish links with mania risk variables. On the other hand, the nature of goals and emotions may become less positive and intense over time with experiences of clinically severe mood episodes and their consequences. With respect to ambitious goal setting, prior work with clinically diagnosed bipolar samples has generated similar results (Johnson, Eisner, & Carver, 2007). However, there is a need for future studies to replicate our findings with respect to specific positive emotion profiles in clinically diagnosed samples. More research is also needed to understand how these basic patterns change with the severity of the sample and the course of the disorder. Second, beyond sample limitations, our cross-sectional design precludes ability to examine how positive emotions and ambitious life goals influence the course of disorder over time. Third, we did not collect demographic information regarding racial or ethnic composition of participants so it is unclear whether thee findings generalize across distinct racial or ethnic categories. Fourth, the present study relied exclusively on self-report measures of risk for mania, dispositional positive emotions, and ambitious goals and thus shared method variance may have artificially magnified correlations.

Despite these limitations, this study adds to a growing literature implicating psychosocial dimensions with risk for mania. A key goal was to assess the specificity of different domains of goals. Consistent with previous studies with at risk and clinically diagnosed, students at risk for mania endorsed significantly more goals related to fame and political influence than more other-oriented other goal domains. In contrast with previous research, however, we did not find that the association of goals for wealth and measured risk for mania was significantly stronger than associations with the other-focused goals of family and friends. Nonetheless, given that both fame and wealth represent different facets of extrinsic aspirations, we believe the difference in associations with wealth and mania risk do not detract from the bigger conceptual link between pursuit of extrinsic rewards and risk for mania.

Across both DPES and WASSUP scales, our findings suggest that putative risk for mania is associated with a tendency to focus on the pursuit of extrinsically-oriented rewards, and to

focus on pride and achievement-oriented positive emotions as compared to prosocial emotions and goals. Findings are consistent with recent models of bipolar disorder reflecting excessive social dominance and focus on elevated social rank (Gilbert, McEwan, Hay, Irons, & Cheung, 2007). Recent research has indicated that the pursuit of extrinsic goals is correlated with poor outcomes, such as deficits in self-esteem, diminished life satisfaction, and lower quality of relationships (Kasser & Ryan, 2001). Given this, a key goal will be to assess whether extrinsic goal striving contributes to emotional lability within people at risk for mania, and to understand how these forms of emotion, and goal setting predict *social functioning*.

The current study joins a growing literature that suggesting that models of mania originally modeled after those developed for depression (e.g., Beck, 1987; Blatt, Quinlau, Chrevon, McDonald, & Zuroff, 1982) may need to be modified for bipolar disorder (e.g., Johnson, 2005; Lam, 2004). Specifically, it was found that positive emotionality and ambitious goal settings are features associated with putative risk for mania (Gruber, Johnson, Oveis, & Keltner, 2008; Johnson, 2005). It will be important to examine specific aspects of positive emotionality and goal setting, and in particular, to focus on reward-related positive emotions and extrinsic goal pursuit. If these variables prospectively predict the severity of symptoms, such characteristics might be important targets for psychosocial interventions. Furthermore, it will be important to consider the role of these traits in treatment outcome. Work by Lam, Wright and Sham (2005) indicated that a hyper-positive sense of self predicted poorer cognitive behavioral treatment outcome. Future work is needed to tease apart whether overly positive emotional traits and goal setting might also interfere with the course of successful treatment.

Acknowledgments

REFERENCES

Alloy LB, Abramson LY, Walshaw PD, Cogswell A, Grandin LD, Hughes ME, et al. Behavioral approach system and behavioral inhibition system sensitivities and bipolar spectrum disorders: Prospective prediction of bipolar mood episodes. Bipolar Disorders 2008;10:310–322. [PubMed: 18271911]

Alloy LB, Abramson LY, Walshaw PD, Cogswell A, Smith JM, et al. Behavioral approach system (BAS) sensitivity and bipolar spectrum disorders: A retrospective and concurrent behavioral high-risk design. Motivation and Emotion 2006;30:143–145.

Altman EG, Hedeker D, Peterson JL, Davis JM. The altman self-rating mania scale. Biological Psychiatry 1997;42:948–955. [PubMed: 9359982]

Altman E, Hedeker D, Peterson JL, Davis JM. A comparison of three self-rating scales for acute mania. Biological Psychiatry 2001;50:468–471. [PubMed: 11566165]

American Psychiatric Association. Task Force on DSM-IV. Diagnostic and statistical manual of mental disorders: DSM-IV-TR. American Psychiatric Association; Washington, DC: 2000.

Bagby RM, Young LT, Schuller DR, Bindseil KD, et al. Bipolar disorder, unipolar depression and the five-factor model of personality. Journal of Affective Disorders 1996;41:25–32. [PubMed: 8938202]

Beck AT. Cognitive model of depression. Journal of Cognitive Psychotherapy 1987;1:2–27.

Beck AT, Beck RW. Screening depressed patients in a family practice: A rapid technique. Postgraduate Medicine 1972;52:81–85. [PubMed: 4635613]

Beck AT, Steer RA, Garbin MG. Psychometric properties of the Beck depression inventory: Twenty-five years of evaluation. Clinical Psychology Review 1988;8:77–100.

Blatt SJ, Quinlan DM, Chrevon ES, McDonald C, Zuroff D. Dependency and self-criticism: Psychological dimensions of depression. Journal of Consulting and Clinical Psychology 1982;50:113–124. [PubMed: 7056904]

Carver, CS.; Scheier, MF. On the self-regulation of behavior. Cambridge University Press; New York, NY: 1998.

Carver CS, White TL. Behavioral inhibition, behavioral activation, and affective responses to impending reward and punishment: The behavioral inhibition system and behavioral approach system scales. Journal of Personality and Social Psychology 1994;67:319–333.

Coryell W, Scheftner W, Keller M, Endicott J, Maser J, Klerman GL. The enduring psychological consequences of mania and depression. American Journal of Psychiatry 1993;150:720–727. [PubMed: 8480816]

Eckblad M, Chapman LJ. Development and validation of a scale for hypomanic personality. Journal of Abnormal Psychology 1986;95:214–222. [PubMed: 3745642]

Fredrickson BL. What good are positive emotions? Review of General Psychology 1998;2:300–319.

Gilbert P, McEwan K, Hay J, Irons C, Cheung M. Social rank and attachment in people with a bipolar disorder. Clinical Psychology and Psychotherapy 2007;14:48–53.

Gould J. A psychometric investigation of the standard and short form Beck depression inventory. Psychological Reports 1982;51:1167–1170. [PubMed: 7167614]

Gruber J, Johnson SL, Oveis C, Keltner D. Risk for mania and positive emotional responding: Too much of a good thing? Emotion 2008;8:23–33. [PubMed: 18266513]

Harris EC, Barraclough B. Suicide as an outcome for mental disorders: a meta-analysis. British Journal of Psychiatry 1997;170:205–208. [PubMed: 9229027]

Hofmann BU, Meyer TD. Mood fluctuations in people putatively at risk for bipolar disorders. British Journal of Clinical Psychology 2006;45:105–110. [PubMed: 16480569]

Johnson SL. Mania and dysregulation in goal pursuit: A review. Clinical Psychology Review 2005;25:241–262. [PubMed: 15642648]

Johnson SL, Carver C. Extreme goal-setting and vulnerability to mania among undiagnosed young adults. Cognitive Therapy and Research 2006;30:377–395. [PubMed: 20198117]

Johnson, SL.; Eisner, L.; Carver, C. Unrealistic goal setting among persons diagnosed with bipolar disorders. 2007. Manuscript submitted for publication

Johnson SL, Ruggero CJ, Carver CS. Cognitive, behavioral, and affective responses to reward: Links with hypomanic symptoms. Journal of Social and Clinical Psychology 2005;24:894–906.

Jones SH, Tai S, Evershed K, Knowles R, Bentall R. Early detection of bipolar disorder: A pilot familial high-risk study of parents with bipolar disorder and their adolescent children. Bipolar Disorders 2006;8:362–363. [PubMed: 16879137]

Kasser, T.; Ryan, RM. Be careful what you wish for: Optimal functioning and the relative attainment of intrinsic and extrinsic goals. In: Schmuck, P.; Sheldon, KM., editors. Life goals and well-being: Towards a positive psychology of human striving. Hogrefe & Huber Publishers; Ashland, OH: 2001. p. 116-131.2001

Keller MB, Lavori PW, Kane JM, Gelenberg AJ, et al. Subsyndromal symptoms in bipolar disorder: A comparison of standard and low serum levels of lithium. Archives of General Psychiatry 1992;49:371–376. [PubMed: 1586272]

Kessler RC, Walters EE, Forthofer MS. The social consequences of psychiatric disorders, III: Probability of marital stability. American Journal of Psychiatry 1998;155:1092–1096. [PubMed: 9699699]

Klein DN, Lewinsohn PM, Seeley JR. Hypomanic personality traits in a community sample of adolescents. Journal of Affective Disorders 1996;38:135–143. [PubMed: 8791182]

Kwapil TR, Miller MB, Zinser MC, Chapman LJ, Chapman J, Eckblad M. A longitudinal study of high scorers on the hypomanic personality scale. Journal of Abnormal Psychology 2000;109:222–226. [PubMed: 10895560]

Lam DH. Dysfunctional assumptions in bipolar disorder. Journal of Affective Disorders 2004;79:193–199. [PubMed: 15023494]

Lam DH, Wright K, Sham P. Sense of hyper-positive self and response to cognitive therapy for bipolar disorder. Psychological Medicine 2005;35:69–77. [PubMed: 15842030]

Lawrence NS, Williams AM, Surguladze S, Giampietro V, Brammer MJ, Andrew C, et al. Subcortical and ventral prefrontal cortical neural responses to facial expressions distinguish patients with bipolar disorder and major depression. Biological Psychiatry 2004;55:578–587. [PubMed: 15013826]

Lovejoy MC, Steuerwald BL. Sub-syndromal unipolar and bipolar disorders: Comparisons on positive and negative affect. Journal Abnormal Psychology 1995;104:381–4.

Lozano B, Johnson SL. Can personality traits predict increases in manic and depressive symptoms? Journal of Affective Disorders 2001;63:103–111. [PubMed: 11246086]

McGuffin P, Rijsdijk F, Andrew M, Sham P, Katz R, Cardno A. The heritability of bipolar affective disorder and the genetic relationship to unipolar depression. Archives of General Psychiatry 2003;60:497–502. [PubMed: 12742871]

Meng X, Rosenthal R, Rubin DB. Comparing correlated correlation coefficients. Psychological Bulletin 1992;111:172–175.

Meyer B, Beevers CG, Johnson SL. Goal appraisals and vulnerability to bipolar disorder: A personal projects analysis. Cognitive Therapy and Research 2004;28:173–182.

Meyer B, Johnson SL, Carver CS. Exploring behavioral activation and inhibition sensitivities among college students at risk for bipolar spectrum symptomatology. Journal of Psychopathology and Behavioral Assessment 1999;23:133–143.

Meyer B, Johnson SL, Winters R. Responsiveness to threat and incentive in bipolar disorder: Relations of the BIS/BAS scales with symptoms. Psychopathology and Behavioral Assessment 2001;23:133–143.

Meyer T, Krumm-Merabet C. Academic performance and expectations for the future of people putatively at risk for bipolar disorders. Personality and Individual Differences 2003;35:785–796.

Miklowitz DJ, Johnson SL. The psychopathology and treatment of bipolar disorder. Annual Review of Clinical Psychology 2006;2:1–3.

Murray, CJL.; Lopez, AD. The global burden of disease: A comprehensive assessment of mortality and disability from diseases, injuries, and risk factors in 1990 and projected to 2020. Harvard University Press; Boston, MA: 1996.

Myin-Germeys I, Peeters F, Havermans R, Nicolson NA, deVries MW, Delespaul P, et al. Emotional reactivity to daily life stress in psychosis and affective disorder: An experience sampling study. Acta Psychiatrica Scandinavica 2003;107:124–131. [PubMed: 12534438]

Salavert J, Caseras X, Torrubia R, Furest S, Arranz B, Duenas R, San L. The functioning of the behavioral activation and inhibition systems in bipolar I euthymic patients and its influence in subsequent episodes over an eighteen-month period. Personality and Individual Differences 2007;42:1323–1331.

Shiota MN, Keltner D, John OP. Positive emotion dispositions differentially associated with big five personality and attachment style. Journal of Positive Psychology 2006;1:61–71.

Simpson SG, Jamison KR. The risk of suicide in patients with bipolar disorders. Journal of Clinical Psychiatry 1999;60:53–56. [PubMed: 10073388]

Sutton SK, Johnson SL. Hypomanic tendencies predict lower startle magnitudes during pleasant pictures. Psychophysiology 2002;39:S80.

Tracy JL, Robins RW. Show your pride: Evidence for a discrete emotion expression. Psychological Science 2004;15:194–197. [PubMed: 15016291]

Watson D, Clark LA, Tellegen A. Development and validation of brief measures of positive and negative affect: The PANAS scales. Journal of Personality and Social Psychology 1988;54:1063–1070. [PubMed: 3397865]

Yurgelun-Todd DA, Gruber SA, Kanayama G, Killgore WDS, Baird AA, Young AD. fMRI during affect discrimination in bipolar affective disorder. Bipolar Disorders 2000;2:237–248. [PubMed: 11249801]

TABLE 1

Associations between Dispositional Positive Emotion Scale (DPES) and Goal-setting (WASSUP) subscales (N = 302 unless otherwise noted).

	Fame	Wealth	Politics	Friends	Family
Joy	.05	−.06	.07	.15[*]	.10
Pride	−.01	−.04	.08	.10	.08
Love	−.12[*]	−.14[*]	−.05	.17[**]	.05
Compassion	−.12[*]	−.22[*]	.01	.03	.13[*]

[*]
Note. $p < .05$.

[**]
$p < .01$.

[***]
$p < .001$.

TABLE 2

Associations between Current Symptoms and Risk for mania (HPS), Dispositional Positive Emotion Scale (DPES), and Goal-setting (WASSUP) subscales (N = 302 unless otherwise noted).

	Depression Symptoms	Manic Symptoms
Risk of mania		
HPS	.22[***]	.13[*]
DPES Subscales		
Joy	−.12[*]	−.06
Pride	−.13[*]	−.18[**]
Love	−.03	−.22[***]
Compassion	.33[**]	−.28[***]
WASSUP Subscales		
Fame	−.01	.14[*]
Politics	−.01	.14[*]
Wealth	−.07	.18[**]
Friends	−.07	.26[**]
Family	−.06	.17[*]

[*]
Note. $p < .05$.

[**]
$p < .01$.

[***]
$p < .001$

TABLE 3

Associations of Risk for bipolar disorder (HPS) with Positive Emotional Traits (DPES) and Ambitious Goal-Setting (WASSUP) (N = 302 unless otherwise noted).

	Bivariate Correlations	Partial Correlations
DPES Subscales		
Joy	.33[*]	.40[*]
Pride	.29[*]	.39[*]
Love	.12	.18[*]
Compassion	.26[*]	.25[*]
WASSUP Subscales		
Fame	.34[*]	.33[*]
Politics	.25[*]	.26[*]
Wealth	.16[*]	.15[*]
Friends	.17[*]	.14
Family	.10	.08

[*] *Note*. Significant after applying Bonferroni correction (adjusted p-value for significance = .0125 for DPES correlations and adjusted *p*-value = .01 for WASSUP correlations). Partial correlations include current symptoms of mania and depression as covariates.