

## Original Article

# Depressive personality styles and bipolar spectrum disorders: prospective tests of the event congruency hypothesis

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**Objectives:** Research on unipolar depression has found that life events that are congruent with an individual's personality style increase vulnerability to depression (event congruency hypothesis). We tested whether the interaction of personality style and congruent life events predicted prospective increases in depressive and hypomanic symptoms among bipolar spectrum individuals over a 4-month follow-up.

**Methods:** We followed 106 bipolar II or cyclothymic individuals prospectively for 4 months. Participants completed three measures of personality style at time 1 and a life event scale and semi-structured life events and diagnostic interviews at follow-up. Life events were coded as congruent or non-congruent with the personality styles.

**Results:** A personality style characterized by self-criticism and performance evaluation interacted with congruent negative and positive events, respectively, to predict increases in depressive and hypomanic symptoms, respectively, over the 4 months. In contrast, an attachment-oriented personality style buffered against depression following congruent negative events.

**Conclusion:** Consistent with the event congruency hypothesis, a personality style focused on performance, high self-standards, and self-criticism may increase vulnerability to both depressive and hypomanic symptoms when bipolar individuals confront life events congruent with this style. In contrast, a personality style concerned with attachment to others may buffer against depression when bipolar individuals face congruent negative events.

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Like the disorder itself, research and theory on bipolar disorder has swung back and forth like a pendulum between the psychological and biological ends of the spectrum. Although early clinical reports emphasized the psychosocial context of the illness (1), the successful use of lithium to treat individuals with bipolar disorder began to shift the

focus to the disorder's biological underpinnings. More recently, as limitations of the prophylactic effects of lithium have become recognized, the pendulum has begun to shift back again toward the inclusion of psychosocial factors in bipolarity research and newer studies (2) have integrated biological and psychosocial approaches.

One area of recent psychosocial exploration has been the study of personality in bipolar disorder, in particular, personality styles that were originally developed and tested in relation to unipolar depression. Given substantial evidence that life

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events precede both depressive and manic/hypomanic episodes of bipolar individuals (for reviews, see 3–5), there has been much interest in exploring cognitive and personality vulnerabilities featured in theories of unipolar depression that may combine with life events to more precisely predict the timing, polarity, and severity of bipolar episodes (for review, see 3, 6). Specifically, Beck's (7) sociotropy and autonomy and Blatt et al.'s (8) dependency and self-criticism (9–12) personality styles have begun to be examined among bipolar individuals. Individuals with these personalities are hypothesized to be more vulnerable to depression when they experience negative life events that tap into their personality vulnerabilities ('event congruency' hypothesis).

Given that depressive symptoms represent a defining feature of most bipolar disorders, it is important to explore whether the hypotheses about the impact of depressive personality styles can be usefully applied to bipolar individuals. In addition, Beck (13) suggested that mania-prone individuals possess a set of positive self-schemata that when activated by the occurrence of positive life events lead them to experience manic/hypomanic symptoms. Indeed, recent evidence suggests that positive events that activate the Behavioral Approach System (BAS) may be especially likely to precipitate manic/hypomanic symptoms (14). Thus, it is also worth investigating whether particular personality styles leave individuals differentially vulnerable to hypomanic/manic symptoms in combination with positive events congruent with these personality styles as well. The aim of the present study was to test the event congruency hypothesis for both depressive and hypomanic/manic symptoms among individuals with bipolar spectrum (bipolar II, cyclothymia) disorders.

#### Depressive personality styles

Based on clinical observations of the experiences of depressed individuals, both Beck (7) from a cognitive-behavioral orientation and Blatt et al. (8) from a psychodynamic and developmental perspective arrived at similar depictions of two types of personalities and the subtypes of depression that accompany them. Both theorists observed a group of depression-prone individuals, called sociotropic by Beck and dependent by Blatt et al., who largely orient their lives, values, and sense of self-worth around relationships with others. Highly sociotropic or dependent persons desire reassurance from and close relationships with others to maintain their own self-esteem and have difficulty taking risks that may result in alienation, abandonment, or rejection by

others (7, 15–20). In addition, according to both theories, sociotropic or dependent individuals are selectively vulnerable to depression in response to disruptions of interpersonal relationships (e.g., loss, rejection).

A second group of depression-prone individuals, called autonomous by Beck and self-critical by Blatt et al., orient their lives and sense of self-worth around successes and failures and strive tirelessly for independence and self-definition. Highly autonomous or self-critical individuals greatly value their achievements, measuring them based on their own internalized goals or expectations that are often more stringent than those set by either conventional norms or by others. However, their unreasonably high standards set them up for feelings of failure, disappointment, guilt and self-blame. The maintenance of independence and freedom from control by others is also important to these individuals. According to both theories, autonomous or self-critical individuals are specifically vulnerable to depression when they experience failure, loss of control, or obstructions to their goals. Although Beck's terms sociotropy and autonomy are not synonymous with Blatt's terms dependency and self-criticism, respectively, the personality constructs of both theorists overlap considerably and we focus on their similarities in this paper.

#### Empirical tests of the event congruency hypothesis in unipolar depression

Beck's (7) and Blatt et al.'s (8) event congruency hypothesis, that personality styles will leave a person differentially vulnerable to developing depression after negative events that are congruent with the psychological concerns of that style, has been tested in many studies of unipolar depression (for reviews, see 21, 22). In these studies, interpersonal events are typically conceptualized as congruent with sociotropy and dependency, whereas achievement events are conceptualized as congruent with autonomy and self-criticism. In addition, the relevant personality styles are most commonly assessed with the Sociotropy-Autonomy Scale (SAS; 15, 23), Depressive Experiences Questionnaire (DEQ; 8), and Dysfunctional Attitudes Scale (DAS; 24–26), although other scales (e.g., 27, 28) and behavioral tasks (e.g., 29, 30) have also been used. Support for the congruency hypothesis is demonstrated by a significant interaction between a given personality style and congruent events and a non-significant interaction between the personality style and non-congruent events in predicting depression.

Support for the congruency hypothesis in unipolar depression has been mixed, with sociotropy and dependency demonstrating moderate support and autonomy and self-criticism evidencing poor support for the hypothesis (10, 29–46). However, several methodological issues limit the conclusions that can be drawn from this literature. These studies include a range of stress and depression assessments (e.g., self-report, semi-structured interview), different study designs (e.g., retrospective, prospective), different ways of using the personality measures (e.g., categorical, dimensional), different timeframes for identifying predepression stress (1–12 months prior to onset), and different ways of operationalizing depression (e.g., relapse or onset of depressive diagnosis, total depressive symptoms, change in depressive symptoms). In addition, autonomy (particularly as measured by the SAS) has demonstrated poor construct validity and self-criticism may not show discriminant validity distinct from depressive symptoms (21). Overall, stronger support for the congruency hypothesis has been obtained in methodologically stronger studies using prospective designs and semi-structured interviews for stress and depression assessment. Thus, in the present study, we incorporate these positive methodological features (prospective design, interview assessment of events and symptoms).

An additional important methodological issue relevant to tests of the congruency hypothesis is that there may be a misattunement between the interpersonal–achievement classifications of life events and the psychological concerns that are relevant to the depressive personality styles (47–49). Thus, rather than using traditional achievement and interpersonal classifications of events, a classification of events as relevant to sociotropy/dependency and autonomy/self-criticism according to the psychological concerns relevant to each personality type would improve the match between events and personality. We use such personality-relevant event categorizations in this study.

Empirical tests of the event congruency hypothesis in bipolar disorder

Two studies to date have examined the event congruency hypothesis in bipolar disorder. Hammen et al. (10) tested the hypothesis in 22 unipolar and 25 bipolar patients, categorized into sociotropic and autonomous personality types and followed for 6 months. They obtained support for the congruency hypothesis only for the unipolar patients, but there were non-significant trends

consistent with the hypothesis for the bipolar patients as well. Indeed, in a subsequent study of a larger sample of 49 remitted bipolar patients followed for an average of 18 months, Hammen et al. (9) found that subsequent symptom severity was predicted by the interaction of sociotropy and negative interpersonal events.

However, limitations of both of these studies may compromise the conclusions that can be drawn. First, both studies contained modest sample sizes, which reduced the power to detect effects. Second, neither study was able to adequately examine depressive and manic symptoms separately. In the first study, mania was not examined at all due to insufficient sample size, and in the second study, depressive and manic symptoms were pooled together or were separated in follow-up tests with too little power to find significant results. Third, all of the non-significant analyses in these studies categorized individuals as sociotropic or autonomous and did not use the full range of sociotropy and autonomy scores, which would have provided a more sensitive test of the congruency hypothesis (21). Finally, the earlier study also tested the hypothesis by totaling life events and self-reported symptoms over 6 months without accounting for the timing of events and symptoms, which is an imprecise test of the hypothesis. Given the limited number of studies examining the congruency hypothesis in bipolar disorder as well as the limitations of the two studies that have been conducted, further tests of this hypothesis among bipolar individuals are needed.

#### Hypotheses

The present study tested prospectively the event congruency hypothesis in a large sample of individuals with bipolar spectrum disorders [bipolar II, cyclothymia, bipolar disorder not otherwise specified (NOS)] followed for 4 months. We tested two hypotheses: (i) the interaction of personality style with subsequent congruent negative events [sociotropy/dependency (SOC-DEP) with sociotropy/dependency-congruent negative events (SOC-DEP events) and autonomy/self-criticism (AUT-SC) with autonomy/self-critical-congruent negative events (AUT-SC events)] would predict increases (new onsets and exacerbations of existing symptoms) in depressive symptoms; and (ii) the interaction of personality style with subsequent congruent positive events (SOC-DEP with SOC-DEP positive events and AUT-SC with AUT-SC positive events) would predict increases (new onsets and exacerbations of existing symptoms) in hypomanic symptoms.

Methods

Participants

Participants were selected using a two-phase screening process. In phase I 6,522 undergraduates, between the ages of 18 and 24, at Temple University were administered the revised General Behavior Inventory (GBI; 50) to identify potential bipolar spectrum individuals for the longitudinal study. Those students who met the cutoffs on the Depression and Hypomania-plus-Biphasic subscales of the GBI (see Measures) were invited to participate in phase II of the screening process. In phase II, high-GBI individuals were administered an expanded version of the Schedule for Affective Disorders and Schizophrenia – Lifetime diagnostic interview (SADS-L; 51). Current and lifetime diagnoses were assigned according to both the Diagnostic and Statistical Manual of Mental Disorders – Fourth edition (DSM-IV; 52) and Research Diagnostic Criteria (RDC; 53) systems. Those high-GBI participants who received a lifetime diagnosis of bipolar II, cyclothymia, or bipolar NOS<sup>1</sup> were invited to participate in the longitudinal study.<sup>2</sup> The final sample for this study included 106 bipolar spectrum participants, 67 bipolar II and 39 cyclothymic/bipolar NOS<sup>3</sup> (Cyc/BiNOS). Of these 106 participants, 16 (15.1%) had sought treatment prior to the start of this study. Table 1 displays the demographic characteristics,

<sup>1</sup>The bipolar NOS diagnosis included individuals who exhibited recurrent hypomanic episodes without diagnosable depressive episodes, individuals who exhibited a cyclothymic pattern but with hypomanic and depressive periods that did not meet minimum duration criteria for hypomanic and depressive episodes, and individuals with hypomanic and depressive periods that were too infrequent to qualify for a cyclothymia diagnosis. Participants who met criteria for bipolar I disorder were excluded because one of the aims of the larger longitudinal study, of which this study was a part, was to predict conversion to bipolar I status over time.

<sup>2</sup>Of the 134 eligible bipolar spectrum participants, 28 either declined to participate in the longitudinal study or missed five or more ‘Time 1’ appointments and were not further pursued for the longitudinal study. These 28 individuals did not differ significantly from the final sample of 106 bipolar spectrum participants on demographics, diagnosis, treatment history, or GBI scores.

<sup>3</sup>Cyclothymic and bipolar NOS participants were combined together in a group distinct from bipolar II participants because, unlike bipolar II individuals, they had in common the fact that they had no prior history of major depression.

Table 1. Participants’ demographic information, General Behavior Inventory, and personality style scores

	Bipolar II (n = 67)	Cyc/BiNOS (n = 39)
Age	19.91 (0.21)	19.23 (0.28)
Sex (female, %)	68.7	56.4
Ethnicity (%)		
Caucasian	59.7	48.7
African American	17.9	35.9
Hispanic	3.0	5.1
Asian American	6.0	0.0
Other	13.4	10.3
GBI Depression	26.66 (9.13)	23.26 (9.55)
GBI Hypomanic-plus-Biphasic	17.51 (4.12)	16.54 (4.01)
Self-criticism/performance evaluation	118.73 (27.62)	105.85 (23.24)
Independence/efficacy	84.50 (11.94)	88.54 (9.45)
Attachment concerns	57.36 (11.92)	52.68 (10.53)
Pleasing others/interpersonal sensitivity	37.10 (8.82)	36.25 (7.87)

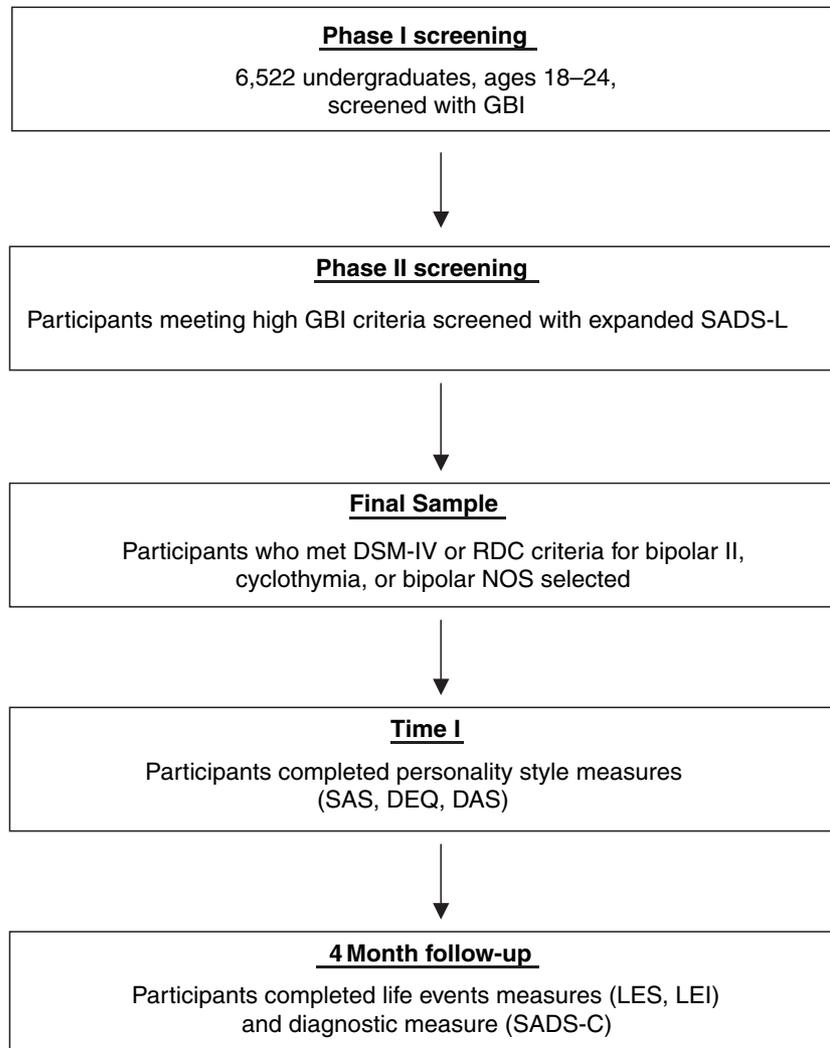
Means of ages, GBI scores, and personality style scores are reported with standard deviations in parentheses. Cyc/BiNOS = Cyclothymic or bipolar not otherwise specified; GBI = General Behavior Inventory.

GBI, and personality style scores of the sample. Bipolar II and Cyc/BiNOS participants did not differ significantly on sex [ $\chi^2(1, n = 106) = 0.65, ns$ ], ethnicity [ $\chi^2(4, n = 106) = 4.52, ns$ ], age [ $t(105) = 1.59, ns$ ], GBI Depression scores [ $t(105) = 0.96, ns$ ], or GBI Hypomanic/Biphasic scores [ $t(105) = 0.41, ns$ ].

Measures

Figure 1 presents a flow diagram of the study’s assessment stages.

*Phase I screening measure.* The revised GBI (50, 54) is a self-report questionnaire designed as an economical and time-efficient screening measure to assess chronic affective disorders in large populations. It contains 73 items that assess core bipolar experiences and their intensity, duration, and frequency on two subscales: Depression (D) and Hypomania and Biphasic (HB) items combined. The GBI uses a frequency scale ranging from 1 (‘not at all’) to 4 (‘very often or almost constantly’). Following Depue et al.’s (50, 54) recommendations, we used the case scoring method in which 1 point was added to the total D or HB scale score if an individual responded with a 3 (‘often’) or 4 on a given item. Based on the cutoff scores recommended by Depue et al. (50), those participants who scored  $\geq 11$  on the D scale and  $\geq 13$  on the HB scale were invited to participate in the phase II diagnostic interview.



*Fig. 1.* Flow diagram of the study assessments. GBI = General Behavior Inventory; SADS-L = Schedule for Affective Disorders and Schizophrenia – Lifetime diagnostic interview; SADS-C = Schedule for Affective Disorders and Schizophrenia – Change diagnostic interview; SAS = Sociotropy Autonomy Scales; DEQ = Depressive Experiences Questionnaire; DAS = Dysfunctional Attitudes Scale; LES = Life Events Scale; LEI = Life Events Interview.

The GBI has good discriminant validity in correctly identifying individuals with affective disorders (0.88), including cyclothymia, among participants with non-affective disorders (55). In addition, the GBI has shown good internal ( $\alpha_s = 0.90\text{--}0.96$ ), and test–retest ( $r_s = 0.71\text{--}0.74$ ) reliability and has demonstrated adequate sensitivity (0.78) and excellent specificity (0.99) for bipolar spectrum disorders (50, 54). The GBI has also been validated on samples of college students, outpatients, and offspring of bipolar I patients, and does not appear susceptible to response biases (50, 54, 56).

*Phase II diagnostic measure.* The expanded SADS-L (51) is a semi-structured diagnostic interview to assess current and lifetime history of axis I

diagnoses. The SADS-L was expanded in several ways: (i) probes were added to allow for the assignment of DSM-IV as well as RDC diagnoses; (ii) additional questions were added regarding depression, hypomania/mania, and cyclothymia to better capture the nuances of episodes and frequency and duration of symptoms; (iii) the order of interview questions was changed to increase the interview's efficiency; and (iv) sections were added to assess eating disorders, attention-deficit hyperactivity disorder (ADHD), and acute stress disorder, additional probes were added in the anxiety disorders section, and an organic rule-out module and medical history section were appended. Interrater reliability on the expanded SADS-L has been excellent, with overall  $\kappa = 0.86$  based on joint ratings of 40 interviews in a previous study (57) and  $\kappa = 0.96$

for bipolar diagnoses based on joint ratings for 105 interviews in this study. The expanded SADS-L interviewers were extensively trained and blind to the phase I GBI scores. Training consisted of approximately 200 h of reading and didactic instruction, watching videotaped interviews, role playing, discussing case vignettes, and extensive practice conducting live interviews with supervision and feedback meetings. Consensus DSM-IV and RDC diagnoses were determined by a three-tiered standardized diagnostic review procedure involving senior diagnosticians and an expert psychiatric diagnostic consultant.

*Prospective diagnostic measure.* An expanded SADS-Change (SADS-C; 58) interview administered at 4-month follow-up was used to assess onset, duration, and severity of individual symptoms and diagnosable episodes of axis I psychopathology during the 4 months. The SADS-C was expanded in the same manner as the SADS-L interview. In addition, features of the Longitudinal Interval Follow-up Evaluation (LIFE II; 59) were added to the expanded SADS-C in order to systematically track the course of symptoms during the follow-up. Although the LIFE II tracks symptoms on a weekly basis, our expanded SADS-C inquired about each symptom's occurrence on a daily basis during the 4-month interval. Interrater reliability for the expanded SADS-C in joint ratings of 60 interviews in this study ( $\kappa > 0.80$ ) was good. In a validity study using the expanded SADS-C, participants dated their symptoms to the day with at least 70% accuracy compared to daily symptom ratings made over a 4-month period.

*Personality style measures.* Sociotropic-dependent (SOC-DEP) and autonomous-self-critical (AUT-SC) personality styles were assessed with three questionnaires: the SAS (15), DEQ (8) and DAS, Form A (24–26). The SAS is a 60-item questionnaire designed to measure Beck's (7) hypothesized depressive personality modes, with 30 items each on the Sociotropy ('I find it difficult to be separated from people I love'; 'I am afraid of hurting other people's feelings') and Autonomy ('It is very important that I feel free to get up and go wherever I want'; 'I value work accomplishments more than I value making friends') subscales. Each item is rated on a 5-point scale (0%, 25%, 50%, 75%, 100%). The Sociotropy and Autonomy scales have good internal consistency ( $\alpha = 0.90$  and 0.93, respectively) and high test-retest reliability (15, 49). The Sociotropy scale has also been shown to have high concurrent validity with other

measures of dependency and affiliation, whereas the Autonomy scale is also moderately correlated with an autonomy subscale of a different measure (32). The Sociotropy scale has been shown to be related to depression, whereas the Autonomy scale has not shown a consistent association with depression (21, 49).

The 66-item DEQ (8) has three factors that assess the depressive personality styles theorized by Blatt et al. (8, 16): Dependency, Self-criticism, and Efficacy. Only the Dependency ('Without support from others who are close to me, I would be helpless'; 'I have difficulty breaking off a relationship that is making me unhappy') and Self-Criticism ('There is a considerable difference between how I am now and how I would like to be'; 'I have a difficult time accepting weaknesses in myself') items were used in this study. DEQ items are rated on 7-point scales ranging from 'strongly disagree' ('1') to 'strongly agree' ('7'). The scoring manual provides factor loadings, factor scoring coefficients, and item means and standard deviations for men and women (20). The DEQ has shown high internal and test-retest reliability (8, 19). There is also considerable support for the construct validity of the factors as being consistent with Blatt's theory (49). Both Dependency and Self-Criticism have been found to be related to measures of depressive symptoms, with a greater correlation with concurrent depression for Self-Criticism (21, 49).

The DAS, Form A (26) is a 40-item questionnaire that measures maladaptive beliefs regarding perfectionistic performance expectations, concerns about others' approval, causal attributions, and pessimism on 7-point scales (ranging from 'totally agree' to 'totally disagree'). Two factors have been extracted from the DAS that are hypothesized to map onto the sociotropic and autonomous personality styles of the SAS and the dependent and self-critical styles of the DEQ (24, 44): Approval by Others (AO – 10 items; 'My value as a person depends greatly on what others think of me'; 'If others dislike you, you cannot be happy') and Performance Evaluation (PE – 15 items; 'If I do not do as well as other people, it means I am an inferior human being'; 'People will probably think less of me if I make a mistake'), respectively. Cane et al. (24) found that AO accounted for 14% of the variance in DAS scores and had an  $\alpha = 0.76$ . PE accounted for 47% of the variance in DAS scores and had an  $\alpha = 0.84$ . These two DAS factors have shown good construct validity (44). The overall DAS has also shown strong internal consistency and test-retest reliability in college samples (26, 60, 61).

Given that there were three personality measures and up to 10 potential subscales derived from them, a factor analysis was conducted to simplify and clarify the factor structure when all three questionnaires are used together. This method of identifying key factors across the SAS, DEQ, and DAS was conducted to eliminate duplication of scores that theoretically measure the same construct (e.g., Sociotropy – SAS, Dependency – DEQ, and Approval by Others – DAS) and to reduce the number of statistical analyses needed to test the study hypotheses. Factor analysis of the SAS, DEQ, and DAS was conducted on a larger sample of 224 bipolar spectrum participants (including the 106 participants in this study) and 228 demographically matched normal controls (screened with the expanded SADS-L for no lifetime history of psychopathology) from the Longitudinal Investigation of Bipolar Spectrum (LIBS) Disorders Project. Separate preliminary factor analyses on the 224 bipolar and 228 normal participants demonstrated similar factor structures for the two groups before including them together in the main factor analyses. A principal axis factoring method with varimax rotation was used and constrained to all eigenvalues  $> 1$ . Examination of the Scree plot and resulting eigenvalues suggested a 4-factor solution with all of the first four factors having an eigenvalue  $> 4.75$ . A principal axis factoring analysis restricted to four factors subsequently was conducted. Any items loading  $> 0.30$  on a single factor and  $< 0.25$  on the remaining factors were retained, and all other items were discarded. The remaining items were again subjected to a factor analysis to confirm the stability of the factor structure and to ensure that each item continued to load strongly ( $> 0.30$ ) on a single factor.

The first factor, *Self-Criticism/Performance Evaluation (SC/PE)*, accounted for 12% of the variance, consisted of 33 items, and had an  $\alpha = 0.91$  (item-total  $r_s = 0.25\text{--}0.63$ ). Items loading on this factor related to dissatisfaction with self and accomplishments, image of self as flawed, weak or unlikable, harsh self-standards or expectations, perceptions of others as critical or intrusive, preference for mobility/freedom from control, and feelings of emptiness. The second factor, *Independence/Efficacy (I/E)*, accounted for 5.5% of the variance and contained 19 items ( $\alpha = 0.80$ ; item-total  $r_s = 0.29\text{--}0.49$ ) related to being independent, setting and achieving high but reasonable personal goals, being effective and satisfied with oneself, and valuing freedom of self-expression regardless of others' reactions. The third factor, *Attachment Concerns (AC)*, accounted for 5.4% of the variance and consisted of 15 items ( $\alpha = 0.81$ ,

item-total  $r_s = 0.33\text{--}0.58$ ) related to attachment and connectedness to others, concern about separation, and dependency. The fourth factor, *Pleasing Others/Interpersonal Sensitivity (PO/IS)*, accounted for 4.2% of the variance and consisted of nine items ( $\alpha = 0.77$ , item-total  $r_s = 0.37\text{--}0.56$ ) related to trying to please others, sensitivity to others' feelings and evaluations, and concern about alienating others. Correlations among the newly derived factors and traditional subscales from the SAS, DEQ, and DAS were examined to confirm the validity of the new factors (see Table 2). As shown in Table 2, the *SC/PE* factor correlated most highly with DEQ Self-criticism and DAS Performance Evaluation and showed moderate correlations with SAS Mobility/Freedom from Control and DAS Approval by Others. The *I/E* factor correlated highly with SAS Individualistic Achievement and moderately with SAS Mobility/Freedom from Control. The *AC* factor correlated highly with SAS Attachment/Separation and DEQ Dependency and moderately with SAS Concern about Disapproval and DAS Approval by Others. Finally, the *PO/IS* factor correlated highly with SAS Pleasing Others and DEQ Dependency and moderately with SAS Concern about Disapproval and DAS Approval by Others.<sup>4</sup> These four factors [two relevant to autonomy and self-criticism (*SC/PE*, *I/E*) and two relevant to sociotropy and dependency (*AC*, *PO/IS*)] were used in tests of the study hypotheses.

*Life events.* A questionnaire and semi-structured interview were used to assess life events over the 4-month follow-up. The original Life Events Scale (LES; 63–65) includes 134 major and minor negative life events in a wide variety of content domains relevant to students (e.g., school, family, finances, romantic relationships). An expanded 177-item LES was used in this study that reduced the number of negative events, but added positive events. LES items were written to decrease ambiguous and redundant events and to eliminate 'hierarchical' items where one event is a subset of another (e.g., failed an examination is a subset of doing poorly at school). In addition, items that reflect obvious symptoms of depression or hypomania/mania were eliminated from the LES. At the 4-month follow-up, participants were asked to report on whether each event occurred and how many times it occurred over the last 4 months.

Following completion of the LES, participants were interviewed with the Life Events Interview (LEI; 63). The LEI served as a reliability and

<sup>4</sup>Greater details regarding the factor analyses may be obtained from Francis-Raniere (62).

Table 2. Correlations among four personality factors and other traditional personality scores (N = 452)

	Factor 1: SelfCrit/ PerfEval	Factor 2: Indep/ Efficacy	Factor 3: Attachment concerns	Factor 4: PlsOther/ InterSens
Factor 1: SelfCrit/PerfEval	1.000			
Factor 2: Indep/Efficacy	-0.084	1.000		
Factor 3: Attachment	0.225***	-0.201***	1.000	
Factor 4: PlsOther/InterSens	0.252***	-0.153***	0.396***	1.000
<b>Sociotropy-Autonomy Scale (SAS)</b>				
Sociotropy (general)	0.431***	-0.195***	0.714***	0.727***
Sociotropy subscales				
Concern about disapproval	0.560***	-0.207***	0.558***	0.598***
Attachment/separation	0.167***	-0.093*	0.820***	0.492***
Pleasing others	0.375***	-0.212***	0.361***	0.837***
Autonomy (general)	0.254***	0.700***	-0.202***	-0.084
Autonomy subscales				
Individualistic achievement	-0.197***	0.784***	-0.310***	-0.251***
Mobility/freedom from control	0.464***	0.418***	0.067	0.032
Solitary pleasures	0.354***	0.323***	-0.258***	0.068
<b>Depressive Experiences Questionnaire (DEQ)</b>				
Dependency	0.213***	-0.311***	0.711***	0.751***
Self-criticism	0.873***	0.124**	0.161***	0.188***
<b>Dysfunctional Attitudes Scale (DAS)</b>				
Approval by others	0.449***	-0.238***	0.576***	0.577***
Performance evaluation	0.871***	-0.102*	0.197***	0.293***

SelfCrit/PerfEval = Self-Criticism/Performance Evaluation; Indep/Efficacy = Independence/Efficacy; PlsOther/InterSens = Pleasing Others/Interpersonal Sensitivity.

\*p < 0.05; \*\*p < 0.01; \*\*\*p < 0.001.

validity check on the LES by providing explicit definitional criteria for what experiences counted as each event (e.g., an aunt with the flu would not meet the definitional criteria for the event, ‘close family member had a serious medical illness’) and *a priori* probes to determine whether the event definition criteria were met. On the LEI, the interviewer reviewed every event endorsed on the LES to determine if the experience met the definitional criteria. If it did not, the event was designated as a DNQ (‘Does Not Qualify’) and was not counted in final event totals. The interviewer also dated the occurrence of each event that did qualify.

Both negative and positive event scores on the LES have shown excellent reliability and validity (57, 64, 65). The predictive validity of the LES negative events score was supported by the finding that negative events in interaction with negative cognitive styles predicted increases in subsequent depressive symptoms among individuals with unipolar and bipolar spectrum disorders (57, 66). Similarly, the positive events score predicted increases in hypomanic symptoms in interaction with optimistic cognitive styles (57). The combined LES/LEI procedure has also yielded excellent reliability and validity. A rigorous interrater reliability study of 40 LEI interviews, in which different interviewers independently interviewed

the same participant (within 2 days) with the LEI for the same 6-week interval, yielded an average  $r = 0.89$  between interviewers for rating and dating of events. In addition, in a validity study using the LES and LEI, participants correctly recalled 100% of the major events they experienced over a month when compared to daily life events listings made during the month. Participants dated these events to the exact day with 92% accuracy.

As discussed in the introduction, the match between the personality styles and the psychological impact of experienced life events is an important component in testing the congruency hypothesis. Given that interpersonal and achievement categories traditionally used to classify life events are based on situational domains rather than domains of psychological impact, they may be less congruent with the personality styles of interest than categories derived with the psychological concerns of individuals with these styles in mind (47–49). Given these methodological considerations, a theoretically based categorization of life events was derived for this study. A list of criteria was derived to specify those events that would be classified as matching the sociotropic/dependent and autonomous/self-critical personality styles. Three raters (including the first author) were trained on the event classification criteria and rated sample events and discussed the rationale for

Table 3. Summary of life event totals (n = 78)

	Mean	SD	Range
Negative events preceding peak depression			
SOC-DEP events	2.71	2.98	0–15
AUT-SC events	2.95	3.31	0–18
Total events	5.65	5.96	0–33
Positive events preceding peak hypomania			
SOC-DEP events	0.82	0.93	0–5
AUT-SC events	1.86	1.88	0–9
Total events	2.68	2.54	0–11

SOC-DEP = sociotropic/dependent; AUT-SC = autonomous/self-critical.

these ratings until consensus was achieved. Following this discussion of sample events, standard ratings and rationales for the sample events were created and used as a reference for the final ratings. After each rater made judgments on the actual LES events, the final categorization was based on the modal rating across the three raters. Modal ratings were collapsed into a dichotomous variable as SOC-DEP or AUT-SC.<sup>5</sup> Interrater reliabilities for these classifications were good to excellent, with intra-class correlation coefficients of 0.90 for SOC-DEP events and 0.86 for AUT-SC events. Examples of SOC-DEP events include ‘significant fight or argument with close friend that led to serious consequence’ and ‘began relationship with new boyfriend/girlfriend.’ Examples of AUT-SC events include ‘laid off or fired from job’ and ‘received a scholarship or fellowship or won an award for your achievements at school.’ Events that overlapped categories (e.g., ‘significant fight or argument with co-worker or boss that led to serious consequence’) were counted as both SOC-DEP and AUT-SC in the analyses, whereas events that did not fit into either category (e.g., ‘witnessed a serious accident or act of violence’) were not included as either SOC-DEP or AUT-SC in the analyses. Table 3 provides the means, standard deviations, and ranges of the number of negative and positive SOC-DEP and AUT-SC events (and total events) participants experienced.

*Procedure.* Participants selected for the final sample were assigned two interviewers, one to conduct the expanded SADS-C interview and one to conduct the LEI, in order to keep the diagnostic and life events data independent. Both interviewers were blind to participants’ GBI scores, SADS-L diagnosis, and personality scores. At time 1, participants completed the SAS, DEQ, and DAS

personality measures. Four months later, they completed the LES and were interviewed with the expanded SADS-C and LEI.

## Results

### Tests of the event congruency hypothesis

According to the event congruency hypothesis, specific personality styles will leave a bipolar individual differentially vulnerable to developing depression after personality-congruent negative events occur and to developing hypomania after personality-congruent positive events occur. In preparation for testing this hypothesis, three categories of variables were identified for each participant: (i) personality scores, (ii) the largest increase (or *peak*) in depressive and hypomanic symptoms, and (iii) total SOC-DEP and AUT-SC events hypothesized to precipitate the *peak* symptomatology. The derivation of personality scores is explained in the above Measures section, and the derivation of the remaining two variables is described below.

The largest increase (or *peak*) in depressive and hypomanic symptoms during the 4-month follow-up was selected from each participant’s SADS-C assessment. This *peak* variable was defined as the total number of symptoms present on the first day of the peak in symptoms.

The events preceding symptom peaks then needed to be identified with two considerations in mind. First, the varying symptom patterns needed to be taken into account. Some participants had a progressive increase in their symptoms leading to *peak*, whereas others had their symptoms jump directly up to *peak* levels. To test the hypothesis properly, some portion of preceding events needed to occur before any change in symptoms began. Accounting for the different symptom pictures, the *onset of peak* was selected as the day on which the participant’s symptoms began increasing toward the maximum *peak*.<sup>6</sup> Events needed to be present for a clear period of time before the *onset of peak* and to include the period from *onset of peak* to *peak*. Second, the length of the prospective period leading up to the *onset of peak* was considered. In the literature, there are no standard periods for measuring prior events. Prospective periods have ranged from 2 weeks to 1 year (33, 40, 41, 45). Given the 4-month follow-up period in this study,

<sup>5</sup>The event rating manual, rating criteria and guidelines, and sample event rating standards may be obtained from Francis-Raniere (62).

<sup>6</sup>Identifying the day on which *onset of peak* began was more difficult than identifying the day of maximum *peak*, although our validity study (p. 387) suggests that even *onset of peak* could be determined with at least 70% accuracy.

we needed sufficient lead-time prior to the *peak* dates to be able to identify preceding events. The longer the interval for including prior events was set, the fewer the participants whose interview period would accommodate the model. Given these considerations, a 3-week time interval was selected, which maximized the length of this time period while also preserving a sufficient sample size for testing the hypothesis.<sup>7</sup> Thus, preceding events were identified as all events that occurred between the period starting 3 weeks prior to *onset of peak* and ending the day of the *peak*. The negative and positive event scores were calculated as the sum of all separate negative and positive event occurrences, respectively.

For those participants whose symptoms did not change over the 4 months, there were no clear markers to indicate onset or duration of the prospective period. Thus, this timeframe was selected to start at the beginning of the 4-month interval and to be comparable in duration to that of the participants whose symptoms did change. Given that the prospective period for symptomatically active participants varied depending on the time it took for symptoms to reach maximum peak (e.g., time between *onset of peak* and *peak*), this variability needed to be taken into account for participants whose symptoms did not change. Thus, an average period of time between *onset of peak* and *peak* symptom increase was calculated across all participants showing symptomatic activity, and this average plus the 3-week prospective period was used as the timeframe for all participants with no symptom peaks (see Table 4 for timeframes of preceding life events).

Preliminary correlational analyses were conducted to examine the relationships between demographic (gender, age, ethnicity) and clinical (drug and alcohol use, medication status) variables and the dependent variables (*peak* depressive symptoms and *peak* hypomanic symptoms). None of these correlations were significant. Thus, we did not include these demographic and clinical variables as covariates in the main analyses.

<sup>7</sup>The 3-week time interval for assessing preceding life events reduced the sample size for testing the event congruence hypothesis to  $n = 78$ . This is because there were some participants who could not be included in the analyses because their *peak* depression or *peak* hypomania occurred too close to the beginning of the prospective follow-up period. For example, if someone's *peak* depression happened on day 2 of the follow-up, only 1 day of events data would be available. Thus, these participants were not included in these analyses.

Table 4. Time periods for preceding life events

	Symptomatic (participants)	Non-symptomatic (participants)
<b>Congruency tests for depression</b>		
N	67	11
Time period for preceding events		
Mean (in days)	30.9	30.9
SD	13.8	0.0
Range	21–77	31
Time period between <i>onset of peak</i> and <i>peak</i>		
Mean (in days)	9.9	9.9
SD	13.8	13.8
Range	0–56	10
<b>Congruency tests for hypomania</b>		
N	33	45
Time period for preceding events		
Mean (in days)	22.5	22.5
SD	5.0	0.0
Range	21–48	23
Time period between <i>onset of peak</i> and <i>peak</i>		
Mean (in days)	1.5	1.5
SD	5.0	0.0
Range	0–27	2

All time periods for preceding events are at least 21 days in length (e.g., 3 weeks) and are longer when the *onset of peak* and *peak* symptoms do not occur on the same day (e.g., from 3 weeks before the *onset of peak* to *peak*). The time periods are the same length for all non-symptomatic participants and are set to equal the mean time period for symptomatic participants.

The congruency hypotheses for prediction of depression and hypomania were tested using hierarchical multiple regression analysis of partial variance (67). The assumption of homogeneity of covariance was tested and met for all regression analyses (68). The criterion variable for each of the regressions was the total number of symptoms present on the *peak* date. The predictor variables were entered into the regression equation in the following order: covariates in Step 1, personality styles in Step 2, congruent or non-congruent events in Step 3, and the multiplicative interaction between personality styles and congruent or non-congruent events in Step 4. The covariates were diagnostic group (bipolar II, Cyc/BiNOS), total of all symptoms at the beginning of the prospective period (e.g., 3 weeks prior to onset), and total number of preceding events. Diagnostic group was included as a covariate because the two groups differed on some of the personality styles ( $t(76) = -2.09$ ,  $p < 0.04$  for *SC/PE*;  $t(76) = -1.73$ ,  $p < 0.09$  for *AC*; see Table 1). Inclusion of the second covariate allowed for prediction of *change* in symptoms. The third covariate was entered with the assumption that the relationship between life events and bipolar disorder has been clearly demonstrated (3, 5), and the congruency hypotheses would need to be supported above and beyond

any general effects of negative or positive events in predicting to bipolar symptoms. Given that there was no hypothesized difference between the two autonomy/self-criticism factors of *SC/PE* and *I/E* or between the two sociotropy/dependency factors of *AC* and *PO/IS*, they were entered into the same step for each model. Each set of analyses contained four interaction effects: (i) examining the congruent autonomy/self-criticism effect (i.e., *SC/PE* and *I/E* in interaction with AUT-SC events), (ii) examining the non-congruent autonomy/self-criticism effect (i.e., *SC/PE* and *I/E* in interaction with SOC-DEP events), (iii) examining the congruent sociotropy/dependency effect (i.e., *AC* and *PO/IS* in interaction with SOC-DEP events), and (iv) examining the non-congruent sociotropy/dependency effect (i.e., *AC* and *PO/IS* in interaction with AUT-SC events).

*Predicting peak increase in depression.* Table 5 shows the results of the first set of regression analyses predicting increases in depressive symptoms. As shown in Table 5 (top half), consistent with the congruency hypothesis, the interaction between the autonomous/self-critical styles (*SC/PE* and *I/E*) and congruent negative AUT-SC events predicted *peak* increase in depression, whereas the interaction between these styles and non-congruent negative (SOC-DEP) events did not. Because there was high multicollinearity between the two interaction effects, the partial regression coefficients of the interaction step of the model could not be interpreted (69). Thus, the main regression analysis was followed by further regression analyses isolating the potential contribution of each interaction separately. These follow-up analyses indicated that the significant congruent finding was solely based on the interaction effect of

Table 5. Hierarchical multiple regressions predicting to peak increase in depression ( $n = 78$ )

		$R^2$	$R^2$ change	$F$ change
Regression 1 (congruent events)				
Step 1	Diagnostic group Initial depression Total events	0.537	0.537	28.570**
Step 2	SelfCrit/PerfEval Indep/Efficacy	0.542	0.005	0.419
Step 3	Neg AutSC events	0.544	0.002	0.264
Step 4	SC/PE $\times$ Neg AutSC events Ind/Eff $\times$ Neg AutSC events	0.586	0.042	3.530*
Regression 2 (non-congruent events)				
Step 1	Diagnostic group Initial depression Total events	0.537	0.537	28.570**
Step 2	SelfCrit/PerfEval Indep/Efficacy	0.542	0.005	0.419
Step 3	Neg SocDep events	0.544	0.002	0.282
Step 4	SC/PE $\times$ Neg SocDep events Ind/Eff $\times$ Neg SocDep events	0.567	0.023	1.841
Regression 3 (congruent events)				
Step 1	Diagnostic group Initial depression Total events	0.537	0.537	28.570**
Step 2	Attachment Concerns Pleasing Others/Sensitivity	0.553	0.017	1.352
Step 3	Neg SocDep events	0.555	0.002	0.253
Step 4	Attachmt $\times$ Neg SocDep events PlsOth/Sens $\times$ Neg SocDep events	0.607	0.052	4.532*
Regression 4 (non-congruent events)				
Step 1	Diagnostic group Initial depression Total events	0.537	0.537	28.570**
Step 2	Attachment Concerns Pleasing Others/Sensitivity	0.553	0.017	1.352
Step 3	Neg AutSC events	0.554	0.001	0.080
Step 4	Attachmt $\times$ Neg AutSC events PlsOth/Sens $\times$ Neg AutSC events	0.591	0.038	3.168*

SC/PE = Self-Criticism/Performance Evaluation; Ind/Eff = Independence/Efficacy; Attachmt = Attachment Concerns; PlsOth/Sens = Pleasing Others/Interpersonal Sensitivity; AutSC = Autonomous/Self-Critical; SocDep = Sociotropic/Dependent; Neg = Negative.  
\* $p < 0.05$ ; \*\* $p < 0.005$ .

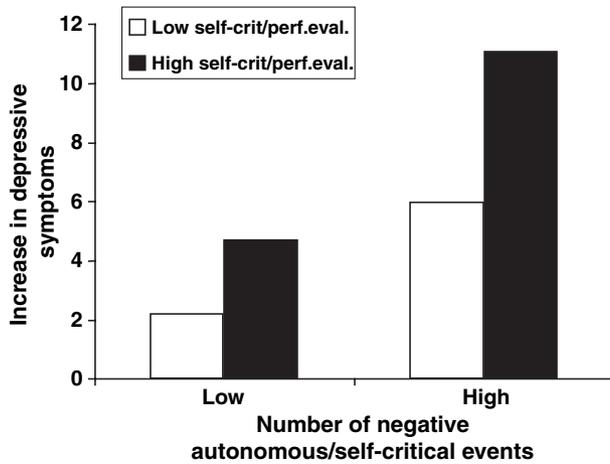


Fig. 2. Increase in depressive symptoms as a function of low versus high levels of Self-Criticism/Performance Evaluation and low versus high numbers of Negative Autonomous/Self-Critical Events. Low versus high status on personality and events are based on 0.5 SD above and below the means.

*Self-Criticism/Performance Evaluation (SC/PE)* and negative congruent events predicting to *peak* increase in depression [ $F(1,71) = 4.92, p = 0.03$ ]; the interaction of *Independence/Efficacy (I/E)* with these negative congruent events was non-significant [ $F(1,71) = 2.24, p = 0.14$ ]. Figure 2 shows the pattern of the *SC/PE*  $\times$  negative AUT-SC events interaction by dichotomizing *SC/PE* and negative AUT-SC events scores 0.5 SD above and below the mean. *Post-hoc* comparisons were then performed to evaluate the mean differences among the resulting four groups. As seen in Fig. 2, consistent with theoretical prediction, individuals high on *SC/PE* who experienced high numbers of congruent negative events exhibited a larger *peak* increase in depression than low *SC/PE* individuals with high numbers of congruent negative events ( $t = 2.13, p < 0.05$ ) or than high *SC/PE* individuals with low numbers of congruent negative events ( $t = 2.99, p < 0.01$ ).

Table 5 (bottom half) also shows that sociotropic/dependent personality styles (*AC* and *PO/IS*) interacted significantly with both congruent and non-congruent negative events to predict *peak* increase in depression, thus, failing to support the congruency hypothesis. Follow-up regressions indicated that the congruent and non-congruent interaction effects for *Attachment Concerns* were both significant [ $F(1,71) = 8.67, p = 0.004$ , and  $F(1,71) = 6.19, p < 0.02$ , respectively], whereas both congruent and non-congruent interaction effects for *Pleasing Others/Interpersonal Sensitivity* were non-significant [ $F(1,71) = 2.80, p < 0.10$ , and  $F(1,71) = 3.37, p = 0.07$ , respectively]. Contrary to initial prediction, the pattern of the

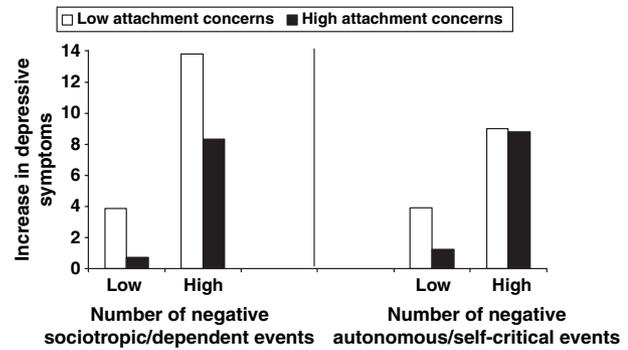


Fig. 3. Increase in depressive symptoms as a function of low versus high levels of Attachment Concerns and low versus high numbers of Negative Sociotropic/Dependent Events (left) or Negative Autonomous/Self-Critical Events (right). Low versus high status on personality and events are based on 0.5 SD above and below the means.

interaction effects involving *Attachment Concerns* suggested that high *AC* provided protection against, rather than a vulnerability to, increases in depression when individuals experienced congruent negative events (Fig. 3, left side). Whereas high and low *AC* individuals did not differ in their *peak* increase in depression at low levels of congruent stress ( $t = 1.58, ns$ ), high *AC* individuals experienced smaller increases in depression than low *AC* individuals at high levels of congruent negative events ( $t = 2.54, p < 0.02$ ). For non-congruent stress (Fig. 3, right side), both high and low *AC* individuals exhibited greater increases in *peak* depression when they experienced high rather than low numbers of non-congruent events ( $t = 3.48, p < 0.001$  and  $t = 2.40, p < 0.03$ , respectively).

*Predicting to peak increase in hypomania.* Table 6 displays the results of the second set of regression analyses predicting to increases in hypomania. As displayed in Table 6 (top half), consistent with the congruency hypothesis, the interaction between the autonomous/self-critical styles (*SC/PE* and *I/E*) and congruent positive AUT-SC events predicted *peak* increase in hypomania significantly, whereas the interaction of autonomous/self-critical styles with non-congruent positive events was not significant. None of the interactions involving sociotropic-dependent personality styles predicted increases in hypomania significantly (Table 6, bottom half). Follow-up regressions indicated that only *Self-Criticism/Performance Evaluation (SC/PE)* contributed to the significant interaction effect of autonomous/self-critical styles with congruent positive events predicting to *peak* increase in hypomania [ $F(1,71) = 7.27, p = 0.009$ ]. The personality  $\times$  congruent positive events interaction for

Table 6. Hierarchical multiple regressions predicting to peak increase in hypomania ( $n = 78$ )

		$R^2$	$R^2$ change	$F$ change
Regression 1 (congruent events)				
Step 1	Diagnostic group Initial hypomania Total events	0.192	0.192	5.843**
Step 2	SelfCrit/PerfEval Indep/Efficacy	0.266	0.075	3.668*
Step 3	Pos AutSC events	0.266	0.000	0.001
Step 4	SC/PE $\times$ Pos AutSC events Ind/Eff $\times$ Pos AutSC events	0.384	0.118	6.610**
Regression 2 (non-congruent events)				
Step 1	Diagnostic group Initial hypomania Total events	0.192	0.192	5.843**
Step 2	SelfCrit/PerfEval Indep/Efficacy	0.266	0.075	3.668*
Step 3	Pos SocDep events	0.272	0.006	0.592
Step 4	SC/PE $\times$ Pos SocDep events Ind/Eff $\times$ Pos SocDep events	0.303	0.030	1.500
Regression 3 (congruent events)				
Step 1	Diagnostic group Initial hypomania Total events	0.192	0.192	5.843**
Step 2	Attachment Concerns Pleasing Others/Sensitivity	0.199	0.008	0.342
Step 3	Pos SocDep events	0.212	0.013	1.163
Step 4	Attchmt $\times$ Pos SocDep events PlsOth/Sens $\times$ Pos SocDep events	0.266	0.054	2.554
Regression 4 (non-congruent events)				
Step 1	Diagnostic group Initial hypomania Total events	0.192	0.192	5.843**
Step 2	Attachment Concerns Pleasing Others/Sensitivity	0.199	0.008	0.342
Step 3	Pos AutSC events	0.199	0.000	0.011
Step 4	Attchmt $\times$ Pos AutSC events PlsOth/Sens $\times$ Pos AutSC events	0.232	0.032	1.456

SC/PE = Self-Criticism/Performance Evaluation; Ind/Eff = Independence/Efficacy; Attchmt = Attachment Concerns; PlsOth/Sens = Pleasing Others/Interpersonal Sensitivity; AutSC = Autonomous/Self-Critical; SocDep = Sociotropic/Dependent; Pos = Positive.

\* $p < 0.05$ ; \*\* $p < 0.005$ .

*I/E* did not significantly predict peak hypomania [ $F(1,71) = 0.04$ ,  $p < 0.84$ ]. Figure 4 shows that the interaction of *SC/PE* and positive congruent events showed an expected pattern. Low and high *SC/PE* individuals showed comparably small increases in hypomania when they experienced low numbers of congruent positive events ( $t = 0.12$ , ns), but high *SC/PE* participants had significantly higher peaks in hypomania at high levels of congruent positive events than did low *SC/PE* participants ( $t = 3.26$ ,  $p < 0.01$ ).

## Discussion

Personality-event congruence in predicting symptomatology

Beck's (7, 13) and Blatt et al.'s (8, 16) event congruency hypothesis, that life events that match

the concerns central to individuals' personality styles increase vulnerability to affective symptomatology, was tested for increases in depressive and hypomanic symptoms among bipolar spectrum individuals. We conducted our tests of the congruency hypothesis controlling for diagnostic group, initial symptoms, and total events, which resulted in a very conservative test, but one in which the hypothesis was tested more precisely than if these potentially confounding variables were not included in the model.

We obtained consistent support for the congruency hypothesis for the personality style of *Self-Criticism/Performance Evaluation*. This style in interaction with congruent autonomous/self-critical negative events predicted increases in depressive symptoms, and in interaction with congruent autonomous/self-critical positive events predicted increases in hypomanic symptoms. The *Self-Criti-*

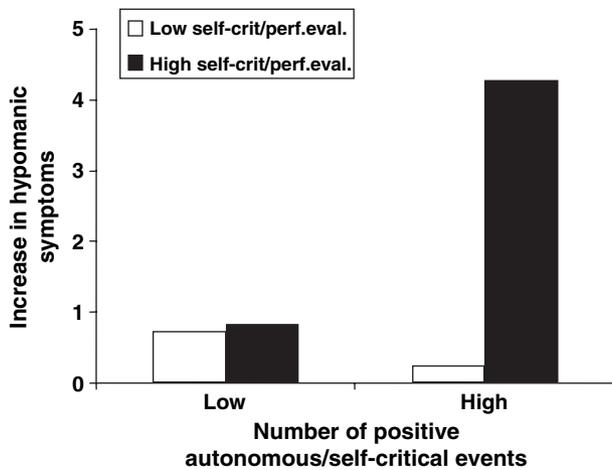


Fig. 4. Increase in hypomanic symptoms as a function of low versus high levels of Self-Criticism/Performance Evaluation and low versus high numbers of Positive Autonomous/Self-Critical Events. Low versus high status on personality and events are based on 0.5 SD above and below the means.

*cism/Performance Evaluation* × congruent events interactions accounted for 4.2% and 11.8% of change in depressive and hypomanic symptoms, respectively. This variance is substantially greater than the variance accounted for by congruent events themselves (0–1.3%), known triggers of depression and hypomania. The pattern of the interactions revealed that individuals higher on *Self-Criticism/Performance Evaluation* and experiencing higher numbers of congruent events showed the largest increase in symptoms. Moreover, as required by the congruency hypothesis, *Self-Criticism/Performance Evaluation* did not interact significantly with non-congruent events to predict depression or hypomania. The fact that none of the tests of the congruency hypothesis for *Independence/Efficacy* were significant suggests that it is the focus on performance, high self-standards, and self-denigration when these standards are not met that is the crucial component of this vulnerability to bipolar symptoms.

The strong support for the congruency hypothesis in predicting bipolar symptoms with *Self-Criticism/Performance Evaluation* in this study runs contrary to trends seen in the unipolar depression literature in which the congruency hypothesis has received stronger support for sociotropy/dependency (21, 22, 49). *Self-Criticism/Performance Evaluation* may be more relevant to bipolar than to unipolar individuals, consistent with the hypothesis that at the core of bipolar disorder is a highly sensitive Behavioral Approach System (BAS; 70–73) associated with high drive and incentive motivation (14, 74–75). Indeed,

several studies have found that bipolar individuals' cognitive/personality styles are focused on perfectionism, self-criticism, autonomy, and goal attainment in contrast to unipolar depressed individuals' styles which are characterized more strongly by sociotropy, dependency and attachment (11, 12, 76, 77).

Alternatively, the stronger support for congruency with *Self-Criticism/Performance Evaluation* in this study may be attributable to this newly derived factor's improved measurement of the construct over previously tested factors. Although only two prior studies examined the congruency hypothesis in bipolar samples (9, 10), neither of these studies obtained clear support for the hypothesis using autonomous/self-critical styles to predict depressive or hypomanic symptoms. Of note, both of these studies examined the congruency hypothesis using the SAS Autonomy score, a construct that clearly diverges from the *Self-Criticism/Performance Evaluation* factor and has tended to show poor support generally (21).

The congruency hypothesis was not supported for *Attachment Concerns* in that personality × event interactions for this style demonstrated significant but non-specific findings for increases in depression (i.e., personality × event interactions were obtained for both congruent and non-congruent negative events) and non-significant findings for increases in hypomania. Moreover, the significant interactions with *Attachment Concerns* that were found for predicting *peak* depression did not indicate that *Attachment Concerns* acted as a vulnerability to depression. Rather, this personality style served as a buffer against increases in depression when bipolar individuals experienced high numbers of congruent negative events. This result contradicts previous studies that have found sociotropic/dependent styles in interaction with congruent events to predict depression onset or severity in both unipolar and bipolar samples (e.g., 9, 10, 21). It may be that our findings are more consistent with the ways researchers have begun to identify the adaptive aspects of the traditional conceptualizations of sociotropic or dependent personality styles (78–82). For example, the Dependency construct has been divided into maladaptive dependency or Dependence (79) or Neediness (80) versus adaptive dependency or Relatedness (79) or Connectedness (80), with Relatedness and Connectedness being associated with measures of general psychological well-being such as competence, interpersonal warmth, and efficacy. The particular items endorsed by individuals high on *Attachment Concerns* in this study are marked by preference for connectedness, distress

about interpersonal loss, and fear of isolation and aloneness. One might speculate that this style of relatedness would lead a person to engage in relationships in ways that could minimize the stressful impact of a congruent negative life event. However, the buffering effect of *Attachment Concerns* for depressive symptoms in response to congruent negative events must be replicated before any firm conclusions may be drawn.

The current study is the first to examine personality-event congruence for positive events predicting to increases in hypomania. Our significant findings for *Self-Criticism/Performance Evaluation* suggest that positive events in interaction with this personality style may play a role in contributing to hypomanic symptoms. The relevance of positive events to the prediction of hypomania has also been supported by Alloy et al. (57), who found that positive events interacted with an optimistic attributional style to predict increases in hypomania. Thus, further research on the role of positive life events, in particular, positive goal striving and attainment events that are congruent with the psychological concerns of bipolar individuals with a strong *Self-Criticism/Performance Evaluation* personality style would appear to be especially fruitful (14).

#### Strengths and limitations of the current study

There are several methodological advantages to the design of the current study. First, both the life events and diagnostic assessments were interview-based, a method found to be more reliable and valid than self-report instruments (5, 83, 84). Second, the hypotheses were tested prospectively, allowing for a more valid test of theory. Third, the categorization of life events as sociotropic/dependent or autonomous/self-critical was based on psychological meaning rather than situational domains, which improves the match between the personality styles and event domains. Fourth, the congruency hypothesis was tested using daily tracking of symptom changes and life events that is a more precise measurement of the timing of these variables than is typically found in the literature. Fifth, inclusion in the bipolar sample did not depend on help-seeking. Finally, other improvements were incorporated into the current study, correcting criticisms of prior research (e.g., predicting change in depression and hypomania separately, use of dimensional rather than categorical measures of personality styles).

However, the major limitations of this study should also be noted. Most broadly, the generalizability of the present findings is limited

by three factors introduced by the nature of the sample. First, the current sample was limited to students, so it is unclear to what extent these findings would be replicated in community or clinical samples. Second, individuals were diagnosed with bipolar II, cyclothymia, or bipolar NOS, but not bipolar I disorder. Future research will need to examine whether these findings generalize to bipolar I individuals. Third, it must be determined empirically whether the factor structure for the personality styles obtained in the present study would replicate in other bipolar samples. Another potential limitation of this study is that the congruency hypothesis was tested with respect to changes in symptoms, but not necessarily full-blown clinical episodes. The overlap in some cases between the events preceding *peak* symptomatology and the escalation of symptoms leading up to *peak* may present a limitation as well.

#### Conclusion

In conclusion, a personality style focused on performance, high self-standards, and self-criticism may increase vulnerability to both depressive and hypomanic symptoms among individuals with bipolar disorders when they confront life events congruent with this style. In contrast, a personality style concerned with attachment and connectedness to others may buffer against depressive symptoms when bipolar individuals face negative life events.

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