Positive and negative appraisals of the consequences of activated states uniquely relate to symptoms of hypomania and depression

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BRIEF REPORT

Positive and negative appraisals of the consequences of activated states uniquely relate to symptoms of hypomania and depression

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Individuals may appraise internal states positively or negatively. Positive appraisals involve desiring or pursuing the state or experience, while negative appraisals involve dreading or avoiding the experience. The extent to which individuals make extreme positive or negative appraisals of high, activated, energetic states might determine whether they experience symptoms of high or low mood. This study extends the existing literature by considering the role of opposing appraisals and beliefs about the same internal states and by controlling for the potential correlation between depression and activation symptoms. Extreme, positive and negative appraisals of activated mood states related distinctly to experiences of activation and depression symptoms respectively, in an analogue sample \((n = 323)\). Positive appraisals of activated internal states were uniquely associated with elevated activation and hypomania symptoms. Negative appraisals of the same states were uniquely associated with elevated depression symptoms. Opposing appraisals of internal states may underlie mood swing symptoms.

Keywords: Appraisals; Internal states; Mood swings; Activation; Depression; Emotion regulation.

Within bipolar disorder (BD), different factors may underlie symptoms of mania and depression (Carver & Johnson, 2009). The beliefs individuals hold about different mood states and the way individuals appraise different mood states may be particularly relevant (Jones, 2001; Mansell, Morrison, Reid, Lowens, & Tai, 2007). For example, internal states such as feeling high and energised or feeling low and lacking energy can be interpreted in extreme or personalised ways. A person might appraise mood states as signalling something extremely positive or negative.
about them as a person. For example, feeling “sped up” might be interpreted as signalling extreme intelligence (e.g., Jones, 2001). Alternatively, someone may believe that mood states are useful to experience because they help them achieve important goals. For example, a person might believe they need to feel high to be productive at work. Or, an individual may think that experiencing certain moods or states will lead to positive or negative consequences. For example, they may think feeling low in energy means they are going to spiral into depression.

Thus, extreme positive or negative appraisals about moods and internal states may be especially important in determining symptoms of mania or hypomania and depression, as these may influence the way individuals attempt to regulate their emotions, which may in turn influence mood symptoms. Consequently, individuals who appraise activated states as extremely positive may strive to experience more of these moods and internal states, leading their mood to escalate towards mania. However, if individuals appraise the same states as extremely negative, they may strive to avoid these states, and dampen any experiences of these moods as they arise, driving their mood downwards into depression (Mansell et al., 2007).

Recent research attempting to delineate mania and depression has explored the role of related concepts in BD, including self-appraisals (Jones & Day, 2008; Jones, Mansell, & Waller, 2006), emotion-regulation strategies (Carver & Johnson, 2009; Feldman, Joormann, & Johnson, 2008), and beliefs about success and failure (Eisner, Johnson, & Carver, 2008). Research into appraisals of internal states is yet to delineate mania and depression. There is evidence from research using the Hypomanic and Positive Predictions Inventory (HAPPI) of a combination of extreme positive and negative appraisals of different high-activation and low-activation states in BD and hypomania (Mansell, 2006; Mansell, Rigby, Tai, & Lowe, 2008). These appraisals have also been found to differentiate individuals with bipolar disorder from individuals with unipolar depression (Alatiq, Crane, Williams, & Goodwin, 2010; Mansell et al., 2011). Mansell (2006) proposed that each set of appraisals is associated with specific symptom clusters. However, research has still to test this possibility directly.

Previous studies into appraisals of mood or internal states in hypomania and depression have focused on positive appraisals of activated mood states in isolation (e.g., Jones & Day, 2008); no research has explicitly compared positive and negative appraisals about the same mood states. The failure to consider and control for the effects of negative appraisals of activated states is problematic, as positive and negative appraisals of activated states are correlated (Mansell et al., 2008), and thus any associations found between positive appraisals of these states and mood symptoms may be attributable to negative appraisals. This research addresses this limitation of the existing literature.

This study was conducted using an analogue sample experiencing a range of hypomania or activation and depression symptoms, which represent an analogue of the two primary clusters of symptoms experienced by individuals with bipolar disorder (Angst, 1998). Researchers have advocated the use of analogue samples in BD research (Depue et al., 1981). We were interested in whether different appraisals of the same states might relate to different mood symptoms, and so we focused on extreme positive and negative appraisals of one type of internal state; activation, involving high energy or high mood experiences. We hypothesised that positive appraisals of these states would be uniquely associated with the experience of symptoms of analogue hypomania and activation, while negative appraisals of the same states would be uniquely associated with depression.

METHOD

Participants and procedure

A sample of 323 undergraduate students (282 female) participated in this study (M = 19.82, SD = 2.82). Participants completed all measures as part of wider research projects reported
Materials

Symptoms and experiences of high and low mood were assessed using the activation and depression subscales of the Internal States Scale (ISS; Bauer et al., 1991). Each item refers to a symptom of high or low mood, and participants rated how much they had experienced the symptom in the last 24 hours, from “not at all/rarely” to “very much so/much of the time”. The activation subscale assesses current symptoms of hypomania and a heightened sense of behavioural and cognitive activation, e.g., “I feel overactive”, and “My thoughts are going fast”. The depression subscale assesses current depressive symptoms, e.g., “I feel depressed” and “It seems like nothing will ever work out for me”. Internal consistencies for all ISS subscales are excellent, with Cronbach’s alpha coefficients from .81 to .92. Activation and depression scores are significantly higher in manic and depressed patients respectively, and scores on the measure correlate with clinician symptom ratings (Bauer et al., 1991; Bauer, Vojta, Kinosian, Altshuler, & Glick, 2000). Discriminant function analysis allocated 88% of patients to the correct diagnostic groups (Bauer et al., 1991). The measure is commonly used in research into bipolar disorder and bipolar vulnerability (e.g., Dodd et al., 2010; Jones & Day, 2008; Mansell et al., 2008).

Individuals’ appraisals of and beliefs about high, activated, internal states were assessed using items specifically selected from the Hypomanic Attitudes and Positive Predictions Inventory (HAPPI-50; Mansell, 2006). The original HAPPI scale is a 50-item questionnaire measure of a range of positive and negative beliefs about different internal states, for example, “When I feel agitated and restless it means that I am about to have a breakdown”. Items are rated by intersecting a line between 0% (“Don’t believe this at all”) to 100% (“Believe this completely”). The items do not assess individuals’ current experiences of different mood states, but rather assess individuals’ beliefs and appraisals about different mood states whether or not they are currently experiencing those states, as observed by Alatiq et al. (2010). This is why the items are preceded by statements such as “When I feel… “, “When I am more active… “, etc. There is evidence to suggest that the appraisals measured by the HAPPI confer cognitive risk for mood symptoms and mood swings and are not part of the phenomenology of mood swings, as the HAPPI scale prospectively predicts bipolar disorder symptoms in a month’s time, even when controlling for baseline symptoms (Dodd, Mansell, Morrison, & Tai, 2011).

In order to directly compare positive and negative appraisals about activated internal states, these items were specifically selected from the HAPPI scale. Three independent raters categorised each of the HAPPI-50 items as either positive appraisals about activated mood states, negative appraisals about activated mood states, or neither. The agreement between the raters who categorised the HAPPI items was significant and very high, $\kappa_{gen} = .79$, $SE_{Fleiss} = 0.07$, $p < .001$, $CI_{lower} = .65$, $CI_{upper} = .92$. We took the conservative approach of using only the items upon which all three raters agreed (see Table 1). Internal consistency was $\alpha = .85$ for the positive appraisals items and $\alpha = .80$ for the negative items.

RESULTS

Correlations between the symptom clusters and the individual HAPPI appraisal items are reported in Table 2.

We conducted two, two-step hierarchical multiple regression analyses, respectively with outcome variables representing symptoms of activation (Regression 1) and depression (Regression 2). In both regression analyses, the other symptom cluster was included as a covariate in Step 1, in order to establish whether any effects of the different types of appraisals of internal states were unique to activation or depression and not due to correlations...
between activation and depression. In addition, gender was included as a covariate, as gender differences in depression in particular have been observed in previous research (e.g., Piccinelli & Wilkinson, 2000). The total scores on the positive appraisals items and the negative appraisals items were then entered in Step 2.

Regression 1 predicted activation symptoms. In Step 1, depression symptoms and gender were entered resulting in a significant model, $F(2, 322) = 11.07, p < .001$. Depression symptoms significantly predicted activation symptoms ($\beta = 0.24, p < .001$) whereas gender did not ($\beta = 0.06, p = .25$). In Step 2, positive and negative appraisals were added resulting in a model which was significant and significantly improved fit, $F(4, 322) = 16.53, p < .001$, $\Delta R^2 = .11, p < .001$. Positive appraisals were a significant predictor; individuals who scored more highly on the positive appraisals factor ($\beta = 0.30, p < .001$) had significantly elevated activation symptoms. In contrast negative appraisals were not a significant predictor ($\beta = 0.10, p = .19$).

Regression 2 predicted depression symptoms. In Step 1, activation symptoms and gender were entered resulting in a significant model, $F(2, 322) = 10.60, p < .001$. Activation symptoms significantly predicted depression symptoms ($\beta = 0.25, p < .001$), while gender did not ($\beta = 0.04, p = .50$). In Step 2, positive and negative appraisals were added, resulting in a significantly improved model, $F(5, 321) = 28.33, p < .001, \Delta R^2 = .24, p < .001$. Negative appraisals

<table>
<thead>
<tr>
<th>HAPPI-50 item</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>When I feel good, I am sure that everything will work out perfectly</td>
<td>Positive appraisals</td>
</tr>
<tr>
<td>When I get excited about something I have no control over my thoughts</td>
<td>Negative appraisals</td>
</tr>
<tr>
<td>When I feel excited, my fears and worries are no longer real</td>
<td>Positive appraisals</td>
</tr>
<tr>
<td>When my energy levels increase, I can bring about a large rise in my social status</td>
<td>Positive appraisals</td>
</tr>
<tr>
<td>When I feel agitated and restless it means that I am about to have a breakdown</td>
<td>Negative appraisals</td>
</tr>
<tr>
<td>When I feel full of energy I am extremely funny and witty</td>
<td>Positive appraisals</td>
</tr>
<tr>
<td>When I get very agitated about something, I have no control over my behaviour</td>
<td>Negative appraisals</td>
</tr>
<tr>
<td>I have all my best ideas when I feel extremely good about myself</td>
<td>Positive appraisals</td>
</tr>
<tr>
<td>When I have a lot of energy, I don’t need support from anyone or anything</td>
<td>Positive appraisals</td>
</tr>
<tr>
<td>When I feel restless, the world becomes full of unlimited opportunities for me</td>
<td>Positive appraisals</td>
</tr>
<tr>
<td>Unless I am active all the time, I will end up a failure</td>
<td>Positive appraisals</td>
</tr>
<tr>
<td>The better I feel about myself, the worse other people react towards me</td>
<td>Negative appraisals</td>
</tr>
<tr>
<td>When I feel more active I realise that I am a very important person</td>
<td>Positive appraisals</td>
</tr>
<tr>
<td>When I feel good about myself, I realise that all my previous anxieties and fears are unfounded</td>
<td>Positive appraisals</td>
</tr>
<tr>
<td>When I feel really good, people don’t understand me</td>
<td>Negative appraisals</td>
</tr>
<tr>
<td>When I feel excited I know that other people desire me</td>
<td>Positive appraisals</td>
</tr>
<tr>
<td>When I feel good, I know that whatever I do, I could do no wrong</td>
<td>Positive appraisals</td>
</tr>
<tr>
<td>Doing anything very active can lead me to have a breakdown</td>
<td>Negative appraisals</td>
</tr>
<tr>
<td>When I am more active than usual, other people dislike me</td>
<td>Negative appraisals</td>
</tr>
<tr>
<td>When I feel good, I must keep “on the go” all the time or things will fall apart around me</td>
<td>Positive appraisals</td>
</tr>
</tbody>
</table>

Table 2. Correlations between total scores on appraisal and mood subscales

<table>
<thead>
<tr>
<th>Positive appraisals</th>
<th>Negative appraisals</th>
<th>Depression symptoms</th>
<th>Activation symptoms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive appraisals</td>
<td>1</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Negative appraisals</td>
<td>.58**</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>Depression symptoms</td>
<td>.25**</td>
<td>.53**</td>
<td>1</td>
</tr>
<tr>
<td>Activation symptoms</td>
<td>.37**</td>
<td>.33**</td>
<td>.25**</td>
</tr>
</tbody>
</table>

Note: **$p < .01$. 
were a significant predictor; individuals who endorsed more negative appraisals of activated states \((\beta = 0.57, p < .001)\) had significantly elevated depression symptoms. There was also a trend for individuals who endorsed fewer positive appraisals of activated states to report more depression symptoms \((\beta = -0.12, p = .05)\). However, this trend did not reach significance at the conventional cut-off \((p < .05)\), despite the relatively high power of the analysis \((\text{power } \alpha < .80 \text{ to detect effects of } r = 0.16)\). Further, this association between positive appraisals of activated states and depression \((r^2 = .014)\) was over twenty times smaller than the association between negative appraisals and depression \((r^2 = .32)\), indicating that the former relationship is of less substantive importance.

**DISCUSSION**

In this research, individuals who tended to appraise activated and energetic internal states in extremely positive ways experienced elevated activation or hypomania symptoms. Individuals who tended to appraise the same states in extremely negative ways experienced elevated depression symptoms. This suggests that depression and activation symptoms are associated with distinct sets of cognitions about mood.

These findings are in line with related research. For example, Carver and Johnson (2009) found responses to positive and negative stimuli and emotions differed between depression and mania; in mania a tendency to up-regulate positive emotions was observed, while in depression the opposite tendency was seen. Johnson and Fingerhut (2004) found negative cognitions generally to predict depression but not mania. Eisner et al. (2008) found that while responses to success were associated with mania, responses to failure were associated with depression. Finally, Feldman et al. (2008) found attempts to dampen positive affect characterised depression, while positive rumination about positive affect characterised mania. Thus, the findings of the present study converge with other research suggesting dissociation between the two types of mood symptoms.

The findings for activation symptoms are consistent with the models of hypomania and mania proposed by Jones (2001) and Johnson (2005). Jones (2001) proposed that circadian rhythm disruption and other events can trigger certain internal states, and extreme, personalised and positive appraisals of these states can lead to symptoms of mania. In this study these kinds of appraisals did relate to analogue hypomania and activation symptoms. Johnson (2005) proposed that the way positive life events such as goal-attainment are appraised is significant, a proposal supported by this study, as a number of the positive appraisals of activated states assessed in this research relate to concepts such as success and goal attainment.

However, the present research investigated both analogue hypomania or activation symptoms and analogue depression symptoms, and as such the findings of this research are perhaps best explained by an integrative-cognitive model of mood swings (Mansell et al., 2007). This model proposes that the combination of extreme positive and extreme negative beliefs and appraisals about different mood states drives mood swing symptoms of hypomania, mania or depression, as individuals engage in conflicting attempts to up-regulate and down-regulate their moods based on these conflicting appraisals (Mansell et al., 2007). It follows that positive appraisals of activated states, for example that they signal imminent success, would relate to symptoms of high mood, while negative appraisals of the same states, for example that they signal imminent catastrophe or a breakdown, would relate to low mood. The findings of this study support this theory.

While the present research was cross-sectional in its design and so causality cannot be established, research utilising the HAPPI scale has found that appraisals of internal states prospectively predict mood swing symptoms (e.g., Dodd et al., 2011). Further, there is evidence that individuals with depression and mania respond differently to positive affect states, engaging in opposing emotion-regulation strategies (Feldman...
et al., 2008). We contend that mood symptoms may result from emotion-regulation attempts, which are driven by extreme appraisals of internal states.

Thus, individuals who appraise high, energetic internal states as signalling something extremely positive are likely to strive to attain or maintain these experiences by engaging in emotion-regulation attempts that serve to maintain or escalate their mood, resulting in more activation and less depression (Mansell et al., 2007). Further, the manic-defence hypothesis (e.g., Abraham, 1911) would suggest that individuals may identify these experiences of extreme activation and high mood as ways of alleviating or avoiding depression, which could further escalate their mood. However, individuals who appraise highly activated states as signalling something extremely negative may be more likely to try to down-regulate their moods, in an attempt to avoid the perceived negative consequences of these states, resulting in experiences of low mood and depression (Mansell et al., 2007). Once depressed, individuals who appraise high moods extremely negatively may also be likely to dampen positive moods as they arise. This is in line with existing literature on depression and may help explain why depression can persist; individuals with depression and low self-esteem dampen positive moods (J. V. Wood, Heimpel, & Michela, 2003). Indeed, even individuals recovering from depression actively avoid positive emotional experiences (Hayes & Feldman, 2004). In this sense, positive appraisals of activated mood states may be protective for depression.

Given that extreme appraisals of mood states prospectively predict experiences of extreme mood and are not merely correlates of consequences of mood (Dodd et al., 2011), it is possible that other personality or trait variables might underlie the tendency to appraise mood states in either positive or negative ways. For example, dyssregulation of the behavioural activation system (BAS; Gray, 1987) and resulting sensitivity to reward or success and risk or threat (e.g., Depue & Iacono, 1989; Eisner et al., 2008) might render individuals more likely to make reward-related (positive) or risk-related (negative) appraisals of activated internal states, which in turn influence mood. Dodd et al. (2010) found that while BAS dysregulation correlated with activation symptoms at 3-month follow-up, when controlling for Time 1 mood and appraisals of internal states (as measured by the HAPPI), only appraisals of internal states predicted symptoms of activation. Thus, BAS dysregulation may affect mood indirectly, via its impact on appraisals.

This study highlights the methodological importance of partialling out depression symptoms when predicting activation or hypomania, and vice versa. Researchers should consider controlling for mania and depression symptoms, respectively, when investigating predictors or correlates of depression and mania. In this study, this was particularly important because activation and depression symptoms were correlated. Further, researchers interested in the importance of appraisals of internal states in hypomania and mania should ideally assess both positive and negative appraisals of activated states. This is in line with A. M. Wood and Tarrier (2010), who argued that it is important to place an equally weighted focus on both the positive and negative aspects of life when conducting clinical research and practice, partially as they are unlikely to be independent. In future, researchers could also compare positive and negative appraisals of depressed states.

A limitation of this study was the gender imbalance of the sample, which was predominantly female. This may explain why in this study there was no gender difference in symptoms of depression. The present study utilised an analogue sample. However, the correlation between activation and depression in this study suggests at least some of the individuals in this sample were experiencing both high and low mood, indicating the presence of genuine vulnerability to BD and mood swings in this analogue sample. Further, a recent study has shown that the interaction between positive and negative appraisals differentiates individuals with BD from individuals with unipolar depression and non-clinical controls; positive appraisals of activated states predicted BD when individuals also endorsed.
negative appraisals of the same states (Kelly, Mansell, Wood, Alatiq, Dodd, & Searson, 2011). This supports the suggestion that opposing appraisals of the same states might underlie mood swings. Further research replicating these findings would be welcome.

The finding that different sets of extreme appraisals of internal states are associated with activation and depression has implications for the understanding of BD. Given that bipolar disorders are characterised by both activation and depression, this suggests that individuals with BD may appraise activated states in multiple and potentially conflicting ways, and may experience conflict over whether to strive to avoid or attain these states. This conflict may cause and maintain distressing mood swing symptoms in BD. Future research could explore whether appraisals of internal states are particularly important in predicting the escalation into mania, or investigate whether over time different appraisals of mood states are salient and if changes in appraisals predict oscillations of mood. This is important, as appraisals of mood states are likely to precede and cause emotion-regulation attempts and responses (Mansell et al., 2007).

Appraisals of internal states might represent useful targets for change in psychological therapy for bipolar disorder. Mansell et al. (2007) described a range of cognitive and cognitive-experiential therapeutic techniques based on the integrative-cognitive model. For example, they suggest that therapists could encourage clients to explore the “pros” and “cons” of high and low mood states, consider the origins of the client’s beliefs about different internal states, and help the client to question these beliefs. They also suggest that behavioural experiments might be useful; therapists could encourage clients to experience internal states without trying to control or change them, in order to test out their beliefs about the consequences of these internal states. There is emerging evidence indicating that this approach to therapy for BD is effective (e.g., Searson, Mansell, Tai, & Lowens, 2009).

The present study supports the key principles of an integrative cognitive model of mood swings (Mansell et al., 2007). Research is now needed to establish the causal influence of appraisals on emotion-regulation efforts and of emotion regulation on mood symptoms and to further test the effectiveness of the therapeutic approach based on the model.

REFERENCES


