

On Second Thought: Where the Action Is in Cognitive Therapy for Depression¹

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In this paper, we attempt to put forward an oft-ignored model for describing cognitive change during cognitive therapy for depression, while discussing the strengths and weaknesses of the three models of change described by Hollon, Evans, and DeRubeis. Along the way we point out some of the conceptual ambiguities regarding cognitive processes and contents as they have been applied in the cognitive therapy literature. We propose that short-term cognitive therapy works primarily through the teaching of compensatory skills. Our proposal is motivated, in part, by the paucity of differential effects of cognitive therapy when compared with antidepressant medications on existing cognitive measures, when at the same time there are reports of differential relapse prevention for these two treatments. In addition, we describe a set of features that a measure of compensatory skills should possess.

KEY WORDS: depression; models of change; cognitive therapy.

During the last decade, the efficacy of cognitive therapy (CT) for the treatment of depression has been demonstrated repeatedly. Four major studies have shown that CT is as effective as antidepressant medication (ADM) in the treatment of nonbipolar, depressed outpatients (Blackburn, Bishop, Glen, Whalley, & Christie, 1981; Hollon, DeRubeis, et al., 1988; Murphy, Simons, Wetzell, & Lustman, 1984; Rush, Beck, Kovacs, & Hollon, 1977).

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Findings from these studies have suggested that on a variety of measures, patients who have received CT do not differ from patients who have received ADM. That is, not only is symptomatic equivalence in short-term outcome the rule, but measures of cognitive and personality variables have also failed to distinguish consistently CT- from ADM-treated groups (Blackburn & Bishop, 1983; Rush, Beck, Kovacs, Weissenburger, & Hollon, 1982; Simons, Garfield, & Murphy, 1984; but see DeRubeis et al., 1988, for an exception).

Evidence is accumulating, however, that when compared with ADM, CT results in fewer relapses following acute treatment (e.g., Blackburn, Eunson, & Bishop, 1986; Evans et al., 1988; Kovacs, Rush, Beck, & Hollon, 1981; Simons, Murphy, Levine, & Wetzel, 1986). It is possible that two treatments for depression produce changes in patients that are identical at the end of treatment (see Simons et al., 1984) even if they have different modes of action (Hollon, DeRubeis, & Evans, 1987). The existence of differential relapse, however, suggests that important differences between ADM- and CT-treated patients must be present at the end of treatment, even if they are not easily discerned at that time.

In this paper, we provide an account for the paucity of findings of differential CT versus ADM effects at the end of treatment in light of the apparent difference in relapse. We do so by proposing (a) that a *compensatory skills model* best describes the primary changes induced by CT, though the repeated application of those skills over time likely results in some accommodation of dysfunctional schemas, and (b) that measures used in research thus far, inasmuch as they have not targeted compensatory skills, have not been suited to detect specific cognitive change produced by CT. We go on to propose guidelines for the development of instruments to assess compensatory skills.

MODELS OF CHANGE

Hollon, Evans, and DeRubeis (1988) have outlined three distinctive and exhaustive models that describe in cognitive terms how CT could produce its effects. We present them here as offering a reasonably exhaustive taxonomy of CT-mediated change. We briefly evaluate each on both conceptual and empirical grounds, arguing for the viability of one of them—the compensatory skills model. The three models are (1) the accommodation model, which is that CT modifies beliefs (schemata) and/or cognitive processes (i.e., processes that underlie the creation, maintenance, and modification of such beliefs); (2) the activation-deactivation model, which is that CT does not induce change in existing beliefs or processes, but rather leads to the deactivation of depressotypic schemata or processes and to the activation of more

benign, preexisting ones; and (3) the compensatory skills model, which is that patients acquire a set of skills they can use to curtail negative thinking both during the acute episode and while in remission following the episode. These skills include metacognitive (Hollon & Kriss, 1984) and planning or problem-solving skills.

We view accommodation and activation-deactivation as hypotheses about *changes* in existing cognitive functions (processes and contents). These would fall under “restructuring” in the terminology used by Arnkoff (1986). In contrast, the compensatory skills model is about the acquisition of *additional* strategies or new procedural knowledge (Nasby & Kihlstrom, 1986). In Arnkoff’s terms, this would be called “coping.” We now turn to the description of these models and the evidence that bears on them.

Accommodation

Hollon, Evans, et al. (1988) define accommodation as “change in the basic cognitive schemata, either *content or process or both*” (p. 237, our emphasis). According to this model, CT induces changes in the basic beliefs held by the patients and/or in the information processes they use. In the following, we discuss content change and process change separately. We will argue that, at least as cognitive processes are now conceived, there is no reason to posit that there are differences between depressives and nondepressives in the *way* they process information, or that depressives’ cognitive *processes* change during successful treatment. On the other hand, we view the question of whether *content* change results from CT as an empirical one. We will now discuss studies that have explored possible schema content changes produced by CT.

The Content Change Hypothesis

The content change hypothesis is that depressive symptoms, including the negative tone of “automatic thoughts” (Beck, Rush, Shaw, & Emery, 1979), are altered in CT by virtue of change in schemata. This is the model of change assumed by many to account for short- and long-term CT-induced change (e.g., Kovacs & Beck, 1978). For example, if the patient changes her belief that she needs to be liked by everyone she encounters, she might consequently become less upset by specific instances of rejection; that is, her thoughts (inferences) will be less negative.

In order to show that change in schemata is specific to CT, or at least does not occur in a noncognitively based treatment such as ADM, the measure of schema must first be substantially independent from measures of affective symptoms. Otherwise any treatment-induced change in symptomatology will result in change in the purported schema measure,

regardless of treatment. The schema measure must also change considerably in CT, and substantially less in ADM. However, several studies (e.g., Simons et al., 1984) have found that changes in measures mean to assess schemata are equivalent in magnitude following ADM and CT.

The Dysfunctional Attitude Scale (DAS; Weissman, 1979), one of the measures most frequently employed in this line of research to tap schematic content, has been used in relevant research designs. Simons et al. (1984) reported no difference between posttreatment DAS scores for CT and ADM patients. DeRubeis et al. (1988) obtained similar results, though they did discover a trend in favor of CT-treated patients when only positive treatment responders were considered. Thus, it appears that changes in these dysfunctional attitudes are not specific to CT, though this conclusion must still be tentative.

Several investigators have compared remitted depressives' DAS scores with those of normals (Dobson & Shaw, 1986; Eaves & Rush, 1984; Hollon, Kendall, & Lumry, 1986; Hamilton & Abramson, 1983; Silverman, Silverman, & Eardley, 1984), allowing for a test of the independence of the DAS from mood. In these studies, the remitted depressives had received a variety of treatments (usually involving ADM), but they had not received CT. Silverman et al. (1984) found that DAS scores of remitted depressives (following ADM) did not differ from those of normals. Similarly, Hamilton and Abramson (1983) reported that depressives were no longer different from nondepressed psychiatric patients or from normals on the DAS following medication and/or noncognitive therapy. Results consistent with these were also reported in the Hollon et al. (1986) comprehensive study of the DAS. These studies suggest that the DAS improves to near normal levels with remission from depression, even when remission is achieved through treatments other than CT.

There have been two studies with findings at apparent odds with those described above. Both Dobson and Shaw (1986) and Eaves and Rush (1984) found that depressives remained higher than controls on the DAS even after remission (following noncognitive therapy). In our view, however, there are plausible artifactual sources for the discrepancy between these studies and those described above.³

³In the Eaves and Rush study, the control group had lower DAS scores than have generally been reported, suggesting a possibly atypical normal sample. If a pooled control group is used, derived from all five aforementioned studies, Eaves and Rush's remitted depressives are less than 1 standard deviation higher than the pooled normal group on the DAS. In the Dobson and Shaw study, the remitted depressives were still, on average, mildly depressed (mean BDI = 12.8). Since the DAS covaries considerably with level of depression, it is not surprising that the "remitted depressives" had higher DAS scores than the controls, whose mean BDI was 3.7. In order to address the question of the stability of the DAS in the context of return to normal depression levels, the remitted sample must be equivalent in severity of depression to the control sample against which it is compared. The interested reader may write to the first author for relevant tables and an expansion of this point.

Thus, results from studies using the DAS do not offer strong support for the hypothesis that accommodation is specific to CT (i.e., occurs more in CT than in other treatments). If we take changes on the DAS to represent accommodation, then we see that accommodation occurs in noncognitive therapies as well as in CT. But, as Segal (1988) has argued, the self-report format of the DAS may make it a poor measure for assessing cognitive schemata.

It is not clear, however, what a good measure of schemata would look like. This is in part due to the vagueness of the schema concept and to uncertainty about appropriate ways to measure changes in schemata. Our impression from the literature on cognitive therapy is that most authors do not clearly distinguish schemata, attitudes, and beliefs (for a similar view, together with some suggestions about defining what a schema is, see Power & Champion, 1986). Ingram and Kendall (1986) point out another problem with the current concept of schema since it denotes both the cognitive structure and its content.

In attempting to define schemata, some theorists view them as “deeper” or more “central” beliefs than “automatic thoughts” (Beck et al., 1979), which are more “superficial” and “peripheral” (Safran, Vallis, Segal, & Shaw, 1986). The cognitive model assumes that schemata are also more general in the sense of being at a more basic level in a hierarchy; i.e., automatic thoughts can be derived from more central beliefs or schemata (Dobson & Shaw, 1986). In the same spirit, Hammen (1988) distinguishes between “transitory, concomitant depressive cognitions and vulnerability cognitions” (p. 87). But, as she points out, valid measures of cognitive vulnerability have yet to be developed. Schemata are also said to differ from automatic thoughts in that they are less available to consciousness and more general in scope. Finally, important schemata have been described as latent (Kovacs & Beck, 1978), yet currently available measures do not appear capable of activating latent schemata (Alloy, Hartlage, & Abramson, 1988).

Another widely used measure of cognition is the Attributional Style Questionnaire of Seligman and colleagues (ASQ; Seligman, Abramson, Semmel, & von Baeyer, 1979; Peterson & Seligman, 1984). This measure is derived from the attributional reformulation of the learned helplessness model of depression (Abramson, Seligman, & Teasdale, 1978). This model claims that individuals who habitually explain the causes of bad events in internal (“it’s my fault”), stable (“it will always be like that”), and global (“it’s going to undermine everything I do”) terms are at risk for depression following the occurrence of bad events. The ASQ is assumed to tap the subject’s automatic or predominant way of ascribing causes (Peterson & Seligman, 1984). On this assumption, change on the ASQ would reflect accommodation of schemata.

The effect of CT on the ASQ has been examined in two studies, one of which included an ADM-treated comparison group. Examining results

from an outcome study of ADM versus CT, DeRubeis et al. (1988) found no significant overall difference between ADM- and CT-treated patients at the end of treatment on the ASQ. However, they did find that, considering only those patients who improved in each treatment, the CT-treated patients showed significantly greater change than did the ADM-treated patients. Seligman et al. (1988) showed that, following CT, unipolar depressives did not differ from normal controls on the ASQ.

Two research groups have compared the ASQ of remitted depressives with those of normals. Hamilton and Abramson (1983) showed that remitted depressives (who did not receive CT) did not differ from normal controls on this measure following treatment. On the other hand, Eaves and Rush (1984) found that remitted depressives still exhibited more depressotypic attributions than did normal controls.⁴

The construct measured by the ASQ, then, shows some promise as an index of a specific effect of CT. Any future effort to discern specific effects of CT should include, at least, an attempt to replicate the DeRubeis et al. (1988) findings. But it is not clear how one should interpret the ASQ findings in terms of the three models discussed in this paper. Although the ASQ is thought to be a measure of schema content or of a cognitive process, at least in CT-treated patients changes in the ASQ could reflect the acquisition of compensatory skills. On this alternative account, changes on the ASQ reflect the ability to recognize upsetting attributions and to consider more benign ones.⁵

In summary, in order to test hypotheses about changes in schemata that are CT-specific, not only must a clear concept of schema emerge but methods to assess relevant schemata must progress and then be applied to patients who undergo treatment. To date, the DAS and ASQ have been used to this end, but results using the DAS have been disappointing, with the ASQ showing greater promise. Other methods, not yet tested but which may prove effective, include the depth of processing paradigm (Derry, & Kuiper, 1981; Hammen, Marks, Mayol, & deMayo, 1985). But initial results from studies employing these methods seem to indicate that these cognitive measures, too, are related to transient mood (Hammen, 1988). More recently, Segal (1988) critically reviewed several methods that have been proposed as possible sche-

⁴Again, as was true of the DAS, the Eaves and Rush control group may have been atypical; its mean on the ASQ was three-quarters of a standard deviation lower than the Seligman et al. (1988) controls.

⁵Of course, the same argument could be made regarding the DAS, that attitudes endorsed by a patient at the end of CT might not be his spontaneously held beliefs but instead may reflect reconsideration of spontaneously held beliefs in favor of more benign ones. In fact, our concern is that any measure of schemata that allows the subject to ponder his responses would be ambiguous as to whether the subject's responses are spontaneous or instead reflect "second-guessing."

ma measures, and he proposed new directions for the development of mood-independent measures of schemata, but none have been used to detect CT-specific change.

The Process Change Hypothesis

Now that we have presented the limitations of the content change hypothesis, we turn to the process change hypothesis. This version of the accommodation model (see Hollon & Kriss, 1984) asserts that CT can produce changes in cognitive processes. We have difficulty with the notion of a therapy changing cognitive processes, and some of those difficulties are shared by Hollon and Kriss (1984) and will be exemplified below. We will argue that examples given in the literature of process changes that might be induced by CT (Hollon & Kriss, 1984; Ingram & Hollon, 1986) more readily fit definitions of content change or of acquisition of compensatory skills.

Ingram and Hollon (1986) have offered three candidate processes that might be altered by CT: (1) a shift in emphasis from "automatic" to "controlled" processing, (2) a de-emphasis of self-focused processing, and (3) a shift toward using alternative schemata. In the following, we describe these processes and question whether they are changes in cognitive process rather than changes in cognitive content or the addition of compensatory skills.

Automatic versus Controlled Processing. In principle it is possible that depressives use relatively more automatic processing (Schneider & Schiffrin, 1977) than do normals. But writers such as Beck (1976) who discuss increased automatic processing in depression refer, in fact, to the valence of the automatic thinking, not to the proportion of automatic thinking to controlled thinking. We do not suppose that Beck, for example, has in mind that depressives generate more positively valenced automatic thoughts than normals! If we are correct, then one has to refer to such processes as domain- or valence-specific. The critical variable is the content or valence of (automatic) thoughts. Thus, we propose that the automatic versus controlled distinction as used by Beck refers more to differences in content or tone than to a difference in process.

Ingram and Hollon (1986) also propose that CT helps the clients change from an automatic mode of processing to a more controlled mode. Again, a CT-treated patient will not become more "controlled" in every domain. That is, we hope he will not begin, as a result of treatment, to ponder and question the meaning and relevance of red lights. Clearly, the post-CT remitted patient has not become more deliberate across all situations. If he has become more deliberate at all, it is selective. To become more "controlled," in our view, would mean that he has learned to recognize the kind of situations or thoughts or emotions for which he should access new procedural

knowledge (Nasby & Kihlstrom, 1986) acquired during therapy. This is best viewed as acquisition and use of compensatory skills.

Self-Focused versus Non-Self-Focused Processing. It could be that depressives tend to be more self-absorbed than nondepressives and that CT specifically alters this tendency. But empirical support for this proposition is lacking. When depressives are found to be more self-focused than normals it turns out to be valence-specific (see Ingram & Smith, 1984; Ingram, Lumry, Cruet, & Sieber, 1987). That is, the depressive has predominantly negative thoughts about himself, rather than excessive self-focused processing per se (Musson & Alloy, 1988). This, again, is best characterized as pathology of content, not process.

Shift Toward Using Alternative Schemata. Ingram and Hollon (1986) propose that patients who have improved during CT have developed the ability to retrieve alternate, more positive schemata or new procedural schemata when encountering dysphoric situations, emotions, or thoughts. It is not clear why this is considered a change in process rather than an addition of new knowledge or skills along with heuristics to cue the retrieval of the new knowledge.

The Accommodation Model: Summary

In the above, we presented the two versions of the accommodation model. The major hypothesis derived from the content change version of the accommodation model predicts that greater change in schemata will be observed in patients receiving CT compared with patients receiving a non-cognitive therapy (such as ADM). Published studies of the DAS have not provided support for this hypothesis. Furthermore, positive results on the DAS would still remain ambiguous in terms of the models of change, since it is difficult to ascertain whether a subject's responses reflect his spontaneous beliefs or his reassessment of those beliefs. Finally, studies of the DAS lead to the conclusion that it is too mood-dependent to be a proper schema measure.

Similar studies of the ASQ have led to conflicting but promising results and thus need to be replicated. Nevertheless, questions about which of the three models is supported by change in ASQ have been raised. Although researchers appear to have used the ASQ as a measure of schemata, we propose that the ASQ acts as a measure of compensatory skills when it is applied to CT-treated patients; that is, CT-induced changes on the ASQ reflect a newfound ability to recognize upsetting attributions and to consider more benign ones.

The process change hypothesis does not appear to sustain close scrutiny. Not only is there no evidence that supports the view that CT induces transformations in the patients' cognitive processes, it is unclear how such evidence would be gathered. We have argued that available examples of process change are better considered as either changes in content or acquisition of new knowledge. In this we agree with Nasby and Kihlstrom (1986) that "one can trace most of the cognitive problems of most clients to specific domains of content. . . . The mechanics of the information processing systems per se operates just fine" (pp. 218–219). So what may at first appear to be an aberrant process may indeed be better characterized as aberrant content; i.e., depressed people have depressing thoughts.

Activation-Deactivation

According to this model, CT does not lead to schema *change* (accommodation) but rather deactivates the depressive schema while making another schema available. The depressive schema becomes latent and remains intact. As such, it can again become activated in toto, if and when a sufficient trigger occurs. We propose that this model best articulates a cognitive explanation of ADM-induced, but not CT-induced, changes. In our view, there are two main reasons why this model best characterizes how biological treatment leads to the cognitive changes reported in the literature.

First, such a model is consistent with the temporary nature of the ADM-induced cognitive changes, since it implies that the risk for relapse among patients whose depressotypic schemata have been merely deactivated remains quite high. Second, if our account of ADM-induced cognitive change is correct, then we predict that medication would be most effective with patients whose available schemata are positively valenced. If medication works by deactivating the depressotypic, schemata and making other, more positive schemata available, then the more positive schemata the person has that can be activated, the greater the probability that, once activated, remission of symptoms will occur. This accords well with findings that chronicity and poor premorbid history are poor prognostic signs for antidepressant medication treatment (see Bielski & Friedel's (1976) review).

Might the activation-deactivation model also fit the cognitive changes induced by CT? The same relation between premorbid history and treatment response that holds for ADM appears to hold for CT also (Hollon & Najovits, 1988). And, in principle, CT and ADM could each produce the same effect on cognition (Beck, 1984a, 1984b; Hollon et al., 1987; Simons, 1984). However, findings of reduced rate of relapse among CT-treated patients sug-

gest that the activation-deactivation model alone cannot account for CT-induced changes.⁶

Compensatory Skills

According to this model, CT does not reduce the tendency for depressives to generate negative thoughts in distressing situations, but rather it inculcates a set of skills that helps them deal with these negative thoughts when they do occur. Specifically, Hollon, Evans, et al. (1988) refer to the acquisition of "behavioral or cognitive self-management skills" (p. 238). Among these skills the authors emphasize metacognitive skills. These would include, for example, the ability to generate accounts or explanations for events other than those the depressive generates automatically, and the ability to look for and generate evidence germane to the competing accounts (Baron, 1985). Problem-solving skills include the ability to generate specific and detailed plans consistent with one's goals, and the ability to weigh and consider the advantages and disadvantages of various alternative plans.

There are several reasons for proposing that this model of change best characterizes the therapeutic effects of CT. The model would explain how CT-treated patients remit and remain nondepressed even if depressotypic schemata are activated. According to this view, CT-treated depressives may continue to generate depressotypic primary appraisals more often than normals do, especially when confronting personally relevant, stressful situations.⁷ But instead of settling on these initial negative inferences, they question and challenge them.

Teasdale (1985) has discussed the role of compensatory skills across several of the structured psychotherapies for depression. He has argued that several factors early in therapy, among them the successful application of "coping responses" by the patient to previously overwhelming problems (including depressotypic appraisals), serve to alter the patient's perception of the uncontrollability of his depression. In this way, according to Teasdale, the use of compensatory skills helps to alleviate a major source of distress

⁶We argued in the discussion of the accommodation model that cognitive processes themselves cannot be the focus of change in CT. We have also shown that the cognitive processes discussed in the literature do not apply across situations or domains. Since it is difficult to imagine that a patient has several, domain-specific, ways of processing information that in turn are more or less available at different times, we think that the theoretical entities relevant to the deactivation model, as in the accommodation model, are beliefs (schemata) rather than the processes that create or maintain these beliefs (information processes).

⁷Primary appraisal refers to the subject's initial reaction to a situation (automatic thoughts). Such an appraisal concerns the implications of a specific situation for one's well-being (Lazarus & Launier, 1978).

in depression—namely, “depression about depression” (p. 160). We go one step further in proposing that the repeated application of these coping or compensatory skills over time serves as a more general and enduring treatment mechanism in CT. Not only might it account for the early-in-treatment lifting of depression about depression, or increase in hope (see Frank, 1973), but the acquisition and use of these skills can account for the long-term positive effect of the therapy.

The compensatory skills model is also consistent with the Hollon and Kriss (1984) proposal that “the major change mechanisms in depressives who have received CT . . . is that they rely less on shortcut heuristics and learn to engage more frequently in normative strategies of processing” (p. 62; e.g., applying Bayes’s Theorem to test their beliefs about themselves or the world). It seems unlikely, however, that one can easily teach the kinds of normative processes suggested by Hollon and Kriss since these would consist of highly complex computations. Even if patients could learn such computations, it is unlikely they would use them since they would probably require much time and effort (see Baron, 1985). Thus, we propose that it is more likely that patients learn useful heuristics rather than normative processes. Useful heuristics, such as considering and weighing counterexamples equally with confirming examples, becoming more open to alternatives (Baron, 1985), or being generally more critical of one’s own inferences (Popper, 1963), should lead to a reduction in the upset engendered by negative automatic thoughts. Becoming more critical of one’s own inferences does not properly belong to the accommodation or deactivation models but rather to the compensatory skills model. We propose that remitted CT patients have learned to be more critical of their primary appraisals and have learned to examine a wide array of evidence as they revise them. To put it differently, we propose that the depressive’s belief formation process itself does not change, at least initially, but rather it is *supplemented* by newly acquired heuristics for challenging and revising beliefs such as asking oneself whether other (usually more benign) interpretations of a situation are plausible.

How, in principle, can changes in schematic content or process be distinguished from the acquisition of compensatory skills? We propose that accommodation would be reflected in changes in the tenor of a person’s initial or primary appraisals of situations (Lazarus, 1966). In the laboratory, accommodation might best be evidenced by changes on appropriate schema measures (Segal, 1988). On the other hand, the acquisition of compensatory skills would be reflected in the person’s increased tendency to attend to the content of depressotypic primary appraisals, followed by attempts to question these appraisals.

Although it is our view that CT works through the training and enhancement of compensatory skills, the change initiated in CT is probably

not fully captured by the compensatory skills model. Indeed, after repeated use of such skills, accommodation of schemata or activation of alternate schemata should be expected. We do question, though, whether much accommodation occurs during a short-term treatment such as CT. In other words, we do not propose only that the learning of compensatory or coping strategies is involved in successful CT, since we recognize the role played by belief change. But we want to claim that belief change is most likely to occur following changes in the way patients deal with upsetting cognitions and problematic life situations.

It might be that accommodation always involves developing or monitoring additional behaviors in order to change the targeted behavior. Using an example from tennis, if someone wants to learn to change her backhand stroke (targeted behavior), she will first have to monitor her behavior—e.g. to tell herself to put her feet perpendicular to the net. After repeated use of these compensatory behaviors, eventually her basic backhand stroke will have changed; the newer aspects will have become automatized, and she will no longer need each time to concentrate on the new procedures (Semmer & Frese, 1985).

To summarize, in remitted depressives the tendency to generate depressive primary appraisals presumably can be evoked in the context of environmental challenges. Contrary to the accommodation model, we propose that when CT-treated depressives meet such challenges they still tend to generate negative primary appraisals that, depending on their skills to rebut or reconsider these appraisals, will lead to “final” appraisals that will be more benign or positive. Over the long run, the better the skills, the less negative the final appraisals will tend to be. Finally, accommodation of beliefs may result from the repeated use of these compensatory skills over time.

The Assessment of Compensatory Skills

Some of the compensatory skills that we presume are learned in cognitive therapy have been discussed as coping strategies in the literature on stress and coping (Lazarus & Folkman, 1984; Billings & Moos, 1984). These include responses termed *cognitive* coping as well as those included under *behavioral* coping. The latter refer to planning and problem-solving strategies that are also taught in CT (see Beck et al., 1979, chap. 7). Moreover, the methods used in the coping literature serve as a good starting point for developing measures of compensatory skills. In the following, we present the requirements we believe a method for assessing compensatory skills should meet.

First, since the goal is to assess compensatory skills, the method should provide a challenge—that is, something that requires compensation. In the

case of CT for depression, we are most interested in how depressives respond to upsetting thoughts. Thus, a proper assessment tool will provide subjects with negative thoughts.

Second, because of the problems with retrospective reporting, the measure should attempt to approximate an "on-line" assessment of responses to situations and thoughts rather than rely on the subject's retrospective account of coping efforts. A problem with retrospective reports is reflected in the following instance: One of our subjects filled out Lazarus's Ways of Coping (Lazarus & Folkman, 1984) and told us that it was difficult for her to distinguish what she did to cope with a situation from unrelated activities she engaged in during the same period (e.g., visiting friends, praying). Moreover, it appears that people will report that they use most strategies *sometimes*, making it difficult to ascertain that they have applied any given strategy in the context of the specific event they report. Billing and Moos (1984), for example, state that "patients typically reported the use of a moderate amount of all types of coping (ratings of between 2 [once or twice] and 3 [sometimes] on a 4-point scale)" (p. 882).

A good measure of compensatory skills should also *minimize* the opportunity for subjects to give answers describing what they think they *should* do, as opposed to what they did or would do. Rippere (1977a, 1977b) has shown that a stock of knowledge exists in the culture regarding what one should do when one is depressed. In providing alternatives to the subject, as is done in a checklist, the researcher runs the risk of tapping what the subject thinks he should have done, rather than what he did or would do in an attempt to cope with the situation, since the subject is likely to recognize those actions he should have taken. Though no measure can eliminate this problem, a measure that requires the subject to *generate* responses should minimize them. Thus, in our view, an instrument needs to be developed that does not ask the subjects to indicate which strategies they have been using, but rather samples the thinking and planning of the respondent in the context of (hypothetical) stressful events, enabling the researcher to classify the subjects' responses. It also seems preferable to ask the subjects to describe more "molecular" components of thoughts and actions, leaving it to the researcher to extract from these descriptions the category these thoughts and actions belong to.

Third, a system is needed that not only classifies coping but also assesses the *quality* of coping. It should be possible to rate the quality of a subject's response in such a way that it reflects the likelihood that the response would lead to mood enhancement.

Fourth, we think it is preferable to have some control over the variety of stressors assessed by the measure. All the widely used measures (e.g., Lazarus's Ways of Coping) ask the subjects to tell about a stressful situation that they experienced and how they dealt with it. These personal stories

might reflect different levels of stress, which in turn might lead to specific uses of coping strategies. That is, the commonly employed assessment methods confound the existence and nature of stressful life events with the subject's capacity to cope with them. Though how well one fares depends in large part on the quality and severity of the stressors one faces, we think it best to separate these issues, allowing the researcher to give his best effort to the assessment of the coping side.

SUMMARY AND COMMENT

In this paper, we discussed the three models that might describe the specific cognitive changes responsible for the short- and long-term effects of CT for depression. We proposed that the lack of differential findings on measures that have been used in the clinical comparisons of CT with ADM might be the consequence of using instruments that either are mood-dependent or are best suited to phenomena of interest in an accommodation model of therapeutic change. The ASQ has shown some promise for detecting specific change following CT, but these results need to be replicated. Moreover, we proposed that the change in ASQ during CT might better be viewed as an index of the acquisition of compensatory skills rather than as a measure of schema change. We then suggested that a major focus of CT is the training and enhancement of compensatory skills that help the patients deal with the negative thoughts they experience. The repeated use of these skills may eventually lead to the modification of the beliefs and schemata of the patients. We argued that the acquisition and use of these compensatory skills likely mediates the reported lower rate of depression relapse following CT when compared with ADM.

We listed several constraints a measure of compensatory skills will need to meet in order to be useful for studying cognitive change in CT. We suggested that a good measure will provide subjects with depressotypic thoughts that they can then challenge. We also argued that coping checklists are problematic since subjects might recognize what they should have done and respond accordingly, so that a measure that requires the subject to generate responses is needed.

Pursuing research on these different models of change has important practical implications. For example, assuming the compensatory skills model best characterizes the therapeutic change process in CT, the therapist might want to focus efforts on teaching these skills, and spend less time on modification of beliefs per se. As we said earlier, we do not mean to imply that belief change should be left out, but rather that such change probably occurs most fully after repeated applications of compensatory skills.

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