

The Hopelessness Theory of Depression: A Quarter-Century in Review

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Since the formulation of the hopelessness theory of depression (Psychological Review, 96, 1989, 358) a quarter-century ago, it has garnered considerable interest. The current article presents a systematic review of this theory, including its subsequent elaborations (Rose and Abramson's [Rochester Symposium of Developmental Psychopathology, 1992, University of Rochester Press, Rochester, NY] developmental elaboration; Abela and Sarin's [Cognitive Therapy and Research, 26, 2002, 811] weakest link approach; Panzarella, Alloy and Whitehouse's [Cognitive Therapy and Research, 30, 2006, 307] expansion of the hopelessness theory; and the hopelessness theory of suicide (Suicide Science: Expanding Boundaries, 2000, Kluwer Academic, Boston)), followed by recommendations for future study. Although empirical support was consistently found for several major components of the hopelessness theory, further work is required assessing this theory in relation to clinically significant phenomena. Among the most significant hindrances to advancement in this area is the frequent conceptual confusion between the hopelessness

theory and the reformulated learned helplessness theory.

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Major depressive disorder is a highly prevalent clinical condition, with estimates for lifetime rates of its occurrence ranging from 13.2% to 16.6% (Hasin, Goodwin, Stinson, & Grant, 2005; Kessler et al., 2005). Furthermore, it is a growing public health concern. Indeed, depression is currently the leading cause of the global burden of disease (World Health Organization, 2008). Arriving at a better understanding of the mechanisms underlying risk for first onset and recurrence of this disorder is imperative for advancing prevention and treatment strategies.

Among the most prominent cognitive models of depression to have emerged over the past several decades is the hopelessness theory of depression (Abramson, Metalsky, & Alloy, 1989). In the intervening quarter-century since the publication of Abramson and colleagues' (1989) articulation of this theory, there has been a proliferation of studies examining depression and cognitive vulnerability within its framework, with over 1,400 citations in PsycINFO to date. These subsequent years also have seen a number of elaborations of the hopelessness theory, including a cognitive-developmental pathway through which child abuse contributes to cognitive vulnerability to subsequent depression

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(Rose & Abramson, 1992), the weakest link hypothesis (Abela & Sarin, 2002), Panzarella, Alloy, and Whitehouse's (2006) concept of adaptive inferential feedback, and an account of risk for suicide (Abramson et al., 2000).

The current effort aims to provide a review of the empirical literature that has accumulated over the 25 years as the publication of the hopelessness theory, beginning first with an overview of the theory and its subsequent extensions, including a model for recovery from hopelessness depression. We then present a systematic, point-by-point examination of the existing empirical evidence for different aspects of the hopelessness theory. The current review concludes with a discussion of empirical gaps that remain in the literature and potential avenues for future investigation.

THE HOPELESSNESS THEORY OF DEPRESSION

Background

The hopelessness theory was developed, in large measure, as a response to limitations in Seligman's (1972) learned helplessness theory of depression. This earlier model of depression was based in part on the finding that dogs that were repeatedly exposed to uncontrollable shocks would cease to attempt to escape even when this possibility was later made available to them (Overmier & Seligman, 1967; Seligman & Maier, 1967). In brief, this theory posits that repeated exposure to uncontrollable and aversive environmental stimuli leads gradually to the belief that the aversive situation is inescapable, and a sense of helplessness ensues regarding the situation. This helplessness, in turn, results in depression. This model was limited in that it was unable to explain why certain individuals become depressed when confronted with an uncontrollable stressor whereas others did not (Abramson, Seligman, & Teasdale, 1978).

In what was initially termed a reformulation of the theory of learned helplessness, Abramson et al. (1978) drew on attribution theory to address this issue. They proposed that the causal attribution formed by individuals in response to a negative life event influences their risk for becoming depressed. It was hypothesized that individuals form causal attributions along three different dimensions, from internal to external, from stable to unstable, and from global to specific. According to this

reformulated theory, those who attribute a negative event to internal, stable, and global causes were at greater likelihood of developing depression. This theory would predict, for example, that an individual who has an argument with an acquaintance is more likely to become depressed if they interpret this event as a product of their poor interpersonal ability (internal), which they believe will never change (stable) and will negatively influence all their other social interactions (global). In contrast, the individual is at lower risk for depression if they attribute the same event to the acquaintance's irritability (external), brought about by having a bad day (unstable), and believes this is uncharacteristic of their other social interactions (specific).

This theory was later revised in a more fully articulated form as the hopelessness theory of depression (Abramson et al., 1989). What follows below is a summary of the etiological chain detailed in this theory, including its subsequent extensions, to account for depressogenic risk, progressing from more distal to more proximal processes. This fully elaborated model is summarized in Figure 1.

Developmental Antecedents to Negative Inferential Styles

Although the hopelessness theory originally was largely silent on the antecedents of the development of cognitive vulnerability for depression, Rose and Abramson (1992) provided a developmental elaboration of this theory, in which negative early life experiences, particularly in the form of child maltreatment, figure prominently as a contributing factor to cognitive risk. According to Rose and Abramson (1992), when confronted with a negative life event, the child attempts to come to an understanding about the cause of the maltreatment event, so as to prevent its potential recurrence. Initially, the child may be likely to form relatively benign causal attributions that are external, unstable, and specific in nature (e.g., one's parent was having a bad day). If these events become chronic or pervasive, however, such attributions are repeatedly disconfirmed, increasing the likelihood that the child will instead turn to more depressogenic causal attributions that are internal, stable, and global in nature (e.g., concluding that there is something inherent in oneself that makes one the target of repeated abuse from others). The hopelessness that results regarding the

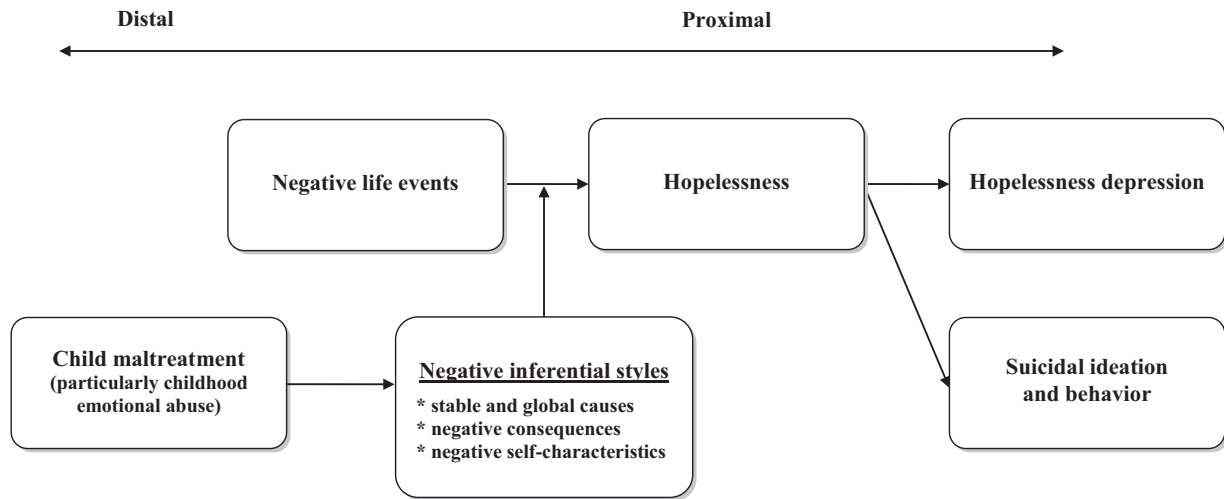


Figure 1. The etiological pathway to depression and suicide delineated in the fully elaborated hopelessness theory.

prospect of addressing the cause of these events, and thus thwarting their future recurrence, places the child at eventual risk for depression. Continual repetition of these events serves to reinforce the depressogenic attributions, which consequently become increasingly trait-like. During childhood, when cognitive styles are still very malleable, they may be described as having a mediational relationship between early negative events and future depression.

Rose and Abramson (1992) further specified that childhood emotional abuse, in particular, has a deleterious effect on the child's cognitive style because, unlike in the case of childhood physical and sexual abuse, the abuse perpetrator provides the negative causal attributions directly to the child (e.g., "you are so stupid, you will never amount to anything"). In contrast, with childhood physical and sexual abuse, the child must form their own causal attributions and thus has the opportunity to arrive at relatively less depressogenic conclusions regarding the cause of the abuse experience. The childhood victim of physical or sexual abuse may still develop a depressogenic inferential style, however, if those abuse experiences should become recurrent. This should also not be taken to imply that childhood physical and sexual abuses are less depressogenic than emotional abuse. Rather, all three forms of abuse may exert a deleterious effect, but primarily through different pathogenic pathways.

Negative Inferential Styles and Depression

The relationship between negative inferential styles, negative life events, and depression changes notably once the individual's cognitive style becomes trait-like in nature. Building on the reformulated helplessness theory, the hopelessness theory reduced the prominence of causal attributions, instead characterizing negative inferential styles as involving three forms of inferential tendencies in response to a negative event: (a) inferring stable and global causes (rather than unstable and specific causes) for the event, (b) inferring negative consequences of the event, and (c) inferring negative self-characteristics.

In a recent elaboration, Abela and Sarin (2002) hypothesized that, rather than examining the three negative inferential styles together as a composite (i.e., stable and global causal attributions, assuming negative consequences, and inferring negative self-characteristics), a more sensitive test of cognitive vulnerability within the framework of the hopelessness theory would be to take into account the relations between them. More specifically, in what they termed the weakest link hypothesis, Abela and Sarin (2002) suggested that an individual is as vulnerable to depression as their most negative inferential style, which should thus serve as a more accurate index of cognitive vulnerability to depression. The weakest link hypothesis, it should be noted, is specific to children on account of the three inferential styles being relatively distinct from each

other during childhood and consolidating into a relatively unitary construct in adulthood (Abela & Sarin, 2002). It also has been expanded beyond hopelessness theory, however, to cognitive vulnerability more generally as conceptualized by multiple theories of depression (Abela & Scheffler, 2008).

Diathesis–Stress

According to the hopelessness theory, these three inferential styles function as cognitive diatheses, which by themselves should not be associated with increased likelihood for developing hopelessness and depression. Instead, only in the presence of negative life events should individuals possessing these cognitive diatheses be at greater risk for becoming hopeless and depressed. This aspect of the hopelessness theory is therefore essentially a diathesis–stress model of depression. In contrast, individuals with these cognitive diatheses should not be at greater risk for depression in the presence of positive events or the absence of negative ones.

Abramson et al. (1989) provided two elaborations of this basic diathesis–stress relationship. First, the specific vulnerability hypothesis of the hopelessness theory posits that individual variability may exist across different domains (e.g., interpersonal or achievement) in the tendency to form negative inferences. Some individuals may form negative inferences primarily in response to negative interpersonal events, whereas others may respond in a similar fashion but primarily to negative achievement events. Only when the cognitive vulnerability domain (e.g., interpersonal) matches the content domain of the negative life event (e.g., breakup of a relationship) does the interaction between the two place the individual at increased risk for developing depression.

In a second important elaboration of this diathesis–stress relationship, Abramson et al. (1989) proposed that the manner in which negative inferential styles and negative life events interact should be consistent with a titration model. That is, the level of life stressors required to result in an episode of depression is inversely proportional to the level of the individual's cognitive diathesis; the lower an individual's cognitive vulnerability, the greater the overall level of life stressors needs to be to interact with the vulnerability and lead to depression manifestation. It then follows that

among highly cognitively vulnerable individuals, relatively mild negative life events are sufficient to initiate the etiological chain toward depression. In contrast, among those in which cognitive diatheses are largely absent, a quite substantial rate or magnitude of life stressors is required to confer risk for depression.

Hopelessness and Hopelessness Depression

Next in the causal chain leading to depression is hopelessness. That is, the hopelessness theory predicts that the interaction between negative cognitive styles and negative life events engenders a sense of hopelessness. This hopelessness, in turn, was hypothesized to be sufficient by itself to bring about depression. To the degree that cognitive diatheses are stable, trait-like constructs, the hopelessness theory provides an account of not only first onset of depression but also of depressive relapse and recurrence.

The hopelessness theory also proposes the existence of a distinct cognitively mediated subtype of depression, hopelessness depression, with hopelessness leading specifically to this depression subtype. A diagnosis of hopelessness depression requires at least two weeks of hopelessness with at least five of the following 11 symptoms:¹ sadness, retarded initiation of voluntary responses, suicidal ideation or behavior, sleep disturbance characterized by initial insomnia, fatigue, self-blame, concentration difficulties, psychomotor retardation, brooding or worrying, reduced self-esteem, and dependency. Hopelessness depression nonetheless overlaps somewhat with other forms of depression, being thought to include, for example, cases of major depression, dysthymia, and endogenous depression.

Negative Inferential Styles and Self-Injurious Thoughts and Behavior

In addition to depression, the hopelessness theory also has been proposed to account for suicidal ideation and behavior (i.e., the hopelessness theory of suicide; Abramson et al., 2000). Given that suicidality is seen as a core symptom of hopelessness depression, and given substantial prior evidence of a link between hopelessness and suicidality (Beck, Brown, Berchick, & Stewart, 1990; Kazdin, French, Unis, Esveldt-Dawson, & Sherick, 1983), Abramson et al. (2000) reasoned that negative inferential styles may confer risk for

suicide-related outcomes through the mediational effect of hopelessness.

Positive Inferential Styles and Adaptive Inferential Feedback

Also featured in Abramson and colleagues' (1989) presentation of the hopelessness theory is a model of recovery from hopelessness depression (also see Needles & Abramson, 1990). According to this model, just as individuals with a tendency to form negative inferences are vulnerable to becoming hopeless and depressed when experiencing a negative life event, individuals with a tendency to form positive inferences about the cause (i.e., global and stable), consequences, and self-characteristics associated with a positive life event are likely to become more hopeful and recover from depression. In this manner, a positive inferential style may function as a resilience factor that interacts with positive life events to produce an ameliorative effect on the individual's sense of hope and mood.

Panzarella et al. (2006) also provided an elaboration of the hopelessness theory to include adaptive inferential feedback, a subtype of social support that involves having a member of one's social network correcting a negative inference with a more adaptive one. According to this expansion, adaptive inferential feedback serves to both temper the development of negative inferential styles and correct existing negative event-specific inferences. When adaptive inferential feedback is successful in correcting a negative inference, the effect of the interaction between negative inferential styles and negative events in predicting hopelessness should be disrupted, with negative inferential styles being gradually replaced with more positive inferential styles.

EMPIRICAL EVALUATIONS OF THE HOPELESSNESS THEORY

Literature Search Strategy

The current systematic review focused on all published studies that have assessed elements of the hopelessness theory. Studies assessing only attributional style were excluded from discussion, the focus instead being on research fully measuring cognitive risk as articulated in the hopelessness theory (i.e., inferential styles).² Insofar as negative attributional style is only one of three negative inferential styles related to depressogenic risk as described in the hopelessness theory, studies that focus

exclusively on depressogenic attributions provide an inadequate test of this theory.³ Rather, such studies offer empirical evaluations of the reformulated learned helplessness theory. Finally, studies in which it was impossible to cleanly separate negative inferential styles from other cognitive risk factors for depression were also excluded from the current review.

Identification of potentially relevant studies was based on a literature search conducted in PsycINFO⁴ with the following title and abstract search string: (hopelessness theory or hopelessness depression or inferential style* or negative inferen* or depressogenic inferen* or negative cognitive style* or depressogenic cognitive) OR ([negative attribution* or depressogenic attribution*] and [Abramson or "hopelessness theory" or "hopelessness depression"]).⁵ Specifications applied to our search were as follows: (a) English-language publication, (b) peer-reviewed publication, (c) published from 1990 (i.e., the year after the hopelessness theory was published) to 2014, and (d) empirical study. The first and second authors independently performed the literature search using these search parameters and inclusion/exclusion criteria. In the few cases where discrepancy occurred in determining eligibility of a given study, consensus was reached through a discussion between the first and second authors. This search strategy yielded 313 articles, 67 of which met the criteria specified above for inclusion in the current review (see Figure 2 and Table S1). Excluded studies did not assess an aspect of the hopelessness theory ($n = 157$), only

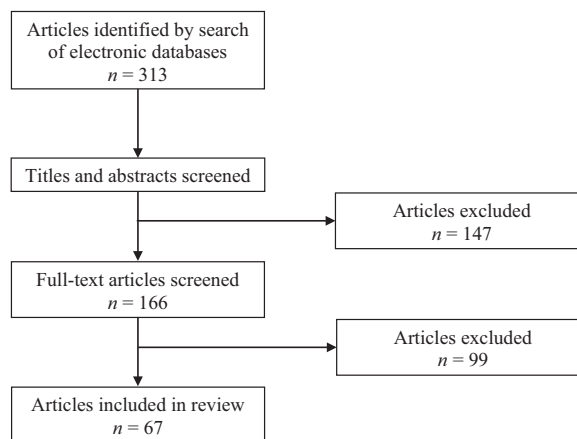


Figure 2. Flow diagram of identified studies.

assessed negative attributional styles ($n = 63$), were not empirical studies ($n = 6$), did not examine negative inferential styles separately from other cognitive vulnerability constructs ($n = 13$), or were not unique studies in terms of testing a component of the hopelessness theory ($n = 7$).

Negative Inferential Styles Characteristics

Three studies have attempted to delineate properties of negative inferential styles as a construct. Empirical evaluations of it as a singular construct, distinct from other formulations of depressogenic vulnerability, are especially important, given acknowledged conceptual overlaps (Abramson et al., 1989) with earlier theoretical conceptualizations presented, for example, by Beck (1967, 1987) and Ellis (1977). In the one set of studies to date specifically addressing this issue (Hankin, Lakdawalla, Carter, Abela, & Adams, 2007), the results of exploratory factor analysis ($n = 950$) and confirmatory factor analysis ($n = 431$) yielded support for negative inferential styles as distinct from Beck's concept of dysfunctional attitudes (Weissman & Beck, 1978) and rumination as articulated in the response styles theory of depression (Nolen-Hoeksema, 2000).

A central aspect of cognitive vulnerabilities, such as negative inferential styles, that has been the focus of much discussion is the degree to which they are stable, trait-like risk factors (see Haeffel et al., 2005; Just, Abramson, & Alloy, 2001, for more detailed discussions of this issue). This issue has several important implications. First, by their very definition, depressogenic diatheses must be relatively stable. If, instead, they resolve naturally with the remission of a depressive episode, they may be more accurately conceptualized as prodromal characteristics of depression inasmuch as they temporally preceded its onset, or epiphenomena to the extent that they do not.

In addition to its etiological implications, this issue has direct bearing on treatment strategies, particularly those that target depressogenic cognitive patterns (e.g., cognitive therapies). For instance, insofar as negative inferential styles are found to be immutable traits, treatment modalities aimed at modifying them are unlikely to meet with a measurable amount of success. Developmental considerations need also to be taken into account in evaluations of the stability of cognitive vul-

nerabilities. Specifically, several researchers have suggested that depressogenic vulnerabilities begin to emerge in early to middle childhood and only become relatively stable in late childhood and early adolescence, at which point they transition from mediating the relation between life stressors and depression to moderating it (Cole et al., 2008; Crick & Dodge, 1994; Nolen-Hoeksema, Girgus, & Seligman, 1992). During this transitional period, the three inferential styles involving causes, consequences, and self-characteristics are believed likewise to consolidate, transitioning from distinct diatheses to a unitary risk factor (Abela & Sarin, 2002). A reason for these developmental differences is that, until the ages of 7–10, children do not begin to comprehend traits as possessing cross-situational and cross-temporal stability (Rholes & Ruble, 1984).

In one study to have assessed this issue in adolescents (Hankin, 2008a; $n = 350$), this cognitive vulnerability was found to be relatively stable, with this being primarily driven by enduring rather than context-dependent processes. Furthermore, the test-retest correlation in this study was only moderately high for negative inferential styles ($r = 0.52$), which seems to suggest that although trait-like in nature, this cognitive vulnerability is by no means immutable and thus may be amenable to therapeutic intervention. This study is informative in demonstrating that by early to middle adolescence, stabilization of negative inferential styles has already occurred. Future research determining the age at which this consolidation occurs may inform prevention efforts through early identification of those at cognitive risk. Finally, in another study (Haeffel et al., 2005, $n = 853$), more negative inferential styles were observed in those with remitted depression than in counterparts with no history of the disorder, which gives weight to the view that this cognitive vulnerability is not simply a concomitant of depression.

Developmental Antecedents to Negative Inferential Styles

Altogether, nine studies to date have assessed potential antecedents of depressogenic inferential styles. Of these, seven have provided evaluations of Rose and Abramson's (1992) developmental extension of the hopelessness theory, three with adult samples and four with children or adolescents. A consistent pattern emerges from the studies assessing this theoretical extension in

adults. Childhood emotional abuse (CEA), but not childhood sexual abuse (CSA) or physical abuse (CPA), was found to be specifically associated with negative inferential styles (Gibb, Alloy, Abramson, & Marx, 2003, $n = 220$; Hankin, 2005, $n_s = 652$ and 75; Liu, Choi, Boland, Mastin, & Alloy, 2013, $n = 66$). Furthermore, this relation was mediated by maltreatment-specific inferences (Gibb et al., 2003). Although there appears to be a consistent pattern of findings in these studies between the three forms of childhood abuse and negative inferential styles, a limitation that must be acknowledged with evaluations of Rose and Abramson's (1992) extension of the hopelessness theory with adult samples is that they are inherently cross-sectional. A measure of caution must be taken in such cases with inferring causality or even temporality in the observed relationship because they cannot account for cognitive vulnerability *prior* to the occurrence of the childhood abuse experiences under consideration.

Providing more proximal assessments of childhood abuse are four studies featuring either child samples (Gibb & Abela, 2008, $n = 140$; Gibb, Stone, & Crosssett, 2012, $n = 100$; Mezulis, Hyde, & Abramson, 2006, $n = 289$) or an adolescent sample (Padilla Paredes & Calvete, 2014, $n = 1,316$). Negative inferential styles have been associated with parental CEA (Gibb & Abela, 2008, $n = 140$; Padilla Paredes & Calvete, 2014) and peer victimization in youth (Mezulis et al., 2006; Padilla Paredes & Calvete, 2014). There is some evidence that negative inferential styles may be particularly related to relational victimization (i.e., victimization intended to inflict harm on an individual's social standing and peer relationships) rather than overt victimization (i.e., direct physical victimization, including hitting and kicking; Gibb et al., 2012). Consistent with Rose and Abramson's (1992) extension of the hopelessness theory, negative inferential styles did not, in turn, predict prospectively occurring victimization.

Collectively, the findings from studies with child and adolescent samples are generally consistent with those in adult samples in supporting the association between CEA and negative inferential styles as articulated in Rose and Abramson's (1992) extension of the hopelessness theory. Nonetheless, the findings on childhood abuse and negative inferential styles, in both youth and adult samples, are subject to several qualifi-

cations. First, as acknowledged in several of these studies, the severity of childhood abuse generally fell in the mild range, this being particularly true for CPA and CSA. The findings that CPA and CSA were generally not associated with negative inferential styles must therefore be regarded as preliminary, pending replication in samples of children with more clinically severe abuse experiences.

What is more, rather than specifying that CPA and CSA should be unrelated to depressogenic cognitive styles, Rose and Abramson (1992) posited that, although they are less likely than CEA to lead to the development of negative inferential styles, they may nevertheless confer risk as they become chronic. That is, with repeated experiences of CPA and CSA, the child is less able to subscribe to relatively benign inferences and becomes more likely to adopt depressogenic inferences (e.g., "Why does this keep happening to me? It must be something about me."). Thus, the absence of an association between these two forms of abuse and negative inferential styles observed in several studies may, in some measure, be a function of their relatively low rate of occurrence in the study samples. In future studies featuring samples with higher levels of CPA and CSA, what may be interesting to observe is whether all three forms of abuse are prospectively associated with negative inferential styles, but with this association being strongest for CEA (e.g., statistically significant differences in beta-weights).

A similar note of caution for interpreting the findings from the current studies is that none examined whether negative inferential styles mediated the relation between childhood abuse and clinically significant depression (i.e., prospectively occurring depressive episodes or symptom severity in depressed samples). Such research is necessary for establishing the mediational role of negative inferential styles in the relation between early abuse experiences, especially CEA, and subsequent depression in a clinically meaningful manner.

Several studies have examined other potential influences on the development of negative inferential styles. In particular, one found maternal negative self-schemata assessed during pregnancy to be associated with negative inferential styles in offspring 18 years later (Pearson et al., 2013, $n = 2,528$). Moreover, support

for a serial mediation model was found, with maternal cognitive vulnerability during pregnancy being mediated by offspring negative inferential styles in predicting depression in offspring. Mezulis et al. (2006) found maternal anger expression and negative maternal feedback interacted with children's experience of negative life events to predict the children's negative inferential styles. A temperamental style in early childhood characterized by withdrawal negativity (i.e., a tendency to respond with distress, fear, and avoidance to novel and negative stimuli; Belsky, Hsieh, & Crnic, 1996) was also observed to interact with negative life events to predict negative inferential styles in later childhood. Together, these two studies highlight the role of maternal influences on the emergence of negative inferential styles. Also examining the role of personality factors, a third study (Lex & Meyer, 2009, $n = 196$) reported that hypomanic personality style and perfectionistic rigidity, putative risk factors for bipolar and unipolar mood disorders, respectively, were not predictive of negative inferential styles in adolescents, suggesting instead that they may be distinct constructs.

Negative Inferential Styles and Depression

Cognitive vulnerability as conceptualized in the hopelessness theory is of clinical relevance insofar as it can account for the etiology of depression. Thus far, 18 studies have either assessed negative inferential styles in relation to depressive symptoms or episodes. Six of these examined negative inferential styles relative to depressive symptoms in nonselected adult samples (Barnum, Woody, & Gibb, 2013, $n = 101$; Fletcher, Parker, & Manicavasagar, 2013, $n = 381$; Haeffel, 2011, $n = 87$; Hong, 2013, $ns = 140$ and 210 ; Hong, Gwee, & Karia, 2006, $n = 242$; Zhou, Chen, Liu, Lu, & Su, 2013, $n = 426$), all finding evidence of a positive relationship. Hong et al. (2006) found hopelessness to mediate the relation between negative inferential styles and hopelessness depression symptoms. The six studies assessing negative inferential styles and depressive symptoms in nonselected samples of children and adolescents were consistent in reporting a positive association (Calvete, Orue, & Hankin, 2013, $n = 1,187$; Dunbar et al., 2013, $n = 165$; Hamilton et al., 2013, $n = 301$; Mezulis & Rudolph, 2012, $n = 113$; Sutton et al., 2011, $n = 550$; Young, LaMontagne, Dietrich, & Wells, 2012,

$n = 111$). Two of these studies (Sutton et al., 2011; Young et al., 2012), however, found substantial overlap between negative inferential styles and other cognitive vulnerabilities for depression (e.g., rumination).

A few points should be noted in interpreting the findings from these studies. First, both studies evaluating negative inferential styles relative to other cognitive vulnerability factors were cross-sectional. Consequently, the temporal relation between the constructs of interest remains unclear. Second, the mean depressive symptom levels across all these studies were generally in the mild-to-moderate range. Thus, research is needed to determine the degree to which these findings extend to clinically significant samples and depression.

Directly addressing this issue, several studies have found negative inferential styles to be associated with clinical depression (Abela, Stolor, Zhang, & McWhinnie, 2012, $n = 60$; Rose, Abramson, Hodulik, Halberstadt, & Leff, 1994, $n = 188$), to be greater in those with remitted depression relative to healthy controls (Haeffel et al., 2005), and to be related to depressive symptoms in individuals who engage in deliberate self-harm (O'Connor, Connery, & Cheyne, 2000, subsample $n = 20$). However, age of depressive onset and proportion of life with depression were unrelated to negative inferential styles. Furthermore, Alloy et al. (2012) found negative inferential styles to be related to lifetime history of depression, but not current depression in adolescents ($n = 413$). One reason for the lack of relation to current depression may be that very few adolescents were depressed at the time of assessment ($n = 8$). The results described here are based on cross-sectional analyses. Consequently, they cannot provide insight regarding the degree to which negative inferential styles are predictive of future depressive episodes after accounting for known risk factors, such as past depression, and the extent to which this vulnerability factor is predictive of first depressive onset. One recent study attempted to address this issue (Nusslock et al., 2011). Negative inferential styles were associated with onset of major and minor depression. This result must be regarded as preliminary, given the small sample ($n = 40$) and, as noted by the authors, the correspondingly small number of major depressive episodes observed ($n = 3$). Nonetheless, this study is important in supporting the need for more work in this area.

Life Events and the Hopelessness Theory

At its core, the hopelessness theory is a diathesis–stress model of depression. That is, negative life events function as “occasion setters” for individuals to become depressed if they possess negative inferential styles. The aforementioned studies therefore offer an incomplete evaluation of this relation between cognitive vulnerability and depression. Indeed, if a main effect for negative inferential styles, but not the hypothesized interaction with negative life events, was detected, such a finding would run contrary with the hopelessness theory.

Remediating this issue and representing the majority of empirical studies to date on the hopelessness theory are 28 studies assessing for the potential interaction between negative inferential styles and negative life events. Nine studies assessed for this diathesis–stress interaction in relation to depressive symptoms in non-clinical samples of adults (Abela, Brozina, & Seligman, 2004, $n = 165$; Abela & Seligman, 2000, adult subsample $n = 77$; Gibb, Beevers, Andover, & Holleran, 2006, $n = 162$; Haefffel, Abramson, Brazy, & Shah, 2008, $n = 248$; Haefffel & Vargas, 2011, $n = 128$; Hankin, 2010, $n = 210$; Lakdawalla & Hankin, 2008, $n = 233$; Metalsky & Joiner, 1992, $n = 152$; Stone, Gibb, & Coles, 2010, $n = 458$). All provided some measure of support for this aspect of the hopelessness theory, with one study also finding this interaction to be partially mediated by hopelessness (Metalsky & Joiner, 1992).

Paralleling these findings, 16 of the 17 studies involving nonselected youth samples, and depressive symptoms as the outcome of interest, found some support for the diathesis–stress component of the hopelessness theory (Abela, McGirr, & Skitch, 2007, $n = 382$; Abela & Payne, 2003, $n = 314$; Abela & Sarin, 2002, $n = 79$; Abela & Seligman, 2000, adolescent subsample $n = 149$; Abela, 2001, $n = 382$; Abela et al., 2011, $n = 1,150$; Abela, Parkinson, Stolow, & Starrs, 2009, $n = 367$; Auerbach & Ho, 2012, $n = 179$; Brozina & Abela, 2006, $n = 418$; Calvete, Villardón, & Estévez, 2008, $n = 856$; Cohen, Young, & Abela, 2012, $n = 206$; Hankin, 2008b, $n = 350$; Kercher & Rapee, 2009, $n = 756$; Lee, Hankin, & Mermelstein, 2010, $n = 350$; Mezulis, Funasaki, Charbonneau, & Hyde, 2010, $n = 366$; Rood, Roelofs, Bögels, & Meesters, 2012, $n = 805$; for the one

exception, see Stange, Alloy, Flynn, & Abramson, 2013, $n = 458$). Several of these studies found support for this relationship using the weakest link approach (Abela & Sarin, 2002; Abela, McGirr, & Skitch, 2007; Abela et al., 2009). Another trend evident across several studies is that this interaction may be specific to depression relative to other symptoms of psychopathology (Abela et al., 2011; Hankin, 2008b; Metalsky & Joiner, 1992; but for an exception, see Brozina & Abela, 2006), and particularly hopelessness depressive rather than general depressive symptoms (Abela & Payne, 2003; Abela & Sarin, 2002; Abela et al., 2009). A notable difference from earlier findings, however, was also observed. Specifically, unlike Metalsky and Joiner (1992), Abela (2001) did not find evidence of mediation by hopelessness.

A common limitation of these aforementioned studies is that a degree of caution should be taken generalizing findings involving mild dysphoria in nonclinical samples to more clinically severe populations. Addressing this limitation, three studies evaluated the diathesis–stress component of the hopelessness theory in relation to clinically significant depression or in clinical or at-risk samples. Abela and McGirr (2007) examined the relation between negative inferential styles, daily hassles, and depressive symptoms in children of adults with a history of depression ($n = 140$). Consistent with the hopelessness theory, cognitive vulnerability based on the weakest link approach moderated the relation between daily hassles and depressive symptoms for girls, but not boys. These findings are qualified, however, by the relatively low levels of depressive symptoms observed in the sample. Similarly, another study found negative inferential styles interacted with daily hassles to predict depressive symptoms in adults with current or a past history of major depression (Abela, Aydin, & Auerbach, 2006, $n = 102$). Another study (Hankin, Abramson, Miller, & Haefffel, 2004) evaluated the relation between negative inferential styles, negative life events, and depressive episodes (total sample $N = 233$, subsample n for diagnostic analyses = 75). Negative inferential styles did not predict depression by itself, but did when interacting with negative life events. Interestingly, however, neither the interaction between negative inferential styles and life events, nor the one between depressive self-schemata and life events was associated with depression when entered into the same

analytical model. As suggested by Hankin et al. (2004), this finding may reflect significant overlap in conceptualization of cognitive vulnerability. It may also be a product of the small sample size preventing the detection of potentially small unique effects in two conceptually similar constructs. In addition, temporality in the relation between negative life events and depressive episodes was uncertain due to both being concurrently assessed in the prospective phase of the study. It is therefore important for future studies to replicate current findings with clear temporal differentiation between life events and the depression they are hypothesized to precipitate.

A final methodological issue worth briefly mentioning is that with the exception of one study (Stange et al., 2013), all studies of the diathesis–stress component of the hopelessness theory utilized self-report measures of negative life events. Although more economical and less labor intensive than interview-based approaches, life events checklists are characterized by several limitations that complicate evaluations of the relation between stress, diathesis, and psychopathology (e.g., vulnerability to mood-congruent recall bias; Brown & Harris, 1978), leading several researchers to recommend the use of life stress interviews whenever feasible (e.g., Hammen, 2005; Monroe, 2008). Given that the one study to utilize an interview-based measure of life events was the lone study not to find evidence of a diathesis–stress interaction (Stange et al., 2013), there is need for additional research in this area featuring interview-based methodologies.

Hopelessness Depression. Thus far, five studies have provided evaluations of hopelessness depression as conceptualized within the hopelessness theory. Two of these submitted symptoms of hopelessness depression to taxometric analysis. The first of these, utilizing a depressed outpatient sample ($n = 531$), found these symptoms to display poor internal consistency (Haslam & Beck, 1994). The second taxometric analysis, utilizing a depressed adolescent inpatient sample ($n = 160$), found these symptoms to exhibit a continuous rather than categorical latent structure, but also reported low internal consistency (Whisman & Pinto, 1997). A limitation acknowledged in this study is that, generally, a sample size of at least 300 partici-

pants is recommended for conducting taxometric analysis (Meehl & Yonce, 1994), the smaller sample size in the current study possibly preventing the detecting of a hopelessness depression taxon if it occurs at a low base rate.

In addition to a taxometric analysis, Whisman and Pinto (1997) assessed the relation between hopelessness and symptoms of hopelessness depression. Significant bivariate correlations were observed for five of six hopelessness depression symptoms and for two of four other depression symptoms. The composite of hopelessness depression symptoms, albeit with the symptom uncorrelated with hopelessness removed, was more strongly correlated with hopelessness than was the composite of other depressive symptoms (internal consistency for the five-item composite of hopelessness depression symptoms = 0.76, interitem $r = 0.40$). In a study with depressed adult inpatients ($n = 80$), Whisman, Miller, Norman, and Keitner (1995, $n = 80$) found those high and low on hopelessness to differ on three of six hopelessness depression symptoms. Consistent with the prior findings by Haslam and Beck (1994), however, the hopelessness depression symptom profile exhibited low internal consistency ($\alpha = 0.42$, interitem $r = 0.11$). Conversely, in another sample of children with elevated depressive symptoms ($n = 39$), Abela, Gagnon, and Auerbach (2007) found evidence of high internal consistency with a more comprehensive measure of hopelessness depression symptoms ($\alpha = 0.81$), with an acceptable mean interitem correlation ($r = 0.28$). Hopelessness was more strongly correlated with the composite of hopelessness depression symptoms than other depressive symptoms. Finally, in three separate outpatient samples ($ns = 1,604, 844, \text{ and } 680$) and a sample of Air Force cadets ($n = 1,404$), consistent support was found for the existence of a distinct cluster of hopelessness depression symptoms, for which a small but significant difference from other depressive symptoms was observed (Joiner et al., 2001).

Collectively, these findings provide mixed support for hopelessness depression as a distinct syndrome. Several qualifications are worth mentioning, however, for interpreting these findings. Three studies selected participants based on their meeting *DSM-III-R* (American Psychiatric Association, 1987) diagnostic criteria

for depression. Given that it is hypothesized to be possible to have hopelessness depression but not meet criteria for *DSM-III-R* depression (Abramson et al., 1989), these inclusion criteria may potentially lead to a systematic exclusion of a subgroup of individuals with hopelessness depression. Moreover, selection of participants based on diagnostic criteria poses a threat to the validity of taxometric analyses insofar as they effectively limit the sample to members of the putative taxon, thus biasing the analyses toward dimensionality (for a detailed discussion of this issue, see Ruscio, Haslam, & Ruscio, 2006). Interestingly, this systematic exclusion of individuals with milder symptom presentations may actually lead to a reduction in the ability to detect a hopelessness depression taxon if it exists. In addition, in four studies, only six to seven of the 11 hopelessness depression symptoms were assessed, which limits the content validity of their measures of this construct. It is worth noting within this context that the fifth study, which generally provided the most support for hopelessness depression as a syndrome, was not subject to this restriction. A related point is that the depressive symptom measures used in these studies were not originally designed to assess symptoms of hopelessness depression, which, in some cases, were based on items from several different instruments. Thus, although these studies are important in validating the need for more research in this area, these issues also particularly point to the need for future studies utilizing instruments specifically designed to measure hopelessness depression (e.g., the Hopelessness Depression Symptom Questionnaire; Metalsky & Joiner, 1997)

Negative Inferential Styles and Self-Injurious Thoughts and Behavior

Two studies to date have evaluated aspects of the hopelessness theory of suicide (Abramson et al., 2000), and a third has assessed the generalizability of this theory to other self-harm behavior (i.e., nonsuicidal self-injury [NSSI]). In the first of those (O'Connor et al., 2000, $n = 40$), although individuals who engage in self-harm behavior did not exhibit more negative inferential styles at a statistically significant level, a trend with a medium effect size was observed ($r_{\text{effect size}} = 0.362$). Although caution should be exercised in

interpreting inherently unstable effect sizes obtained in small sample studies (Kraemer, Mintz, Noda, Tinklenberg, & Yesavage, 2006), this finding lends tentative support for the value of additional work evaluating this aspect of the hopelessness theory. It also should be noted that the definition of parasuicide employed in this study explicitly did not differentiate between suicidal behavior and NSSI. Thus, future work that distinguishes between these two phenomena is necessary inasmuch as they are distinct constructs with differing relations with potential risk factors (Hamza, Stewart, & Willoughby, 2012; Lawlor, Corcoran, & Chambers, 2000; Wichstrøm, 2009).

One study relatively untouched by these issues examined negative inferential styles in relation to suicidal ideation in a sample of college students with elevated depressive symptoms (Kleiman, Law, & Anestis, 2014, $n = 245$), finding negative inferential styles to be positively associated with suicidal ideation, with baseline perceived burdensomeness and thwarted belongingness, as conceptualized in Joiner's interpersonal theory of suicide (Joiner, 2005; Van Orden et al., 2010), mediating this relation. Although important in providing preliminary support for a relation between negative inferential styles and suicidal ideation, this study is qualified by several limitations that also warrant consideration. First, although a high-risk design was used, and as acknowledged in the study, the participants exhibited low levels of suicidal ideation, and thus, generalization to clinically significant phenomena must be necessarily tempered. Second, baseline levels of suicidal ideation were not covaried in the analyses, meaning it was unclear to what degree negative inferential styles temporally preceded ideation observed at the follow-up assessment. It is therefore essential for future research to evaluate negative inferential styles in relation to *changes* in suicidal ideation over a substantial follow-up period with a more clinically acute sample.

Extending the hopelessness theory to account for NSSI, Hankin and Abela (2011) found negative inferential styles to be a significant predictor of this behavior in adolescents ($n = 103$). Given the exploratory nature of this study, future replication is required before firm conclusions may be reached regarding the existence of this association.

Positive Inferential Styles, Adaptive Inferential Feedback, and Recovery From Depression

None of the studies identified in the current review evaluated the model of recovery postulated in the hopelessness theory (Abramson et al., 1989; Needles & Abramson, 1990). Three studies, however, have examined positive inferential styles in relation to depression and related risk factors. Specifically, positive inferential styles were positively associated with hypomanic personality and perfectionistic rigidity (Lex & Meyer, 2009). In addition, healthy controls exhibited more positive inferential styles than did adults with affective illness (Rose et al., 1994), but no differences in this construct were observed between parasuicides and others (O'Connor et al., 2000). For reasons previously noted, the cross-sectional nature of these studies indicates the need for caution in interpreting their findings.

Three additional studies provided preliminary support for the potential therapeutic efficacy of targeting negative inferential styles or enhancing positive inferential styles as articulated in Panzarella and colleagues' (2006) elaboration of the hopelessness theory. In the first of these studies (Dobkin, Panzarella, Fernandez, Alloy, & Cascardi, 2004), undergraduates ($n = 150$) provided with adaptive feedback following the experience of a stressor exhibited less negative inferential styles, which in turn were associated with reduced dysphoria. Following up on this study, Dobkin et al. (2007) examined negative inferential styles in the context of treatment. In this study, family members and friends of depressed patients were trained to provide them with adaptive inferential feedback (AIF), as an adjunct to cognitive-behavior therapy (CBT), with the view of gradually replacing the patients' negative inferential styles with more positive ones ($n = 10$). Patients' depressive symptoms and negative inferential styles were improved over the course of the study. Incidentally, this finding adds weight to the view that although a relatively stable vulnerability factor, negative inferential styles are not immutable, even in adulthood. Given the absence of a control condition, however, it was unclear to what degree the observed improvement in cognitive vulnerability was due to natural regression to the mean, CBT, AIF, or an increased sense of social support patients feel from receiving AIF. In the third study (Peters, Constans, & Mathews, 2011), cognitive

bias modification training for positive attributions was associated with reduced likelihood of making negative self-inferences and less dysphoric mood following poor performance on a difficult task in an undergraduate sample ($n = 54$). Although this study lends promise to the potential modifiability of negative inferential styles, the current findings await replication in a clinically depressed sample with more severe and rigid depressogenic cognitions.

CONCLUSIONS AND FUTURE DIRECTIONS

Receiving much empirical support is Rose and Abramson's (1992) extension of the hopelessness theory, with all studies of emotional abuse and victimization reporting a relation with negative inferential styles. Studies that included other forms of childhood abuse were consistent in finding no evidence that CPA and CSA were associated with cognitive vulnerability. Also common across these studies, however, were relatively low levels of abuse, particularly in the case of CPA and CSA. Therefore, it is imperative for future research to address this issue in longitudinal evaluations of the relation between childhood abuse and negative inferential styles before firm determinations can be made regarding the role of CPA and CSA. Perhaps most critical for establishing the clinical relevance of Rose and Abramson's (1992) extension of the hopelessness theory are studies assessing whether negative inferential styles, in interaction with negative life events, mediate the relation between childhood abuse and subsequent depressive episodes.

A few studies have examined cognitive correlates and characteristics of negative inferential styles. There is preliminary evidence that negative inferential styles are a vulnerability factor distinct from those featured in other prominent cognitive theories of depression (i.e., dysfunctional attitudes and rumination) and exhibit a pattern of stability in adolescence. It would be particularly informative for future studies to follow children prospectively to observe when negative inferential styles begin to emerge, and when they consolidate into a unitary risk factor so as to provide indicators of crucial windows for preventive efforts. Research prospectively assessing negative inferential styles prior to depressive onset, during depressive episodes, and while in remission may also allow for within-person analyses

elucidating important aspects of this construct (e.g., state-dependent components of this vulnerability, and the degree to which depression may leave lasting change in this risk factor, and thus a cognitive scar that heightens risk for depressive recurrence).

General support was found for a relation between negative inferential styles and depression through an interaction with negative life events. Indeed, the aspect of the hopelessness theory that has received the most empirical support thus far is the diathesis–stress interaction. No studies as of yet, however, have evaluated the specific vulnerability hypothesis or the titration model. In addition, the vast majority of the research in this area has involved generally mild depressive symptoms in nonclinical samples. Although it is consistent with the hopelessness theory to find that individuals with negative inferential styles are more likely to have a past history of depression, the most central aspect of the hopelessness theory remains largely unexamined, whether negative inferential styles, in interaction with negative life events, prospectively predict the occurrence of depressive episodes, over and above traditional risk factors (e.g., female gender, past history of depression). Related to this issue, it is not known whether negative inferential styles, interacting with negative life events, are predictive of specific aspects of the course of depression, such as first depressive onset in addition to depressive recurrence, likelihood of depressive relapse, as well as severity and duration of depression. In addition, there are few studies evaluating hopelessness as a mediator of the hypothesized interaction between negative inferential styles and negative life events on depression, with the current support being mixed. Future work addressing these gaps in the literature is essential for validating the clinical relevance of the hopelessness theory.

Given the observation made by some researchers (Abramson et al., 1989; Pössel & Thomas, 2011) that, although notably different in several ways, substantive conceptual overlap exists between the hopelessness theory and other cognitive theories of depression, particularly Beck's (1967, 1987) theory, one major issue to be resolved in future work is the extent to which negative inferential styles are able to account for unique variance in risk for depression, particularly hopelessness depression, that is not better accounted for by other cognitive

theories. For example, among the studies included in the current review, one reported mixed support for the unique role of negative inferential styles in lifetime history of depression when compared to negative core beliefs (Abela et al., 2012). Another detected evidence of significant overlap in the diathesis–stress components of the hopelessness theory and negative self-schemata, with none retaining significant association with major depression when examined in the same regression model (Hankin et al., 2004). A third found negative inferential styles, dysfunctional attitudes, and rumination to be relatively distinct cognitive vulnerability constructs in a set of exploratory and confirmatory factor analyses (Hankin et al., 2007). As mentioned above, the results of the first two studies that yielded mixed or poor support for negative inferential styles as a uniquely distinct vulnerability construct must be interpreted within the context of their small sample sizes ($n_s = 60$ and 75), which significantly limited the ability to detect smaller effects such as may be expected with two independent variables that share a degree of overlap. Thus, the current state of the literature on this issue is inconclusive and awaits further clarification.

With regard to the construct of hopelessness depression, one of the most unexpected findings of the current review is that none of the studies under consideration examined clinically significant hopelessness depression (i.e., depressive episodes) in relation to negative inferential styles or its putative antecedents. The few studies involving hopelessness depression symptoms were consistent, however, in yielding support for a relationship with negative inferential styles. These findings validate the need for more research with clinically significant hopelessness depression. The mixed support for hopelessness depression as a construct makes the proposed distinction of this cognitively mediated subtype of depression perhaps the one part of the theory for which the evidence base is currently most tentative. As noted above, this may largely be due to the issue of inadequate content validity in the existing research in this area. Indeed, there was a trend for greater support for the hopelessness depression construct with more comprehensive assessment of hopelessness depression symptoms.

Along with the previously mentioned need for studies evaluating the hopelessness depression construct

using instruments specifically designed to measure it, it would be important to ascertain what proportion of individuals meeting criteria for hopelessness depression also satisfy criteria for *DSM-5* (American Psychiatric Association, 2013) major depression, considering the overlap in symptoms between the two sets of diagnostic criteria (i.e., sad mood, sleep disturbance, psychomotor retardation, fatigue, guilt or self-blame and reduced self-esteem, concentration difficulties, and suicidal ideation and behavior). Such work would be important in establishing the degree to which these syndromes are overlapping yet still distinct phenomena; insofar as a substantial proportion of cases of hopelessness depression do not satisfy criteria for *DSM-5* major depression and vice versa, a greater claim may be made for maintaining the diagnostic distinction. Furthermore, research evaluating the specificity of negative inferential styles to hopelessness depression is required to validate its being a subtype of depression meaningfully distinct from *DSM-5* major depression and other commonly recognized depression syndromes. More specifically, in addition to establishing negative inferential styles as a predictor of hopelessness depression episodes in general, it would be important to demonstrate this cognitive vulnerability is predictive of episodes of hopelessness depression that do not meet criteria for *DSM-5* major depression and is more predictive of hopelessness depression than *DSM-5* major depression.

In a similar manner, to the extent that the explanatory and predictive value of cognitive vulnerability as conceived within the hopelessness theory lies in its specificity to depression rather than general psychopathology more broadly (Abramson et al., 1989; Haefel et al., 2008), a significant component of validating this theory is in empirical demonstrations that negative inferential styles are either not predictive of common comorbidities of depression or are more strongly predictive of depression and that this relation between negative inferential styles and depression holds after accounting for psychopathology that often temporally precedes depressive onset (e.g., anxiety disorders; Biederman, Faraone, Mick, & Lelon, 1995; Cole, Peeke, Martin, Truglio, & Seroczynski, 1998; Dobson, 1985; Rohde, Lewinsohn, & Seeley, 1991). Thus far, the evidence appears mixed, although there appears to be greater support for a degree of specificity in studies

focusing on nonclinical samples and depressive symptoms rather than diagnoses. Resolution of this issue regarding specificity of negative inferential styles to depression awaits future investigation.

Research investigating the hopelessness theory of suicide is also currently quite limited. Again, longitudinal studies are needed to establish temporality, especially for negative inferential styles as a prospective predictor of suicidal ideation, suicide plans, attempts, and deaths by suicide as discrete outcomes, after accounting for established risk factors (e.g., past suicidal ideation and behavior). Maintaining the distinction between different forms of suicidal ideation and behavior in future studies is important inasmuch as they are related, but nonetheless relatively distinct, clinical phenomena (Beautrais, 2001; DeJong, Overholser, & Stockmeier, 2010).

Even more understudied still is the model of recovery from hopelessness depression articulated in the hopelessness theory (Abramson et al., 1989; Needles & Abramson, 1990). In fact, there have been no studies to date examining positive inferential styles in relation to recovery from clinically significant depression. To some extent, this is a reflection of the greater focus that has been devoted to the cognitive risk component of the hopelessness theory, specifically the study of negative inferential styles. This is also due, in no small measure, to prior studies adopting a measure of positive attributional styles rather than inferential styles and thus providing an inadequate assessment of this construct according to the hopelessness theory.

The marked homogeneity in measurements of negative inferential styles also warrants mention. Notwithstanding the benefit of this in that it facilitates direct comparisons across studies in the literature, there is a need to diversify the paradigms used for measuring this cognitive vulnerability. More specifically, with one notable exception (Abela et al., 2012), all studies identified in the present review that measured negative inferential styles used self-report instruments. Future research measuring negative inferential styles with laboratory tasks, such as has been developed for depressogenic self-schemata according to Beck's (1967, 1987) theory (Alloy et al., 2012), may be especially beneficial. This is important insofar as individuals possess limited insight regarding the mental processes underlying their behavior (Nisbett & Wilson, 1977).

Finally, we noted a considerable amount of conceptual confusion in the empirical literature between the reformulated learned helplessness theory (Abramson et al., 1978) and the hopelessness theory. For example, it was not uncommon for studies ostensibly of the hopelessness theory instead to provide an evaluation of the reformulated learned helplessness theory. In addition, several studies referred to attributional styles when, in fact, providing assessments of inferential styles. Furthermore, the still-prevalent focus on attributional styles (particularly as measured with the Attributional Style Questionnaire; Peterson et al., 1982) according to the reformulated learned helplessness theory (Abramson et al., 1978), rather than inferential styles according to the hopelessness theory, may be among the most significant obstacles to the advancement of the field.

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NOTES

1. The symptom profile for hopelessness depression has been revised since the initial formulation of the hopelessness theory (i.e., retarded initiation of voluntary responses, sad affect, suicide, fatigue, apathy, psychomotor retardation, sleep disturbance, concentration difficulties, and mood-exacerbated negative cognitions). We present here the most recent criteria for this hypothesized disorder subtype (Alloy et al., 2006).

2. In our literature search, we identified two studies which, despite fully assessing negative inferential styles, including causal attributions, consequences, and self-characteristics, were nonetheless excluded from the present review because only responses for the globality and stability subscales were incorporated in their calculation of cognitive vulnerability and submitted to statistical analyses.

3. Articles that described their study as one of attributional style, but in fact provided a complete assessment of negative inferential styles as conceptualized in the hopelessness theory, were included in the current review.

4. We initially also conducted our literature search in PubMed. As no unique studies meeting our inclusion criteria

were uncovered, we present here the results of our literature search in PsycINFO.

5. As we were interested in reviewing the literature on hopelessness theory as it pertains to suicidal ideation and behavior, we initially included the terms “suicid* or self-injur* or self-harm*” in our search string. The addition of these terms yielded no additional search results and thus, in the interest of parsimony, were removed from our search string.

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SUPPORTING INFORMATION

Additional Supporting Information may be found in the online version of this article:

Table S1. Summary of studies examining the hopelessness theory of depression.