Negative attributional style, hopelessness depression and endogenous depression

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Abstract

The hopelessness theory of depression [Abramson, L. Y., Metalsky, G. I. & Alloy, L. B. (1989). Hopelessness depression: a theory-based subtype of depression. Psychological Review, 96, 358–372.] postulates that a negative attributional style represents a risk factor for a particular constellation of depressive symptoms, termed ‘hopelessness depression’. Four studies tested the relation of negative attributional style to hopelessness depression symptoms versus endogenous depression symptoms. Despite the considerable overlap of hopelessness and endogenous depression symptoms, negative attributional style was more related to the former than the latter, consistent with hopelessness theory. © 2001 Elsevier Science Ltd. All rights reserved.

Keywords: Negative attributional style; Hopelessness depression; Endogenous depression; Hopelessness theory of depression

1. Introduction

According to Abramson, Metalsky and Alloy’s (1989) hopelessness theory of depression, the tendency to attribute negative events to stable and global causes (i.e. a negative attributional style) represents a diathesis, which, in the presence but not the absence of negative life stress, increases vulnerability to a particular constellation of depressive symptoms. The symptoms of this constellation, termed ‘hopelessness depression’, include retarded initiation of voluntary responses, apathy, lack of energy and psychomotor retardation, among others.

Although an increasing number of studies have examined aspects of hopelessness theory (such as the diathesis-stress prediction; see, for example, Alloy, Lipman & Abramson, 1992; Metalsky, Halberstadt & Abramson, 1987; Metalsky & Joiner, 1992; Metalsky, Joiner, Hardin & Abramson,
1993), relatively few studies have examined the construct of hopelessness depression and, among such studies, mixed findings have emerged.

For example, in their study of depression subtypes, Haslam and Beck (1994) applied taxometric methods to the question of whether hopelessness depression and endogenous depression exist as taxa and, unlike results for endogenous depression, findings did not support hopelessness depression as a taxon (Whisman & Pinto, 1997 obtained similar findings, but Joiner, Abramson, Alloy & Metalsky, 1999 obtained some evidence for a hopelessness depression taxon). Spangler, Simons, Monroe and Thase (1993) reported mixed support for the hopelessness subtype, in that the depressions of those at risk for hopelessness depression (i.e. people with a negative attributional style) did differ from other participants’ depressions, but the symptomatology of those at risk did not wholly conform to the predicted symptom profile. Whisman, Miller, Norman and Keitner (1995) obtained similar and slightly more supportive results; depressed patients high in hopelessness experienced more symptoms of hopelessness depression than depressed patients low in hopelessness. In accord with the hopelessness theory, Alloy, Just and Panzarella (1997) found that individuals at-risk for hopelessness depression (i.e. those with a negative cognitive style) exhibited prospectively higher levels and greater within-day and across-days variability of hopelessness depression symptoms but not of other depressive symptoms. Alloy and Clements (1998) reported that hopelessness depression symptoms correlated more with each other than with other depressive symptoms and more than with other psychopathology symptoms, and also found that the negative attributional style by stress interaction predicted hopelessness depression symptoms specifically and did not predict non-hopelessness depression symptoms or symptoms of other psychopathology syndromes. Metalsky and Joiner (1997), in a factor-analytic study of the symptoms of hopelessness depression, found that eight hypothesized symptoms of hopelessness depression did indeed load onto the same factor, but they provided no evidence that hopelessness depression ‘stands out’ from other subtypes or symptoms of depression.

Taken together, these studies provide some support for the validity of the symptom constellation of the hopelessness theory, but this aspect of the theory is in need of further empirical attention, particularly from studies, like those of Alloy and colleagues (e.g. Alloy & Clements, 1998), for example, that place it in “grave danger of refutation” (Popper, 1959). In an effort to accomplish this, the present studies will assess the inter-relationships of negative attributional style, hopelessness depression symptoms and endogenous depression symptoms, in four studies. In general, it was predicted that the correlation of negative attributional style with hopelessness depression symptoms would be significantly higher than the correlation of negative attributional style with endogenous depression symptoms.

2. Study 1

As an initial test of the hypothesis that negative attributional style’s correlation with hopelessness depression symptoms would be higher than that with endogenous depression symptoms, zero-order and partial correlations between the three constructs were examined among an unselected sample of undergraduates.
2.1. **Method**

2.1.1. **Participants**
One hundred and fourteen participants (66 women; 48 men) were drawn from Introductory Psychology classes at a large state university. Assessed in groups of approximately 15–30 students, participants were informed that they would be filling out questionnaires about their personal views, feelings and attitudes, as part of a study on health and behavior.

2.1.2. **Measures**

2.1.2.1. Extended Attributional Style Questionnaire (EASQ; Metalsky et al., 1987) The EASQ consists of 12 hypothetical negative life events. Similar to the original ASQ (Peterson et al., 1982; Seligman, Abramson, Semmel & von Baeyer, 1979), subjects write down the one major cause of a given event, in an open-ended format, and then rate the cause on a 1 to 7 scale separately for degree of internality, stability and globality, with higher scores corresponding to more negative attributions. Consistent with the hopelessness theory, the EASQ generality subscale (mean of stability and globality) for negative outcomes was used. The EASQ has adequate internal consistency reliability (typically falling between 0.80–0.90) and, along with the original scale, has been well-validated (Metalsky & Joiner, 1992; Metalsky et al., 1993, 1997; Needles & Abramson, 1990; see Peterson & Seligman, 1984; Sweeney, Anderson & Bailey, 1986 for reviews of the original scale).

2.1.2.2. Beck Depression Inventory (BDI; Beck, Rush, Emery & Shaw, 1979; Beck & Steer, 1987) The BDI is a 21-item self-report inventory. Each item is rated on a 0 to 3 scale; inventory scores thus may range from 0 to 63. The BDI is a reliable and well-validated measure of depressive symptomatology (Beck, Steer & Garbin, 1988).

2.1.3. Assessment of the hopelessness and endogenous symptom clusters

2.1.3.1. Endogenous symptom cluster Consistent with Haslam and Beck (1994), classical descriptions as well as DSM-III-R criteria were used in selecting five BDI items to tap the endogenous cluster: items 4 (loss of satisfaction), 21 (loss of interest in sex), 16 (early morning awakening), 18 (loss of appetite) and 19 (loss of weight). Scores on these five items were summed to obtain an endogenous cluster score. Haslam and Beck (1994) found that this cluster comprised a taxon.

2.1.3.2. Hopelessness depression symptom cluster To assess the hopelessness depression syndrome, core hopelessness symptoms were emphasized, including items 2 (hopelessness), 13 (difficulty making decisions), 15 (trouble getting started; work difficulty), 16 (sleep disturbance) and 17 (tiredness). Item 15 (trouble getting started; work difficulty) was added to the list of hopelessness symptoms, because it assesses a central aspect of hopelessness depression, retarded initiation of voluntary responses. Scores on these five items were summed to obtain a hopelessness cluster score. These five BDI items are the same set that Joiner et al. (1999) reported comprised...
a hopelessness depression taxon\(^1\), using Meehl’s taxometric procedures (e.g. Meehl, 1973, 1995a, 1995b).

It is notable that item 16 (sleep problems) is included on both the hopelessness and endogenous depression clusters, in keeping with the approach of Haslam and Beck (1994) and Joiner et al. (1999), as well as with seminal descriptions of each cluster. This overlap will only work against the hypothesis that negative attributional style will relate more to one than another cluster.

2.1.4. Data analytic approach

The zero-order intercorrelation matrix was computed. Next, the correlation between EASQ generality and BDI hopelessness depression was compared to the correlation between EASQ and BDI endogenous depression, using Meng, Rosenthal and Rubin’s (1992) technique for comparing correlated correlation coefficients. Finally, each correlation between EASQ generality and a symptom cluster was computed, controlling for the other symptom cluster, consistent with the recommendations of Kendall and Ingram (1989) for constructing stringent specificity tests (cf. Joiner, Katz & Lew, 1997 for a recent application).

2.2. Results and discussion

Table 1 presents the intercorrelations, as well as means, standard deviations and alpha coefficients for all variables. Several features of Table 1 bear emphasis. First, the zero-order correlation of EASQ generality with BDI hopelessness symptoms, which was statistically significant, was slightly higher than the correlation of EASQ generality with the BDI endogenous symptoms,

Table 1

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<th></th>
<th>1</th>
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<tbody>
<tr>
<td>(1) EASQ generality</td>
<td>2.86 (0.96)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(2) BDI hopelessness</td>
<td>0.21*</td>
<td>1.89 (1.81)</td>
<td></td>
</tr>
<tr>
<td>(3) BDI endogenous</td>
<td>0.08</td>
<td>0.66*</td>
<td>1.32 (1.55)</td>
</tr>
<tr>
<td>(4) BDI hopelessness controlling BDI endogenous</td>
<td>0.20*</td>
<td>–</td>
<td>=</td>
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<tr>
<td>(5) BDI endogenous controlling BDI hopelessness</td>
<td>–0.08</td>
<td>–</td>
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<tr>
<td>Alpha coefficient</td>
<td>0.79</td>
<td>0.72</td>
<td>0.74</td>
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\(^a\) N=114. Means, with standard deviations in parentheses, are listed on the diagonal. EASQ=Extended Attributional Style Questionnaire. BDI=Beck Depression Inventory. *p<0.05.

\(^1\) Joiner et al. (1999) considered using items 1 (sadness) and 9 (suicidality) as hopelessness depression items, but did not, because the items displayed properties that were unfavorable to taxometric and structural equations modeling analyses. It is notable that items related to the core feature of the syndrome, retarded initiation of voluntary responses, were included (i.e. items 2, 15 and 17). Nonetheless, for sake of completeness, all analyses using the hopelessness items designated by Haslam and Beck (1994; items 1, 2, 9, 13, 16 and 17) were re-ran. The pattern of results was virtually identical to that reported later. Also, technically, hopelessness (BDI item 2) is not framed as a symptom of hopelessness depression in Abramson et al.’s (1989) theory; rather, it is viewed as the final common pathway to hopelessness depression. However, insofar as those who experience hopelessness depression, by definition, experience hopelessness and following the lead of Haslam and Beck (1994) and Joiner et al. (1999), the item was included in the present study as well. All analyses were repeated with hopelessness removed as an indicator of hopelessness depression, and the pattern of results was not changed.
which was non-significant. Second, as would be expected, the two symptom clusters are highly inter-correlated, a fact that makes for a stringent test of the present prediction that negative attributional style will be more correlated to one than another constellation. Third, there were no differences between the variances of the symptoms measures ($F=1.36$, $p=ns$), allaying concern that the difference in correlations was due to difference in variances.

As noted earlier, the EASQ generality-hopelessness depression correlation ($r=0.21$) was of slightly higher magnitude than was the EASQ generality-endogenous depression correlation ($r=0.08$). However, were these correlations significantly different? To answer this question, the correlations were compared using the $z$-test for difference between correlated correlations (Meng et al., 1992). In fact, the coefficient involving the hopelessness cluster was significantly higher than the correlation involving the endogenous cluster ($z=1.85$, $p=0.032$, one-tailed), consistent with hypothesis.

Despite the predicted and significant difference between these correlations, the difference in absolute magnitude is slight. Interestingly, the difference in absolute magnitude is greater regarding the correlation of EASQ generality with one symptom cluster, controlling for the other. Consistent with prediction, EASQ generality remained significantly correlated with the hopelessness depression cluster, even controlling for the endogenous symptom cluster ($pr=0.20$, $p<0.05$). By contrast, EASQ generality was not significantly correlated with the endogenous symptom cluster when the hopelessness depression cluster was controlled ($pr=-0.08$, $p=ns$).

This pattern of findings provides support for the hypothesis that negative attributional style is specifically associated with hopelessness depression symptoms versus endogenous depression symptoms. At the same time, these results are limited in several ways. For example, differences in correlations were slight and, thus, are in need of replication in a larger sample, which study 2 provided.

3. Study 2

Using a similar sample and methodology, the goal of study 2 was to replicate study 1’s findings on the inter-relations of negative attributional style, hopelessness depression symptoms and endogenous depression symptoms.

3.1. Method

3.1.1. Participants

Five hundred and eleven participants (269 women; 242 men) were drawn from Introductory Psychology classes at a large state university. Assessed in groups of approximately 30–50 students, participants completed questionnaires.

3.1.2. Measures

3.1.2.1. Extended Attributional Style Questionnaire (EASQ; Metalsky et al., 1987) Described in study 1, the negative attributional style was assessed using the EASQ generality subscale (mean of stability and globality) for negative outcomes.
3.1.2.2. Beck Depression Inventory (BDI; Beck et al., 1979; Beck & Steer, 1987) As described in study 1, five BDI items were used to tap the endogenous cluster: items 4 (loss of satisfaction), 21 (loss of interest in sex), 16 (early morning awakening), 18 (loss of appetite) and 19 (loss of weight). Five BDI items were used to tap the hopelessness cluster: items 2 (hopelessness), 13 (difficulty making decisions), 15 (trouble getting started; work difficulty), 16 (sleep disturbance) and 17 (tiredness).

3.1.3. Data analytic approach

As in study 1, the zero-order intercorrelation matrix, as well as partial correlations, were computed for the entire sample.

3.2. Results and discussion

3.2.1. Replication of study 1’s findings

Table 2 presents the intercorrelations and partial correlations, as well as means, standard deviations and alpha coefficients. As can be seen there, the zero-order correlation of EASQ generality with BDI hopelessness symptoms was slightly higher than the correlation of EASQ generality with the BDI endogenous symptoms. Importantly, this difference between correlations achieved statistical significance (z=2.84, p<0.003, one-tailed, using Meng et al.’s, 1992 statistic). As in study 1, findings were somewhat clearer using the partial correlations: EASQ generality remained significantly correlated with the hopelessness depression cluster, even controlling for the endogenous symptom cluster (pr=0.20, p<0.05); by contrast, EASQ generality was not significantly correlated with the endogenous symptom cluster when the hopelessness depression cluster was controlled (pr=0.05, p=ns).

The merit of study 2 was that it fully replicated study 1’s findings. Like study 1, however, study 2 possessed the important limitation that negative life events were not assessed. Insofar as the hopelessness theory predicts an association between negative attributional style and depressive symptoms in the presence but not in the absence of negative life events, this is a key omission, rectified in study 3.

<table>
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<tr>
<th>Variable</th>
<th>1</th>
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<tbody>
<tr>
<td>(1) EASQ generality</td>
<td>3.47 (0.85)</td>
<td></td>
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<tr>
<td>(2) BDI hopelessness</td>
<td>0.29*</td>
<td>2.22 (2.17)</td>
<td></td>
</tr>
<tr>
<td>(3) BDI endogenous</td>
<td>0.20*</td>
<td>0.67*</td>
<td>1.42 (1.59)</td>
</tr>
<tr>
<td>(4) BDI hopelessness controlling BDI endogenous</td>
<td>0.20*</td>
<td>–</td>
<td></td>
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<tr>
<td>(5) BDI endogenous controlling BDI hopelessness</td>
<td>0.05</td>
<td>–</td>
<td></td>
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<tr>
<td>Alpha coefficient</td>
<td>0.77</td>
<td>0.68</td>
<td>0.66</td>
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*a N=511. Means, with standard deviations in parentheses, are listed on the diagonal. EASQ=Extended Attributional Style Questionnaire. BDI=Beck Depression Inventory. *p<0.05.
4. Study 3

The goal of study 3 was to replicate earlier findings on the inter-relations of negative attributional style, hopelessness depression symptoms and endogenous depression symptoms, taking into account the role of negative life events.

4.1. Method

4.1.2. Participants and measures

One hundred and seventy participants (87 women; 83 men) were drawn from Introductory Psychology classes at a large state university. Assessed in groups of approximately 30–50 students, participants completed the Extended Attributional Style Questionnaire (EASQ; Metalsky et al., 1987) and the Beck Depression Inventory (BDI; Beck et al., 1979; Beck & Steer, 1987), both of which were described earlier. Participants also completed the Negative Life Events Questionnaire (NLEQ; Saxe & Abramson, 1987). The NLEQ was developed specifically for use with college students and includes several categories of negative life events (e.g. school, work, family, friends, etc.). Items were rated on a 0 to 4 scale (0 = ‘Never present’; 4 = ‘Always present’) on how frequently they had occurred during the past few weeks and were summed to form a general negative life events score. Scores were also computed using a dichotomous criterion (0 = event absent; 1 = event present). Results were similar to those using the 0 to 4 scale.

The scale is reliable (e.g. Saxe & Abramson, 1987) and valid (e.g. Metalsky & Joiner, 1992; Needles & Abramson, 1990). The NLEQ was administered at T2, covering the interval between T1 and T2, similar to the procedure used by several other investigators (e.g. Barnett & Gotlib, 1988; Needles & Abramson, 1990).

4.1.3. Data analytic approach

As in studies 1 and 2, the zero-order intercorrelation matrix, as well as partial correlations, were computed for the entire sample. Unlike earlier studies, zero-order and partial correlations were also computed for those who reported relatively numerous negative life events2.

4.2. Results and discussion

4.2.1. Replication of earlier findings

Table 3 presents the intercorrelations and partial correlations, as well as means, standard deviations and alpha coefficients, for the entire sample. As can be seen there, the zero-order correlation of EASQ generality with BDI hopelessness symptoms was slightly higher than the correlation of EASQ generality with the BDI endogenous symptoms. Importantly, this difference between

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2 This approach presupposes that negative attributional style and negative life events interacted to predict depressive symptoms (especially hopelessness depression symptoms) among the entire sample. This presupposition was warranted: the EASQ generality x negative events interaction was significantly related to BDI hopelessness symptoms ($p = 0.16$, $t[166] = 2.10$, $p < 0.05$), but not to BDI endogenous symptoms ($p = 0.10$, $t[166] = 1.26$, $p = ns$). The fact that hopelessness symptoms, but not endogenous symptoms, were predicted by the interaction foreshadows results, presented later, that negative attributional style is more related to hopelessness than to endogenous symptoms among those reporting relatively more life stress.
Table 3
Intercorrelations, partial correlations and descriptive statistics for all variables

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<tr>
<td>(1) EASQ generality</td>
<td>3.58</td>
<td>(0.87)</td>
<td></td>
</tr>
<tr>
<td>(2) BDI hopelessness</td>
<td>0.34*</td>
<td>1.22 (1.70)</td>
<td></td>
</tr>
<tr>
<td>(3) BDI endogenous</td>
<td>0.22*</td>
<td>0.76*</td>
<td>0.81 (1.23)</td>
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<tr>
<td>(4) BDI hopelessness</td>
<td>0.27*</td>
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<tr>
<td>(5) BDI endogenous</td>
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<tr>
<td>Alpha coefficient</td>
<td>0.73</td>
<td>0.76</td>
<td>0.65</td>
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*N*=170. Means, with standard deviations in parentheses, are listed on the diagonal. EASQ=Extended Attributional Style Questionnaire. BDI=Beck Depression Inventory. *p<0.05.

correlations achieved statistical significance (*z*=2.49, *p*<0.007, one-tailed, using Meng et al.’s, 1992 statistic). As in earlier studies, EASQ generality remained significantly correlated with the hopelessness depression cluster, even controlling for the endogenous symptom cluster (*pr*=0.27, *p*<0.05); by contrast, EASQ generality was not significantly correlated with the endogenous symptom cluster when the hopelessness depression cluster was controlled (*pr*=-0.06, *p*=ns).

4.2.2. Findings among stressed participants

A similar pattern of findings emerged among those who endorsed relatively high levels of negative events (approximately the top third of the NLEQ distribution was selected; *n*=60; see also Footnote 3). Specifically, the zero-order correlation of EASQ generality with BDI hopelessness symptoms (*r*=0.41, *p*<0.05) was higher than the correlation of EASQ generality with the BDI endogenous symptoms (*r*=0.28, *p*<0.05), a difference that was statistically significant (*z*=1.84, *p*<0.036, one-tailed, using Meng et al.’s, 1992 statistic). EASQ generality remained significantly correlated with the hopelessness depression cluster, even controlling for the endogenous symptom cluster (*pr*=0.31, *p*<0.05); by contrast, EASQ generality was not significantly correlated with the endogenous symptom cluster when the hopelessness depression cluster was controlled (*pr*=-0.10, *p*=ns). Study 3’s findings were consistent with the results of earlier studies, even taking into consideration the role of negative life events.

5. General discussion

The present studies demonstrated that negative attributional style was more associated with hopelessness depression symptoms than with endogenous depression symptoms. This pattern of results lends support to the hopelessness theory of depression (Abramson et al., 1989), which

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3 A fourth study (*N*=112), highly similar to study 3 with regard to sample, measures, procedures and analytic strategy, replicated the results of studies 1–3 with regard to the higher correlation of negative attributional style with hopelessness depression symptoms as compared to that with endogenous depression symptoms and replicated the results of study 3 with regard to findings among those reporting relatively higher levels of negative life events. In addition, in all four studies, gender was examined as a moderator of the relation between negative attributional style and the two symptom composites and in no case did gender serve as a significant moderator variable (i.e. results were similar for women and men across studies).
postulates that negative attributional style is a risk factor for a specific constellation of symptoms, hopelessness depression.

Before further discussing the studies’ results, some cautions and considerations are noted. The use of BDI indicators of hopelessness and endogenous depressive symptoms represented an advantage of the present study, because Joiner et al. (1999) and Haslam and Beck (1994) have provided clear support for these items as valid indicators. On the other hand, this study is not meant to reify these items as indicators of hopelessness depression and future work would benefit from symptom assessment incorporating an array of measures, including the Hopelessness Depression Symptom Questionnaire (Metalsky & Joiner, 1997), as well as measures better suited to assess endogenous symptoms (e.g. Inventory of Depressive Symptomatology; Rush, Gullion, Basco & Jarrett, 1996). Of course, it also should be noted that current results were produced by a nonclinical sample of undergraduates, the vast majority of whom did not score in the symptomatic range of the BDI. Applicability to nosologic depression is indeterminate. Relatedly, the studies’ participants were, on average, in their late teens to early twenties, a time of life which precedes the average age of onset of forms of major depression, including endogenous depression (e.g. Smith & Weissman, 1992). On the other hand, age of depression onset is dropping (e.g. Smith & Weissman, 1992). Furthermore, the age of onset of hopelessness depression may be similar to that for endogenous depression; if so, the average age of the present studies’ participants would not explain why negative attributional style was more correlated with one than with another symptom constellation. A final limitation is that the present studies only examined the attributional component of hopelessness theory; the theory also proposes other diatheses (inferred negative consequences of events and inferred negative characteristics of the self in response to events; Abramson et al., 1989), the relations of which to hopelessness versus endogenous symptoms represent an interesting avenue for future research.

The approach and results of the present studies were somewhat similar to an emerging line of work on the symptom component of the hopelessness theory. Similar to the studies by Alloy and colleagues (e.g. Alloy et al., 1997) and Whisman et al. (1995), the present studies assessed the relation of an etiologic aspect of the hopelessness theory (negative attributional style in the present studies) to the particular constellation of hopelessness depression versus other depression symptoms. These studies converge in the finding that, despite very high correlations between hopelessness depression and other depressive symptoms, the etiologic agents specified by the hopelessness theory (negative attributional style; hopelessness) relate more strongly to hopelessness depression than to other depressive symptoms.

The present studies obtained a significant but low correlation between negative attributional style and depressive symptoms. This result is quite similar to past work on unselected populations (cf. Joiner & Wagner’s 1995 meta-analysis on youth samples) and should not be taken as weakly supportive of hopelessness theory, which predicts a correlation between negative attributional style and hopelessness depression symptoms only in the presence of negative life events. Indeed, in the present studies, the highest correlation between negative attributional style and hopelessness depression symptoms occurred when negative life events were considered.

In summary, the present studies add to an emerging body of research that puts the hopelessness theory of depression to stringent empirical test. The finding that negative attributional style relates more strongly to the hopelessness depression cluster than to the highly associated endogenous symptom cluster represents support for the theory’s predictions.
References


