

Neediness and Interpersonal Life Stress: Does Congruency Predict Depression?

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Abstract Dependency is linked to depression in clinical theory and research, although inadequate evidence exists establishing dependency as a stable personality risk factor for depression. The Depressive Experiences Questionnaire (DEQ; Blatt, D’Afflitti, & Quinlan, 1976, *Journal of Abnormal Psychology*, 85, 383–389) has shown two subfactors within dependency, “neediness” or more immature dependency, and “connectedness” or more mature dependency (Rude & Burnham, 1995, *Cognitive Therapy and Research*, 19, 323–340). A 2.5 year prospective study of 168 nondepressed individuals, a subset of the larger Temple-Wisconsin Cognitive Vulnerability to Depression (CVD) Project sample, was used to examine whether neediness was a risk factor for major depression. Results demonstrated that neediness was a stable risk factor for major depression, controlling for concurrent depressive symptoms, but not controlling for past depressive episodes. Further, this study evaluated the congruency hypothesis that individuals become depressed after experiencing stressful life events matching their particular vulnerabilities. No evidence was found for congruency with respect to neediness, as indicated by a nonsignificant neediness \times interpersonal stress interaction. These findings provide partial support for considering neediness a stable depressogenic personality vulnerability. They also augment the accumulating inconsistencies in tests of the congruency hypothesis.

Keywords Dependency · Neediness · Congruency hypothesis · Life stress · Depression

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Introduction

For Ormus Cama it was just a simple matter of life and death. Love was for life, and endured beyond death. Love was Vina, and beyond Vina there was nothing but the void. (Rushdie, 1999, p. 15)

Throughout our fiction, authors have paid tribute to the ecstasy of love and romanticized the pain associated with losing it. Not surprisingly, this sort of talk found its way from fictional to psychological literature and has been a mainstay in our field since its inception. Depression related to loss of love has been continually linked to interpersonal dependency in both clinical theory (e.g., Beck, Rush, Shaw, & Emery, 1979; Blatt, 1974; Bowlby, 1980; Horney, 1945) and cross-sectional research (for reviews, see Blatt & Zuroff, 1992; Bornstein, 1992; Coyne & Whiffen, 1995; Nietzel & Harris, 1990). Dependent individuals have been conceptualized as being highly sensitive to events in interpersonal relationships, relying on others to provide a sense of well-being, having a strong need to keep in close contact with others, experiencing deep longings to be loved, cared for, nurtured, and protected, fearing rejection, separation, abandonment, and loneliness, and having difficulty expressing anger for fear of losing others' support (Blatt, 1974; Blatt & Zuroff, 1992). This conceptualization is reflected in the development of the Depressive Experiences Questionnaire (DEQ; Blatt, D'Afflitti, & Quinlan, 1976), the most widely used measure of dependency. The revised Sociotropy–Autonomy Scales (SAS; Clark & Beck, 1991) and the revised Personal Style Inventory (Robins et al., 1994) are the most commonly used alternative measures of dependency. The use of one or more of these instruments, however, has demonstrated only mixed support for dependency as a stable vulnerability factor for depression.

Dependent individuals are theorized to be more vulnerable to experiencing what Blatt (1974) termed an anaclitic depression, characterized by feelings of weakness, helplessness, and desperate fears of abandonment. To this point, however, support for this hypothesis has been inadequate. Bagby, Schuller, Parker, and Levitt (1994), Franche and Dobson (1992), and Hirschfeld, Klerman, Clayton, and Keller (1983) reported that currently depressed and remitted depressed patients did not differ from each other on measures of dependency, whereas both groups scored higher than nonpsychiatric controls. These findings offered initial evidence that dependency might be a trait-like depressogenic characteristic. In contrast, the results from two other studies indicated that level of dependency might be strongly influenced by patients' mood state. Klein, Harding, Taylor, and Dickstein (1988) found that depressed patients' dependency scores significantly decreased upon remission. Rosenfarb, Becker, Khan, and Mintz (1998) reported that currently depressed women were more dependent than nonpsychiatric controls, whereas women whose depression had remitted did not differ from the control group. The difficulty in teasing apart dependency as vulnerability to depression and dependency as a reflection of context or mood is a criticism that has been levied against this literature (Coyne & Whiffen, 1995) and one that is clearly valid for cross-sectional research in particular.

In response to this criticism, it is necessary to examine whether dependency predicts depression in prospective studies with initially nondepressed individuals. In a sample of 370 genetically high-risk participants (relatives of depressed patients), initial dependency was not related to the likelihood of experiencing a major depressive episode (MDE) over the 6-year follow-up (Hirschfeld et al., 1989). Further, dependency predicted neither severity of the worst period of dysphoria over 12 months in 66 college

women (Zuroff, Igreja, & Mongrain, 1990a) nor postpartum depressive symptoms in 73 women after their first pregnancies (Priel & Besser, 1999). Thus, dependency as traditionally conceptualized and assessed does not seem to predispose a person to the development of major depression.

The inconsistency in the above findings could be due in part to crude conceptualization and measurement of dependency. In line with this explanation, two groups of researchers have independently identified two similar subfactors within the dependency factor of the DEQ (Blatt, Zohar, Quinlan, Zuroff, & Mongrain, 1995; Rude & Burnham, 1995). One subfactor, termed “neediness”, seems to tap a more maladaptive form of dependency, whereas another, named “connectedness”, appears to measure healthier forms of interpersonal attachment. The neediness factor includes items that express intense anxious and helpless concerns regarding potential separation, rejection, or interpersonal loss, all of which are aspects of dependency that are conceptually related to depression. Rude and Burnham (1995) reported that neediness was cross-sectionally related to depressive symptomatology, whereas connectedness was not. This encouraging finding suggests that dependency as traditionally measured (a combination of neediness and connectedness) may have yielded mixed results because of its combination of both maladaptive and relatively more adaptive aspects of dependency. Perhaps examining the relation between neediness and depression will allow for a more adequate empirical test of the depressogenic vulnerability long observed in clinical practice. Of course, in line with Coyne and Whiffen (1995), it is crucial to differentiate between neediness and depression itself by evaluating this hypothesis with prospective data. It has also been argued that neediness must be shown to predict depressive episodes above and beyond the impact of past depressive history (Coyne, Thompson, & Whiffen, 2004). Based on the “scar hypothesis” (Coyne & Whiffen, 1995) and the stress generation hypothesis (Hammen, 1991), failing to control for past depressive episodes may rely on the assumption that major depression does not produce any long-lasting change in the individual’s neediness. This, however, is an extremely conservative strategy for examining the predictive utility of a vulnerability factor such as neediness, and as discussed below, will not be employed in the present study.

In addition to the question of dependency (hereafter called neediness) as vulnerability to depression, the field has simultaneously addressed the question of how neediness leads to depression. According to the congruency hypothesis, individuals become depressed when they experience stressful life events that “match” their particular vulnerabilities. For example, individuals high in neediness should become depressed after experiencing interpersonal stressors that match their neediness concerns. Likewise, those high in autonomy (derived from the SAS) or self-criticism (from the DEQ) are hypothesized to become depressed when experiencing life stressors relevant to their concerns with achievement. Although the congruency of self-criticism and achievement stressors is clearly important to understand, the focus of this paper will remain fully on that of dependency and interpersonal stress. The reason for our choice is mainly due to our investigation’s emphasis on the revised conceptualization of dependency as a combination of neediness and connectedness. As we are seeking to evaluate how this revised approach to measurement clarifies (or fails to clarify) the relation between dependency and depression, we determined that including a more traditional evaluation of congruency as it applies to self-criticism and achievement stressors would be inappropriate.

Studies testing the congruency hypothesis of depression are rife with inconsistencies (for a detailed review, see Coyne & Whiffen, 1995). Most of this literature is plagued by methodological problems such as small sample sizes, seemingly arbitrary discarding of

participants, and statistical analyses that preclude a decisive statement about the temporal relation between life stress and depression. Perhaps the prospective study that best avoids these pitfalls is that of Segal, Shaw, Vella, and Katz (1992), but even this study reported inconsistent findings. Segal and colleagues followed a sample of high-risk remitted depressed individuals for one year, and examined the congruency hypothesis by testing whether dependency scores interact with various indices of interpersonal life stress to account for significant variance in predicting relapse of depression. Nonsignificant interaction (or congruency) terms were found in analyses that multiplied dependency by the cumulative total of interpersonal events, cumulative “stressfulness” of interpersonal events as rated by participants, and total of proximal interpersonal events, or those experienced within two months prior to depressive relapse. Some support was found for congruency, however, in a significant dependency \times proximal stressfulness interaction. All studies to date that set out to evaluate the congruency hypothesis did so using the traditional method of assessing dependency as a unitary construct. In the same way that the revised conceptualization of dependency as neediness and connectedness may prove useful in establishing neediness as a depressogenic risk factor, it may similarly provide us with a better tool for examining the congruency hypothesis.

The present study

In light of the inconsistencies, concerns, and criticisms raised above, we set out to provide a longitudinal evaluation of the congruency hypothesis utilizing the revised conceptualization of dependency as neediness. First, we prospectively examined whether neediness itself may be considered a stable vulnerability for depression in a sample of individuals at high or low cognitive risk for MDEs. We predicted that neediness would remain temporally stable over the course of the 2.5 year follow-up period, and we further anticipated that neediness, but not connectedness or dependency, would be significantly correlated with concurrent depressive symptomatology. Neediness was conceptualized in a dimensional rather than typological way, heeding the advice of Zuroff, Mongrain, and Santor (2004a). We also evaluated the validity of the revised conceptualization of dependency as neediness. That is, neediness should predict MDEs, but dependency and connectedness should not.

While noting the cautions suggested by Coyne and Whiffen (1995) and Coyne et al. (2004), we chose not to control for the effects of past history of depression prior to examining the predictive utility of neediness. It is not clear that this is appropriate if neediness truly is a vulnerability factor for depression. Neediness as a vulnerability could have helped cause the past MDE as well as the current depressive symptoms. Coyne assumes that the past depression caused the neediness, but it could be that neediness caused the past depression. Thus, controlling for past and current depression is a very conservative test of the hypothesis that actually could be misleading with respect to neediness as a vulnerability factor, as such a test attributes variance shared between neediness and depression only to the depression (Alloy, Abramson, Raniere, & Dyller, 1999).

We further sought to test the congruency hypothesis for neediness, that a person high in neediness will become depressed after experiencing negative life events that match their neediness vulnerability (i.e., interpersonal life stressors). Thus, we examined

whether the interaction of neediness and interpersonal life stress significantly predicted MDEs above and beyond the separate effects of neediness and interpersonal stress. Additionally, in order to provide evidence for the discriminant validity of the congruency hypothesis, it would be necessary to demonstrate that interactions between neediness and achievement-related life stress, and dependency/connectedness and interpersonal life stress were nonsignificant predictors of MDEs.

Method

Temple-Wisconsin Cognitive Vulnerability to Depression (CVD) project

The current study is subsumed under the larger CVD project (Alloy & Abramson, 1999), with the selection process as well as characteristics and representativeness of project participants having been described in detail in previous publications (e.g., Alloy & Abramson, 1999; Alloy et al., 2000). In short, CVD Project participants were selected by screening a large sample of Temple University and University of Wisconsin freshmen (about 5500) with the Cognitive Style Questionnaire (CSQ; Alloy et al., 2000) and the Dysfunctional Attitudes Scale (DAS; Weissman & Beck, 1978). Individuals who scored in the highest (most negative) and in the lowest (most positive) quartile on both the CSQ and the DAS were designated as high (HR) and low (LR) cognitive risk for depression, respectively. In the second phase of the screening process, an expanded Schedule for Affective Disorders and Schizophrenia-Lifetime (SADS-L; Endicott & Spitzer, 1978) interview was administered to a randomly selected subsample of the HR and LR individuals. Based on several exclusion criteria (current DSM-III-R or RDC diagnosis of any episodic mood disorder or any other current Axis I psychiatric disorder, current serious medical illness, and past bipolar-spectrum disorder), a final CVD Project sample was identified.

Participants in the present study

One hundred and sixty-eight participants in this study were a subset of those selected for inclusion at the Temple University (TU) site of the CVD Project. Participants were included in the current study if they completed the DEQ at the initial CVD Project Time 1 assessment (only participants at the TU site completed the DEQ), remained in the study throughout the 2.5-year prospective follow-up period, and completed the other questionnaires and interviews of interest. The current sample included 109 females (65%) and 59 males (35%), and was 64% Caucasian, 26% African-American, 4% Asian-American, 3% Latino-Latina, and 3% Other. In the present sample, 52% of the participants were classified as high cognitive risk. The median age of the participants at the initial assessment was 19 ($SD = 2.35$) years. We conducted separate analyses to determine how representative participants in the current sample were of those participating at the TU site of the CVD project. There were no significant differences between students included in our subsample and those excluded because of missing data in terms of age, gender, ethnicity, or cognitive risk. In addition, there were no significant differences in terms of neediness, connectedness, or dependency scores between participants included in the current subsample and those excluded due to missing data.

Measures

Dependency, neediness, and connectedness

The DEQ, a 66-item Likert-type scale, was used to measure dependency, neediness, and connectedness. Scores on the dependency factor were calculated using the weights derived from Blatt et al.'s (1976) sample as recommended by Zuroff, Quinlan, and Blatt (1990b), in order to be consistent with previous research. The original factor structure was recently replicated (Zuroff et al., 1990b). Scores on neediness and connectedness subfactors were calculated based on Rude and Burnham's (1995) factor analysis of the dependency items. The unit-weighted scoring was employed by summing those items that loaded higher than .40 on the respective factor and for which there was at least .10 difference in loading between the factors. The neediness factor consists of 11 statements like, "I become frightened when I feel alone", "I urgently need things that only other people can provide", and the connectedness factor consists of 11 statements like, "I would feel like I'm losing an important part of myself if I lost a close friend", and "I am very sensitive to the effects my words or actions have on the feelings of other people." The dependency scale of the DEQ has demonstrated good internal consistency ($\alpha > .75$), 12-month retest reliability ($r = .79$), and construct validity (Blatt et al., 1976; Blatt & Zuroff, 1992; Mongrain, Vettese, Shuster, & Kendal, 1998; Zuroff, Moskowitz, Wielgus, Powers, & Franko, 1983), as well as concurrent validity with various measures of depressive symptomatology (e.g., Blatt, Quinlan, Chevron, McDonald, & Zuroff, 1982; Brown & Silberschatz, 1989; Whiffen & Sasseville, 1991). Neediness and connectedness scales had good internal consistency (α 's = .79) in our subsample. Two-year retest reliability for both connectedness and neediness were very good in this subsample (r 's = .63 and .72, respectively).

Cognitive risk status

The CSQ and the DAS were used jointly to select high- and low-risk participants for the CVD Project (see Alloy & Abramson, 1999). The CSQ is a revised version of the Attributional Style Questionnaire (ASQ; Seligman, Abramson, Semmel, & von Baeyer, 1979), which assesses individuals' tendencies to make internal, stable, and global attributions. The ASQ was modified in two major ways to create the CSQ. First, the number of hypothetical events for which respondents provided their attributions was increased to include 12 positive and 12 negative events (6 interpersonal and 6 achievement of each). Second, inferences about consequences and self-worth implications of the events were also assessed in addition to attributions. A composite score was computed by summing scores on four inference dimensions (stability, globality, consequences, and self-worth implications) generated in response to the negative events. Findings from the CVD Project indicate that the CSQ composite for negative events had good internal consistency ($\alpha = .88$), one year retest reliability ($r = .80$), and predictive validity for depressive episodes (Alloy et al., 1999, 2000, 2006).

The DAS is a 40-item self-report inventory designed to measure maladaptive attitudes including concern with evaluation, perfectionistic performance standards, pessimism, expectations of control, and causal attributions. The DAS has demonstrated good internal consistency, retest reliability and validity in student and patient samples (e.g., Dobson & Breiter, 1983; Hamilton & Abramson, 1983; Weissman & Beck, 1978).

A 64-item version of the DAS, used in this study, has shown very good internal consistency ($\alpha = .90$), one-year retest reliability ($r = .78$), and predictive validity for depressive episodes (Alloy et al., 1999, 2000, 2006).

Depressive symptomatology

The Beck Depression Inventory (BDI; Beck et al., 1979) was used to assess participants' level of depressive symptoms at the time they completed the DEQ. Numerous studies have established the validity and reliability of the BDI (Beck, Steer, & Garbin, 1988).

Prospective onset of MDEs

An expanded SADS-Change (SADS-C; Spitzer & Endicott, 1978) interview was used to assess DSM-III-R MDEs across the 2.5-year prospective follow-up. In the current study, we coded prospective MDEs as a dichotomous variable, indicating whether or not each participant experienced at least one MDE during the follow-up. In its original version, the SADS-C is used to make current and past diagnoses based on RDC (Spitzer, Endicott, & Robins, 1978) criteria. In addition, features of the Longitudinal Interval Follow-up Evaluation (Shapiro & Keller, 1979) were added to the expanded SADS-C in order to systematically track the course of disorders and symptoms across the follow-up. The expanded SADS-C also included DSM-III-R and DSM-IV diagnoses and was expanded in the same way as the expanded SADS-L for the CVD Project. The expanded SADS-C was administered approximately every six weeks by interviewers who were blind to participants' cognitive risk status and DEQ and BDI scores. Diagnostic interrater reliability for MDEs throughout the follow-up phase was Kappa $> .90$. Details regarding interviewer training may be found in Alloy et al. (2000).

Prospective assessment of life stress

A combination of questionnaire and semi-structured interview was used to assess stressful life events every six weeks over the 2.5 year follow-up. The original Life Events Scale (LES; Alloy & Abramson, 1999; Needles & Abramson, 1990) includes 134 major and minor negative life events that span a wide range of content domains relevant to college students (e.g., family, school, finances, romantic relationships). LES items were developed to minimize ambiguity and redundancy of events, and also to do away with "hierarchical" items where one event is simply a subset of another (e.g., failed an exam is a subset of performing poorly in school). Further, items reflecting obvious symptomatology of depression were eliminated from the LES. At each six-week follow-up, participants were asked to report whether or not they experienced each event over the last six weeks.

Following their completion of the LES, participants were interviewed with the Stress Interview (SI) by a trained interviewer who was blind to their scores on the CSQ, DAS, and DEQ, and diagnoses on the SADS-C. On the SI, the interviewers probed about each endorsed event on the LES to determine if the experience fulfilled the set of predetermined definitional criteria for that particular event. If it did not, the event was labeled "Does Not Qualify" and was not counted towards life stress indices. Interviewers also dated the occurrence of each qualifying life event. Thus, the SI served as a

reliability and validity check on the LES by providing concrete criteria for what kinds of experiences counted for each event and structured probes to determine whether event definition criteria were met by each experience. Life stress scores were derived for the current study by tallying the number of events endorsed on the LES that met predetermined objective criteria as evaluated by the SI. Thus, one life stress score was computed for each participant at each follow-up visit, reflecting the total number of stressful events experienced over the prior six-week interval. Event scores on the LES and SI have shown excellent reliability and validity (Alloy et al., 1999; Alloy & Clements, 1992; Francis-Raniere, Alloy, & Abramson, 2006; Needles & Abramson, 1990; Safford, Alloy, Abramson, & Crossfield, 2005). For example, a rigorous interrater reliability study of 40 SI interviews, in which different interviewers independently interviewed the same participant (within 2 days) with the SI for the same 6-week interval, yielded an average $r = .89$ between interviewers for rating and dating of events. In addition, LES and SI procedures agreed with prospectively reported daily listing of events with high accuracy in a validity study conducted for the CVD Project.

All events were classified a priori into interpersonal, achievement, or other categories depending on the content of the event. The classification was conducted by Alloy and Abramson separately, and then decisions were compared for any discrepancies. Any differences were discussed by the researchers, and a consensus on each item was reached. Decisions about the interpersonal- or achievement-related content of any open-ended items were made according to the same criteria used to categorize the other 134 events.¹

Procedure

Participants completed the CSQ and the DAS during the first phase of the CVD Project selection process, and the expanded SADS-L during the second phase of the selection process. Participants in the final sample completed the DEQ and the BDI at an initial Time 1 assessment, after which they were assessed with the LES, SI, and expanded SADS-C approximately every six weeks for 2.5 years. Participants were reimbursed for their time (see Alloy & Abramson, 1999 for more details about the procedures and payment schedules).

Results

Relations among variables of interest

Zero-order correlations among the cognitive risk variables, dependency, neediness, connectedness, all life stress indices, and MDE's are presented in Table 1. As would be expected given Bornstein's (1992) emphasis on dependency-related cognition as a primary feature of interpersonal dependency, the correlations among the cognitive risk

¹ A separate a priori categorization system was developed by our group (Francis-Raniere et al., 2006) that was designed to specifically tap into the psychological concerns of the dependent or self-critical individual. Each participant's life event indices were computed under both systems, with the indices correlating not smaller than $r = .96$. Therefore, we report only the discussed method in the present study, but clearly our results do not change as a function of our chosen system of event classification.

Table 1 Zero-order correlations among study variables of interest

| | | DAS | CSQ | Need | Conn | Int | Int2 | Ach | Ach2 | MDEs |
|----------------|------|-------|-------|-------|-------|-------|-------|-------|-------|------|
| Cognitive risk | DAS | | | | | | | | | |
| | CSQ | .83** | | | | | | | | |
| Dependency | Need | .60** | .54** | | | | | | | |
| | Conn | .57** | .52** | .56** | | | | | | |
| Life stress | Int | .07 | .04 | .19* | .11 | | | | | |
| | Int2 | .37** | .33** | .32** | .22** | .52** | | | | |
| | Ach | .02 | .01 | .12 | .07 | .89** | .33** | | | |
| Depression | Ach2 | .26** | .22** | .25** | .13 | .51** | .65** | .58** | | |
| | MDEs | .17* | .22** | .19* | .12 | .30** | .40** | .33** | .42** | |
| | BDI | .19* | .18* | .25** | .18* | .15 | .27** | .13 | .19* | .12 |

* $P < .05$ ** $P < .01$

Note: DAS = Dysfunctional Attitudes Scale; CSQ = Cognitive Style Questionnaire; Need = neediness; Conn = connectedness; Int = cumulative interpersonal stress; Int2 = proximal interpersonal stress; Ach = cumulative achievement stress; Ach2 = proximal achievement stress; MDEs = prospective major depressive episodes; BDI = Beck Depression Inventory

variables and neediness/connectedness scores are substantial (r 's ranging from .52 to .60). This indicates that a significant portion of neediness/connectedness as assessed in our study is indeed cognitive, and is indeed maladaptive. Given our sampling procedure of selecting participants based on cognitive risk, and the overlap between cognitive risk and neediness/connectedness, we deemed it necessary to control for cognitive risk status to effectively “undo” our group assignment prior to examining the predictive utility of neediness/connectedness. Thus, by controlling for cognitive risk status in all prospective analyses, we are theoretically controlling for a substantial part of the cognitive variability embedded in the neediness/connectedness constructs, allowing us to explore whether the noncognitive components (motivational, affective, behavioral) of neediness and connectedness may uniquely contribute to our understanding of how dependency is related to depression. While essential, this approach is also quite conservative; that is, it probably underestimates the true contribution of neediness/connectedness to depression by controlling for what is likely a substantial cognitive contribution of these variables.

Is neediness a stable risk factor for MDEs?

We first examined whether any gender differences existed among the DEQ subfactor scores. Although prior research (Rude & Burnham, 1995) found that females scored significantly higher than males on only connectedness, we found that females scored higher on both DEQ connectedness and neediness, $t(166) = 2.59$, $P = .01$, $t(166) = 2.58$, $P = .01$, respectively. For each reported analysis, we first evaluated whether gender significantly moderated the effect of interest. In all cases, interactions with gender were nonsignificant, so all results represent analyses conducted on our entire sample.

To evaluate whether neediness is temporally stable, we first performed a two-year retest correlation analysis. Neediness at Time 1 was significantly related to neediness two years later, $r(109) = .74$, $P < .001$, suggesting that the relative position of participants along the distribution of neediness scores was quite similar at both time points. Further, difference scores between Time 1 and the two-year follow-up were not

significantly different than zero, $t(108) = -.96$, $P = .34$, indicating that absolute scores on neediness remained stable.

We also tested the hypothesis that neediness would be related to concurrent depressive symptomatology as indexed by the BDI. Additionally, it was predicted that dependency and connectedness would not be significantly correlated with BDI scores. Partial correlations were computed, controlling for the effect of cognitive risk status. Scores on the neediness factor of the DEQ were significantly related to concurrent depression, $r(165) = .25$, $P = .001$. However, both scores on the connectedness subfactor and the larger dependency factor were also significantly related to BDI scores, $r(165) = .18$, $P = .02$ and $r(165) = .20$, $P = .01$, respectively. Although the significant correlations for connectedness and dependency with concurrent depressive symptoms were somewhat unexpected, we would predict that if neediness is truly a vulnerability for depression, rather than an indicator or symptom of depression, differences among neediness, connectedness, and dependency would begin to emerge prospectively instead of being present at a single time point.

From these initial analyses, neediness appears to be a stable factor that is also related to concurrent depressive symptomatology. Given the significant relations between connectedness and dependency and BDI scores, however, these cross-sectional results are insufficient for determining whether neediness is a specific vulnerability for depression. In order to more adequately evaluate the role of neediness as a vulnerability for depression, it was necessary to conduct prospective analyses that further pit neediness against connectedness and dependency as predictors of future MDEs.

Turning to our prospective hypotheses, we analyzed the data using hierarchical logistic regression because the dependent variable was prospective onset of MDEs, coded as a dichotomous variable. This allowed us to regress prospective onset of MDEs on the variable of interest, after controlling for the effects of the previously discussed risk factors. It was determined that all continuous predictor variables were distributed normally, and were hence appropriate for use in regression models. We will first present results controlling for cognitive risk, followed by an increasingly conservative test in which we additionally controlled for the effect of concurrent depressive symptoms (see Table 2 for a summary of these analyses).

As hypothesized, when controlling for cognitive risk status, neediness was the only significant predictor of prospective MDEs, Wald statistic = 3.44, $P = .05$. Both dependency and connectedness were nonsignificant predictors of MDEs, P 's > .10. Controlling for both cognitive risk status and concurrent depressive symptomatology, we again found that connectedness and the larger dependency construct were nonsignificant predictors of MDEs, P 's > .14. Conversely, neediness was a marginally significant predictor of MDE onsets, Wald = 2.89, $P = .08$. Although these findings are somewhat less impressive given the smaller effect of neediness, the general pattern of results is the same as when only controlling for risk status. That is, only neediness is implicated in

Table 2 Ability of dependency and its subfactors to predict prospective MDEs

| Factor | Variables controlled | Wald | <i>P</i> |
|---------------|----------------------|------|----------|
| Neediness | Risk | 3.74 | .05 |
| | Risk + BDI | 3.08 | .08 |
| Connectedness | Risk | 0.44 | .51 |
| | Risk + BDI | 0.28 | .60 |
| Dependency | Risk | 2.65 | .10 |
| | Risk + BDI | 2.23 | .14 |

Note: MDEs = major depressive episodes;
Risk = cognitive risk status;
BDI = concurrent depressive symptoms

MDE onsets, even when controlling for cognitive risk status and concurrent depressive symptoms.

Does neediness interact with congruent stressors to predict MDEs?

To test the congruency hypothesis, we again utilized a series of hierarchical logistic regressions, first controlling for cognitive risk status, and then entering the variables of interest. Our approach was to first test whether the neediness \times interpersonal stressors interaction significantly predicted MDE onsets. This, of course, is the key analysis to provide evidence for or against the congruency hypothesis. In addition to controlling for cognitive risk, we also controlled for the “main effects” of neediness and interpersonal life stress. Given the large main effects we found for the impact of life stress on MDEs (see Table 3), it was essential to examine whether the interaction of interpersonal stress with neediness offered incremental predictive validity, above and beyond the main effects. Further, each life stress index was computed in two different ways. For participants who became depressed, events were calculated as either a daily average up until the day of the MDE onset *or* as a daily average only within the two months prior to the MDE onset. This method has been previously employed in the literature (Segal et al., 1992) and was used to address whether an accumulation of stressors versus more proximal stressors have more utility in predicting MDE onsets. For those participants who did not become depressed, a single index of life stress was computed as a daily average over the course of their participation in the study.

In short, none of the neediness \times stress interactions significantly predicted MDEs (see Table 3). Neediness in interaction with either accumulated or proximal interpersonal stress was a nonsignificant predictor of MDEs, P 's $> .24$. As expected, connectedness and dependency in interaction with either accumulated or proximal interpersonal stress were also nonsignificant predictors of MDEs, P 's $> .45$ (see Table 3).

Given the null results found using the traditional method of testing for congruency, we constructed post hoc analyses to provide preliminary data on an alternative conceptualization of congruency. We examined which personality variables made the greatest contributions to the most important predictors of MDEs, namely the two proximal life stress indices. Our findings for these analyses are presented in Table 4. Controlling for cognitive risk status, neediness was the best predictor of interpersonal stress, $F(1, 164) = 7.45$, $P < .01$, but lacked specificity in that it also predicted achievement-oriented life stress, $F(1,164) = 5.15$, $P = .03$. In fact, the effect of neediness on MDEs was mediated by the effects of both interpersonal- and achievement-related

Table 3 Life stress main effects and congruency analyses

| | Life stress index | Wald | P | |
|--------------|--------------------|-----------------|-----------------|------|
| Main effects | Interpersonal | 5.86 | .02 | |
| | Interpersonal 2 | 14.10 | <.001 | |
| | Achievement | 6.37 | .01 | |
| | Achievement 2 | 14.15 | <.001 | |
| | Interactions | Interpersonal | 1.32 | .25 |
| | | with neediness | Interpersonal 2 | 1.38 |
| Interactions | Interpersonal | 0.16 | .69 | |
| | with connectedness | Interpersonal 2 | 0.10 | .75 |
| Interactions | Interpersonal | .57 | .45 | |
| | with dependency | Interpersonal 2 | 0.04 | .84 |

Note: All analyses reported control for cognitive risk status. Interaction analyses additionally control for respective main effects. Indices followed by “2” represent life events experienced during two months prior to MDE onset

Table 4 Predicting proximal life stress

Note: All analyses reported control cognitive risk status. R^2 change represents variance accounted for after controlling effect of cognitive risk

| | Proximal interpersonal stress | | | Proximal achievement stress | | |
|---------------|-------------------------------|----------|--------------|-----------------------------|----------|--------------|
| | <i>F</i> | <i>P</i> | R^2 change | <i>F</i> | <i>P</i> | R^2 change |
| Neediness | 7.75 | < .01 | .05 | 5.15 | .03 | .03 |
| Connectedness | 1.03 | .31 | .01 | 0.12 | .73 | < .01 |
| Dependency | 3.90 | .05 | .03 | 2.96 | .09 | .02 |

proximal stress indices, controlling for cognitive risk status. That is, when neediness and either stress index were entered simultaneously on the second step of logistic regression analyses, neediness was no longer a significant predictor of MDEs (P 's > .29).

Discussion

In light of the historically inconsistent findings regarding dependency as personality predisposition to major depression, and the abundance of similarly ambiguous results surrounding the congruency hypothesis, we sought to illuminate a more focused direction for the future of this literature. Perhaps our most encouraging finding was the additional support for the revised conceptualization of dependency as a combination of both maladaptive (neediness) and relatively more adaptive (connectedness) tendencies towards interpersonal relatedness. Having come to light through the factor analytic findings of Rude and Burnham (1995), the two sub-factors of what was previously known as “dependency” differentially predicted prospective onsets of MDEs in our study, controlling for cognitive risk status and for concurrent depressive symptomatology. That is, neediness, but not connectedness or the larger dependency construct, predicted onset of MDEs. Controlling for these two risk factors likely provides a very conservative estimate of the true relation between neediness and depression. Due to the significant correlations between neediness and the cognitive risk variables (mean $r = .57$) as well as between neediness and concurrent BDI scores ($r = .25$), it is notable that neediness still remains a marginally significant predictor of prospective MDEs. Essentially, the cognitive as well as part of the affective components of neediness have been partialled out, yet predictive utility for neediness remains. It is reasonable to speculate that perhaps the motivational or behavioral components of neediness are responsible for these findings given what has been controlled in our analyses.

As discussed previously, analyses controlling for past MDEs were not conducted due to the assumption built into such analyses that if neediness and past depression are related, it is a unidirectional relationship leading from past MDEs to neediness (the “scar” hypothesis). This assumption has been recently criticized in the literature by Zuroff et al. (2004a), who argued that the evidence for scarring is much more sparse than that for the impact of personality on depression. Further, our findings of two-year retest correlations for neediness (.72) and connectedness (.63) suggest that these constructs have remained relatively stable, regardless of mood episodes or symptoms experienced during the two time points.

After finding the increased predictive utility of neediness (over both connectedness and dependency) for MDEs, we turned to evaluating the congruency hypothesis. In our study, congruency would have been supported if we found that neediness significantly interacted with interpersonal life stressors (but not achievement-related stressors) to predict onset of MDEs. This was not the case. Rather, we found each personality

vulnerability \times life stress interaction to be nonsignificant, after controlling for cognitive risk status and the “main effects” of the respective vulnerability and life stress factors. So, given this pattern of results, what are the implications for congruency? The case for congruency clearly cannot be made given the lack of significant findings in its favor. At first glance, the case against congruency appears quite strong, but upon further inspection may be somewhat weaker. Are there other potential explanations for how the personality vulnerability (neediness) and matching life stress (interpersonal stressors) may be related such that MDE onsets become more likely? Or are our current methods for evaluating the congruency hypothesis simply insufficient?

To address the first of these questions, we performed follow-up analyses to examine which variables made the greatest contributions to the most important predictors of MDEs. Therefore, we examined whether neediness, connectedness, and dependency were differentially predictive of the two proximal stress indices, themselves the strongest predictors of MDE onsets. Support would potentially be indicated for another type of congruency hypothesis if neediness significantly predicted proximal interpersonal life stress, but not achievement-related stressors. Neediness was the best predictor (superior to both connectedness and dependency) of proximal interpersonal life stress, but failed to demonstrate specificity in that neediness also predicted achievement-oriented life stress. Further, both interpersonal- and achievement-related stressors mediated the relation between neediness and MDEs. The case could be made that neediness, although not significantly interacting with life stress to predict major depression, does work to *generate* life stress, which itself is a major factor in MDE onsets. This explanation is quite consistent with Hammen’s (1991) stress generation hypothesis and findings supporting stress generation (Adrian & Hammen, 1993; Daley et al., 1997; Davila, Hammen, Burge, Paley, & Daley, 1995; Priel & Shahar, 2000; Safford et al., 2005). Although our data do not permit a direct evaluation of the stress generation hypothesis, they are consistent with such an explanation. Although the congruency between neediness and generated interpersonal stress was not found, neediness again surfaced as a key factor in predicting MDEs. Perhaps, rather than life stress interacting (in an additive manner) with a personality vulnerability, it is possible that a vulnerability such as neediness may provoke the generation of life stress. If this proves to be the case, personality vulnerabilities like neediness could no longer be accused of defaulting on promissory notes (see Coyne & Whiffen, 1995), but rather would be paying their due in a way previously unanticipated.

Moving on to the second issue that may temper the negative evaluation of the congruency hypothesis, we propose a re-evaluation of the established methodology in this area. In light of rampant inconsistencies throughout the congruency literature, and the inconsistent findings reported in this paper, questioning the adequacy of our methods becomes paramount. Rude and Burnham (1995) and Blatt et al. (1995) followed this advice as it pertains to evaluating dependency as a vulnerability to depression. Given the very ambiguous extant literature on this topic, these two groups re-evaluated how we have traditionally conceptualized and measured dependency. The product of their factor analytic work was to decompose the DEQ’s dependency factor into two subfactors, namely neediness and connectedness. Our findings provide strong support for this revised conceptualization, and we are hopeful that the utility of neediness as personality vulnerability will continue to be investigated.

Given the improvements regarding personality assessment in this area, the next realm to evaluate becomes the conceptualization and assessment of life stress. Although the procedures for gathering life events data that were set in motion by Brown and

Harris (1989) are still largely followed, a handful of recent papers have argued against the traditional method of categorizing life events a priori (Abela, McIntyre-Smith, & Dechef, 2003; Abramson, Alloy, & Hogan, 1997; Kwon & Whisman, 1998; Raghavan, Le, & Berenbaum, 2002). These authors have argued that a priori categorization schemes do not sufficiently tap the meaning that individuals likely assign to each experienced life stressor. Additionally, Kwon and Whisman (1998) suggested that what is commonly called “idiosyncratic” meaning likely varies as a function of the personality vulnerability being investigated. For example, a stressor such as losing one’s job is categorized as achievement-related under any of the extant categorization schemes. However, an individual who is high in neediness is likely to experience the event (losing one’s job) as a failure, but is also likely to assign meaning to the event that is consistent with the neediness vulnerability, e.g., “feeling like I have disappointed my family, feeling hurt by my boss,” etc. Brown and Harris (1989) argued that individuals’ idiosyncratically assigned meaning should not be captured on a life stress measure, but rather circularity should be avoided by utilizing objective ratings that indicate the likely response of the average person to a given event. This method is a sensible approach, but seems to lose its functionality in this particular domain of inquiry. If needy individuals always assign interpersonal meaning to life stressors, does it make sense to avoid circularity by objectively determining that certain events are *only* experienced as threats to one’s sense of achievement? Contrary to prevailing opinion, we argue that needy individuals who assign interpersonal meaning are not “contaminating” life stress measures, but rather are assigning meaning in a predictable way that is based on their personality structures. Choosing not to capture this meaning is not indicative of a pure life stress measure, but rather represents a failure in our methods of assessment.

In response to concerns such as these, some authors have suggested and made use of a proposed alternative to a priori objective categorization. Abela et al. (2003) and Raghavan et al. (2002) both used a narrative approach to assessing life stress in an effort to more completely capture the meaning that individuals assign to events. Whereas the scope of their findings was limited on several accounts (e.g., use of cross-sectional data, assessment of only one life event, dysphoria rather than MDEs as a dependent variable), their results offer some initial encouragement. Both studies found support for the congruency hypothesis, in that events assigned interpersonal meaning interacted with a dependent personality to predict depressive affect.

Our challenge in the future is to adopt a more Kuhnian approach to the evaluation of theory, to consider the bevy of null results not as disconfirmatory of congruency, but rather as indicative of a need to modify our theory or methods such that they become more useful. Reconsidering the mechanism of congruency is one step that must be taken. Does personality vulnerability simply interact with matching life stress to predict MDEs? Or do the two work in another way, such that personality vulnerability leads to the generation of life stress, which itself is a major contributor to MDEs? Additionally, the development of alternative strategies for defining life events as interpersonally- or achievement-oriented will be necessary before a valid evaluation of congruency can be performed. We argue that the inconsistencies and ambiguity in the literature is not a product of a bad theory necessarily, but may be due to methods that have not yet allowed for an adequate test of the congruency hypothesis. We would also like to echo the comments of Zuroff, Mongrain, and Santor (2004b) regarding Coyne et al.s’ (2004) suggestion that inquiry in this area be divided into three relatively distinct categories: clinical theorizing, a program of research linking personality vulnerability to major depression, and research examining personality vulnerability in nonclinical

populations. Explicit within this proposal is the notion that clinical theory be divorced from the empirical research that it originally inspired. Removing theory from the domain of inquiry, the practitioner from the scientist, serves only a divisive purpose, one that will not move our field forward but rather will work to make it stagnant and overly territorial.

In conclusion, our findings lend further support for the revised conceptualization of dependency as a combination of both maladaptive and relatively more adaptive tendencies. Further, it seems that the more maladaptive form of dependency, neediness, has promise as a stable vulnerability for major depression. The high retest reliability of neediness, coupled with its predictive utility for MDEs, suggest that neediness at minimum is deserving of continued empirical evaluation. Neediness also proved to be the strongest predictor of proximal life stressors, which, in turn, were the strongest predictors of MDE onsets. Certainly the reciprocal nature of neediness and life stress, and how the two combine to predict onset of MDEs, is a question that warrants further attention. It is suggested that perhaps a different kind of congruency is at work, with neediness functioning to generate particular forms of life stress, which themselves greatly increase the likelihood of MDE onsets. Additionally, while connectedness did not predict MDEs in the present investigation, it is unclear whether connectedness is simply not as bad as neediness, or whether it may provide a protective function over time. It is also possible that connectedness only serves a protective function when it is present in conjunction with the interpersonal relationships an individual is seeking. We believe these are questions worthy of further exploration in order to fully develop our understanding of how dependency is related to depression.

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