

Acceptance and mindfulness-based therapy: New wave or old hat?

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Abstract

Some contemporary theorists and clinicians champion acceptance and mindfulness-based interventions, such as Acceptance and Commitment Therapy (ACT), over cognitive–behavioral therapy (CBT) for the treatment of emotional disorders. The objective of this article is to juxtapose these two treatment approaches, synthesize, and clarify the differences between them. The two treatment modalities can be placed within a larger context of the emotion regulation literature. Accordingly, emotions can be regulated either by manipulating the evaluation of the external or internal emotion cues (antecedent-focused emotion regulation) or by manipulating the emotional responses (response-focused emotion regulation). CBT and ACT both encourage adaptive emotion regulation strategies but target different stages of the generative emotion process: CBT promotes adaptive antecedent-focused emotion regulation strategies, whereas acceptance strategies of ACT counteract maladaptive response-focused emotion regulation strategies, such as suppression. Although there are fundamental differences in the philosophical foundation, ACT techniques are fully compatible with CBT and may lead to improved interventions for some disorders. Areas of future treatment research are discussed. © 2007 Elsevier Ltd. All rights reserved.

Keywords: Emotion regulation; cognitive–behavioral therapy; Acceptance and commitment therapy; Mindfulness; CBT; ACT; Emotional disorders

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1. Introduction

Cognitive-behavioral therapy (CBT) has become the dominant psychotherapy approach for a variety of mental disorders, ranging from anxiety and mood disorders to schizophrenia and personality disorders (see [Butler, Chapman, Forman, & Beck, 2006](#), and [Hofmann & Smits, in press](#), for a review). More recently, acceptance and mindfulness-based treatment approaches have been enthusiastically championed by some of its creators as the *third wave* treatments, succeeding behavior therapy and CBT. One of these approaches is Acceptance and Commitment Therapy, or ACT (e.g., [Eifert & Forsyth, 2005](#); [Hayes, 2004a,b, 2005](#); [Hayes, Strosahl, & Wilson, 1999](#)).¹ The objectives of this article are to juxtapose these two treatment approaches and thereby (1) highlight some recent misconceptions about CBT espoused by champions of ACT, (2) clarify the differences between these approaches, and (3) place these differences in a larger context of contemporary emotion regulation models.

CBT is a well-established approach with clearly defined treatment steps. ACT is a new intervention with comparatively less clearly defined steps. It uses many of the same CBT techniques (such as exposure and guided questioning), but distinguishes itself from CBT by focusing on different aspects and pursuing a different treatment goal. When explaining the therapeutic strategies, ACT-oriented manuals (e.g., [Eifert & Forsyth, 2005](#); [Hayes, 2005](#)) resort to directly comparing ACT to CBT, and focus on the presumed weaknesses of the latter approach. However, many of these presumed weaknesses of CBT are based on incorrect perceptions about the nature of CBT. We will present these issues and corrective information. For the purpose of discussing the critical difference between CBT and ACT, we will place the primary treatment principles in the larger context of contemporary emotion regulation theories. Specifically, we adopt the emotion-generative process model by Gross and colleagues ([Gross, 1998, 2002](#); [Gross & John, 2003](#); [Gross & Levenson, 1997](#)). Aside from differences in the philosophical foundation, the critical difference between CBT and ACT on the strategic level is that CBT techniques are primarily antecedent-emotion focused, whereas ACT and other mindfulness approaches are primarily response-focused. Thus, it is likely that CBT techniques primarily (but not exclusively) promote adaptive antecedent-focused emotion regulation strategies by focusing on reappraisal of the

¹ ACT shows many similarities to other mindfulness-based approaches. Some of these mindfulness-interventions are based on the CBT model and show strong empirical support (e.g., [Teasdale et al., 2000](#)). In contrast, the rationale of ACT is, in part, based on a critique of conventional CBT. For the purpose of this article, we will, therefore, limit our discussion to the comparison between CBT and ACT.

emotional stimuli; in contrast, ACT primarily targets maladaptive response-focused strategies by discouraging emotional suppression.

2. Essential features of CBT

CBT is based on the notion that behavioral and emotional responses are strongly moderated and influenced by cognitions and the perception of events. The word *cognitive* in CBT implies that treatment focuses to a great deal on thought processes. However, therapy is not limited to cognitive modification. Effective CBT has to target all aspects of an emotional disorder, including cognitions, emotional experience, and behavior. Accordingly, Beck (1979) distinguishes among the intellectual, the experiential, and the behavioral approaches, all of which are considered important aspects of therapy. As part of the intellectual approach, patients learn to identify their misconceptions, test the validity of their thoughts, and substitute them with more appropriate concepts; the experiential approach helps patients to expose themselves to experiences in order to change these misconceptions; and, the central element of the behavioral approach is to encourage the development of specific forms of behavior which lead to more general changes in the way patients view themselves and the world.

3. Basic CBT approaches

Since CBT was first introduced for the treatment of depression, specific treatment strategies have been closely tailored to the various emotional disorders. Therefore, it would be overly simplistic to talk about *the* CBT. Instead, it is more accurate to refer to a family of interventions that share a number of key treatment components and the same general structure (for an overview, see Beck, 1979). The therapeutic process in CBT is divided into various steps, with an emphasis on a number of specific therapeutic mechanisms that are outlined below. The CBT process is assumed to include all of these mechanisms to varying degrees at any given point in time.

3.1. Establishing a good therapeutic relationship

Positive therapist–patient interactions flow from a collaborative relationship. In general, therapists' behavior should be honest and warm. Patients are not considered to be helpless and passive but, rather, experts of their own problems. Therefore, patients are actively involved in treatment. For example, they are encouraged to formulate and test certain hypotheses in order to get a better understanding of the real world and their own problems. The emphasis during therapy is placed on solving problems. The therapist's role is to work with the patient to find adaptive solutions to solvable problems. Every step in therapy is transparent and clearly reasoned. Patients are encouraged to ask questions to make sure that they understand and agree with the treatment approach.

The initial role of CBT therapists is very active, as they educate patients about the underlying principles of this treatment approach. In addition, therapists often find that patients need a great deal of guidance in the beginning stages of therapy in order to help them successfully identify their misconceptions and associated automatic thoughts. As treatment progresses, patients are expected to become increasingly active in their own treatment. A masterful CBT therapist reinforces their patients' independence while at the same time being aware of the need for continued support and education as patients first begin to apply the concepts of CBT to their difficulties.

3.2. Problem focus

CBT is a problem-solving process. This process includes clarifying the status of the presenting problem, defining the desired goal, and finding the means to reach that goal. Therefore, the therapist and patient discuss the goals of therapy at the beginning of treatment, including identifying the type of interventions that are to be used to reach these goals and delineating concrete observable outcomes that indicate that each goal has been achieved. CBT case formulation can facilitate this step. The goal of formulation-based assessment is to identify core beliefs that underlie misconceptions and associated automatic thoughts in order to intervene effectively during treatment. Through the process of problem reduction, therapist and patient then identify problems with similar causes and group them together. Once the major problem is identified, the therapist typically breaks it up into component problems to be attacked in a given case. Therapists frequently elicit feedback from the patient throughout treatment to ensure that problem-solving efforts are on target with identified goals.

3.3. Identifying irrational thoughts

Once patients define their problems and goals for treatment, CBT therapists encourage them to become aware of their thoughts and thought processes. Cognitions are generally classified into negative automatic thoughts and dysfunctional or irrational beliefs. Negative automatic thoughts are thoughts or images that occur in specific situations when an individual feels threatened in some way. Dysfunctional (or irrational, maladaptive) beliefs, on the other hand, are assumptions that individuals have about the world, the future, and themselves. These more global, overarching beliefs provide a schema that determines how a person may interpret a specific situation. Just as with automatic thoughts, therapists can identify irrational beliefs through the process of guided questioning.

3.4. Challenging irrational thoughts

By treating irrational thoughts as hypotheses, patients are put into the role of observers – scientists or detectives – rather than victims of their concerns. In order to challenge these thoughts, therapist and patient discuss the evidence for and against a particular assumption in a debate, or what Beck calls *Socratic dialogue*. This can be done in a variety of ways, most typically by using information from patients' past experiences, empirically evaluating a situation, evaluating the outcome of a situation, and by giving patients the opportunity to test their hypothesis by exposing them to feared and/or avoided activities or situations.

At first, patients are often asked to generate rational alternatives to their irrational responses to a challenging situation. As this skill is polished, patients are encouraged to use their skills both before and during difficult situations. In addition, given the presumed automatic and habitual nature of their negative thoughts, continued and repeated restructuring may be required before a thought is fully challenged. It is assumed that with consistent practice, more accurate thinking becomes the automatic mode of response.

3.5. Testing the validity of thoughts

Once irrational thoughts are identified and challenged, patients are asked to put the previously held and maladaptive beliefs to the test. By confronting themselves with stimuli (e.g., situations, bodily sensations, images, activities) that provoke negative emotions (e.g., anxiety, embarrassment, guilt), patients have the opportunity of conducting field experiments to examine the validity of their assumptions.

3.6. Substituting irrational thoughts with rational thoughts and eliciting feedback

One of the most difficult steps in CBT is substituting irrational thoughts with rational ones. This is because habits, such as automatic thoughts, can be very resistant to change. The goal of CBT is neither to demonstrate to patients how ridiculous their thoughts are nor to teach them positive thinking techniques. Instead, the goal is to test the patient's hypotheses and, if these hypotheses are invalid, to modify them in order to get a more realistic perspective about the real world. Direct tests through behavioral experiments provide the feedback that is necessary to substitute irrational with rationale thoughts.

4. Essential features of ACT

The theoretical basis of ACT is rooted in Relational Frame Theory (RFT; Hayes, Barnes-Holmes, & Roche, 2001). RFT is derived from a philosophical view called functional contextualism (e.g., Gifford & Hayes, 1993; Pepper, 1942), which attempts to offer a way to integrate cognition and language into a behavioral analytic frame work by “adding the principles needed to account for cognition from a functional contextual or behavior analytic point of view” (Hayes, Luoma, Bond, Masuda, & Lillis, 2006, p. 4). According to RFT, the core of human language and cognition is “the learned and contextually controlled ability to arbitrarily relate events mutually and in combination, and to change the functions of specific events based on their relations to others” (Hayes et al., 2006, p. 5). A key assumption of RFT is that “cognitions (and verbally labeled or evaluated emotions, memories, or bodily sensations) achieve their potency not only by their form or frequency, but by the context in which they occur. Problematic contexts include those in which private events need to be controlled, explained, believed, or disbelieved, rather than being experienced” (Hayes, Luoma et al., 2004; Hayes, Masuda et al., 2004; Hayes, Strosahl et al., 2004, p. 45).

An important implication of RFT is that verbally mediated relationships among objects can alter – and limit – behavioral processes. In order to expand behavior, ACT was developed in order to help patients change the context in which the behavior occurs. The essential goal of ACT is to “treat emotional avoidance, excessive literal response to cognitive content, and the inability to make and keep commitments to behavior change” (Kohlenberg, Hayes, & Tsai, 1995, p. 584).

The founders of ACT do not simply consider ACT to be an extension of existing CBT. Instead, it is viewed as a revolutionary new treatment approach: “This is a time of upheaval in behavioral and cognitive therapy, particularly due to the rapid rise of acceptance and mindfulness-based interventions” (Hayes et al., 2006; p 3). It was suggested that “behavior therapy can be divided into three generations: traditional behavior therapy, cognitive–behavior therapy (CBT) and the more recent “third generation” of relatively contextualistic approaches (Hayes, 2004a,b)” (Hayes et al., 2006, p. 2). Given the emphasis on the novelty and revolutionary aspects of ACT, we would like to first introduce the reader to the theoretical background, and then examine the characteristics of the treatment approach. In order to avoid possible misrepresentation or oversimplification of the approach we will frequently cite the sources directly.

5. Basic ACT approach

The general goals of ACT are to foster acceptance of unwanted thoughts and feelings, and to stimulate action tendencies that contribute to an improvement in circumstances of living (Eifert & Forsyth, 2005; Hayes, 2005). More specifically, the goal of ACT is discourage *experiential avoidance*, which is the unwillingness to experience negatively evaluated feelings, physical sensations, and thoughts (Hayes, Luoma et al., 2004; Hayes, Masuda et al., 2004; Hayes, Strosahl et al., 2004). Individuals who show high levels of experiential avoidance rely on suppression, avoidance, and other control tactics to manage emotional experiences. Preliminary support for the validity of this construct comes from recent empirical studies showing that otherwise healthy individuals who score high on experiential avoidance respond with greater emotional distress and more negative cognitions to emotion-provoking procedures, such as biological challenges (Eifert & Hefner, 2003; Feldner, Zvolensky, Eifert, & Spira, 2003; Karekla, Forsyth, & Kelly, 2004) and emotional film clips (Sloan, 2004), than do those scoring low on experiential avoidance.

In order to target experiential avoidance, ACT includes techniques that are intended to increase psychological flexibility, which is defined as “the ability to contact the present moment more fully as a conscious human being, and to change or persist in behavior when doing so serves valued ends” (Hayes et al., 2006, p. 7). The specific processes and techniques to reach this therapeutic goal include acceptance, cognitive defusion, being present, self as context, values, and committed action. These techniques will be briefly described in the following paragraphs.

5.1. Acceptance

Patients are encouraged to embrace unwanted thoughts and feelings – such as anxiety, pain, and guilt – as an alternative to experiential avoidance. The goal is to end the struggle with unwanted thoughts and feelings without attempting to change or eliminate them.

5.2. Cognitive defusion

The purpose of cognitive defusion is to change undesirable functions of thoughts and other private events (such as emotions). These strategies are intended to make the patient realize that any attempts to control private events are part of the problem, not the solution. For example, in the case of anxiety disorders, the patient may learn that it is the unsuccessful attempts to control anxiety that is the problem, not the solution. Instead, patients are encouraged to not act upon the thoughts and feelings, and to ultimately give up control. Various mindfulness exercises attempt to teach patients how to live with their evaluative and critical mind.

5.3. Being present

Therapists encourage patients to be in non-judgmental contact with environmental events as they occur. Patients are encouraged to experience events more directly which contributes to greater psychological flexibility.

5.4. *Self as context*

Patients are encouraged to adopt “a sense of self as a locus of perspective [that] provides a transcendent, spiritual side to normal verbal humans (...) [which is accomplished by] mindfulness, exercises, metaphors, and experiential processes” (Hayes et al., 2006, p. 9).

5.5. *Values*

Therapists encourage patients to “choose life directions in various domains (e.g., family, career, spirituality) while undermining verbal processes that might lead to choices based on avoidance, social competence, or fusion” (Hayes et al., 2006, p. 9).

5.6. *Committed action*

Hayes notes that in regard to committed action “ACT looks very much like traditional behavior therapy, and almost any behaviorally coherent behavior change method can be fitted into an ACT protocol, including exposure, skills acquisition, shaping methods, goal setting, and the like (Hayes et al., 2006, p. 9).

6. ACT's critique of CBT

In order to provide an objective, unbiased summary of the critique of ACT against CBT, we will provide the concrete citations that include the critique. We will then provide a brief point by point discussion of these issues.

One frequently raised issue in the ACT literature is the critique that CBT is based on a mechanistic model (Hayes et al., 1999):

Some types of cognitive–behavioral therapy, for example, are based on a computer metaphor (as is much of cognitive psychology itself). Like a computer, humans are thought to store, access, and process information. In this view, the task when dealing with an unworkable thought is to change the form of the thought, just as a computer may be changed by replacing memory chips or by changing software. This “out with the bad, in with the good” mechanistic approach is quite different from a contextual perspective wherein the emphasis may be on “seeing the bad thought as a thought, no more, no less. ACT (...) rejects the mechanistic content-oriented forms of many behavioral and cognitive–behavioral treatments (pp. 20–21).

Another frequently raised criticism toward CBT is the symptom² focus (which has been referred to in the ACT literature as *first-order change*). In contrast to CBT, “the new behavior therapies carry forward the behavior therapy tradition, but they (1) abandon a sole commitment to first-order change, (2) adopt more contextualistic assumptions, (3) adopt more experiential and indirect change strategies in addition to direct strategies, and (4) considerably broaden the focus of change” (Hayes, 2004a, p. 6).

Finally, the following paragraphs highlight a number of additional points that have been raised against CBT by ACT proponents as summarized by Hayes et al. (2006):

The second generation of behavior therapy is now 30 years old, and the long-term impact of this second model of scientific development can be examined. The results are mixed. CBT techniques have produced impressive outcomes in many areas, but it is not clear how much of this is due to what was added to traditional behavior therapy. When we look specifically at the original goal of an analysis linked to basic principles, the picture is not positive. The link between cognitive therapy and basic cognitive science continue to be weak. Looking at the array of popular techniques developed in CBT, none are known to have emerged directly from the basic science

² Symptom is a term that is often used to describe arousal-related bodily sensations, such as shortness of breath and muscle tension, when the sensations are interpreted as being indicative of something being wrong with oneself (e.g., a mental or physical health condition). In the present context this term can also be used to describe negative thoughts and unwanted behaviors associated with emotional distress. To be consistent with the language used in ACT-oriented manuals (e.g., Eifert & Forsyth, 2005; Hayes, 2005), we refer in our discussions to symptoms as well as the more specific components described above.

laboratories. Component analysis studies have generally failed to find support for the importance of direct cognitive change strategies, which was the common sense lynch pin of CBT (Gortner, Gollan, Dobson, & Jacobson, 1998; Jacobson et al., 1996; Zettle & Hayes, 1987). Well-known cognitive therapists have been forced to conclude that in some important areas there is “no additive benefit to providing cognitive interventions in cognitive therapy” (Dobson & Khatri, 2000, p. 913). The response to traditional cognitive therapy often occurs before cognitive change techniques have been implemented (Illardi & Craighead, 1994), a finding that has still not been adequately explained. Support for the hypothesized mediators of change in CBT is weak (e.g., Burns & Spangler, 2001; Morgenstern & Longabaugh, 2000), particularly in areas that are causal and explanatory rather than descriptive (Beck & Perkins, 2001; Bieling & Kuyken, 2003). This overall picture presents an anomaly. On the one hand, most empirical clinicians agree that traditional behavior therapy was simply not adequate and that better methods of dealing with thoughts and feelings were needed. CBT is widely understood to have been a step forward in freeing up the behavior therapy tradition to work directly with cognitions, and the outcomes for CBT protocols are generally quite good compared to work outside of behavior therapy writ large. On the other hand, the core conception of traditional cognitive and CBT – that direct cognitive change is necessary for clinical improvement – is still not well supported, and there is scant evidence that traditional CBT is bringing together basic and applied analyses into a more scientifically coherent and useful discipline (p. 3).

To summarize, the following critique points have been raised as represented in these quotes: (1) CBT is based on a mechanistic realism model; (2) CBT is overly symptom-focused; (3) the link between cognitive therapy and basic cognitive science is weak; (4) none of the techniques developed in CBT have emerged from basic science laboratories; (5) component analysis studies have failed to find support for the importance of direct cognitive change strategies; (6) the response to traditional cognitive therapy often occurs before cognitive change techniques have been implemented; and (7) support for the hypothesized mediators of change in CBT are weak. We will briefly address each of these criticisms in the following paragraphs.

6.1. Critique 1: CBT is based on mechanistic realism

The computer metaphor (“out with the bad, in with the good” mechanistic approach) is inaccurate. As we outlined earlier, CBT is not synonymous with training in positive thinking, and the goal of CBT is not to replace “bad” cognitions with “good” cognitions. Interestingly, this is also a common misunderstanding by many patients who come to therapy. Emotions are causally linked with cognitions, the perceptions and interpretation of stimuli, and serve as evolutionary adaptive responses that (potentially) allow one to adjust to the demands of a situation. CBT encourages patients to adopt a scientific approach and to re-examine the accuracy of their predictions, perceptions, and interpretations. If the patient’s emotional response is due to an unrealistic assessment of the situation, the CBT therapist will encourage to identify, re-examine, and correct these cognitions. However, if there is good reason to be sad, angry, fearful, worried, and so forth, the CBT therapist will not attempt to change these adaptive responses. In other words, it is not the situation *per se*, but rather the perceptions, expectations, and interpretations of the events that are responsible for our emotions — we are only anxious, angry, or sad if we think that we have reason to be anxious, angry or sad. Epictetus, an ancient Greek philosopher, summarized this observation in the statement: *Men are not moved by things but the views which they take of them*. The word *cognitive* in CBT does imply that treatment mainly concentrates on thought processes; however, CBT does not mean that therapy is limited to cognitive modification. It simply means that the therapist accesses the patient’s emotions through cognitions.

6.2. Critique 2: CBT is overly symptom-focused

The goal in CBT is to reduce or eliminate psychological distress. This goal incorporates symptom reduction. The process to achieve this goal, however, is not through direct modification of the symptoms but, instead, through identifying and modifying dysfunctional cognitions that are causally related to symptom interpretation and related psychological distress. In order to evaluate the validity of certain beliefs about symptoms, patients are encouraged to engage in hypothesis-testing of their beliefs to examine whether the feared outcome is in fact going happen. The basic behavioral principles behind hypothesis testing of irrational beliefs are consistent with the dual processing theory of avoidance (Miller, 1992; Mowrer, 1939; Rescorla & Solomon, 1967). In a typical avoidance learning experiment, an

animal is administered a painful shock, but has the ability to escape the shock by responding to a stimulus that signals the onset of the shock. After repeated trials, the animal continues to show the escape response to the signal, even in the absence of the shock. Similarly, the cognitive model explains that irrational beliefs persist because the person has never had a chance to challenge and test the validity of these beliefs. As part of hypothesis-testing exercises in CBT, people are encouraged to expose themselves to challenging situations in order to examine whether a particular behavior or situation results in a predicted outcome. This process provides corrective information that allows the patient to reframe how she/he views, for example, arousal-related bodily sensations; the sensations may still occur but are no longer viewed catastrophically, no longer instill emotional distress, and no longer impair functioning.

The classic experiments by [Schachter and Singer \(1962\)](#) convincingly demonstrated that emotional experiences result from the interpretation of arousal-related bodily sensations, not from the sensations themselves. Therefore, during the early stage of CBT, the therapist explores the patient's belief system with the goal to identify, challenge, and correct irrational beliefs about arousal-related bodily sensations, negative thoughts, and unwanted behaviors that are associated with emotional distress. The Socratic questioning method is used to uncover the patient's implicit beliefs about arousal-related bodily sensations, negative thoughts, and unwanted behaviors. Consequently, a commonly asked question by a CBT therapist is *why?* — Why is the patient fearful of a racing heart or dizziness? Why does the patient perceive their pain as a signal of impending doom? Why is it that stomach upset invariably leads the patient to believe he will lose control? The goal is for patients to learn that it is not the symptoms per se (e.g., the arousal-related bodily sensations, negative thoughts, or unwanted behaviors) that should be the target of CBT; rather, it is the cognitive distortion and misinterpretation that underlies the emotional distress associated with these. Therefore, the CBT practitioner teaches the patient that (1) emotions are a result of the cognitive appraisal of arousal-related bodily sensation and the situation or event one finds him or herself in, and (2) emotional distress is the result of the maladaptive perception of these bodily sensations, situations, or events. That is, the patient learns that his/her symptoms are directly associated with maladaptive cognitions, such as catastrophic misinterpretations of benign sensations, situations, and events. These maladaptive cognitions are the main target of CBT.

6.3. Critique 3: The link between cognitive therapy and basic cognitive science is weak

We are surprised that this critique was raised, perhaps because we have been directly involved in a number of exciting studies that directly link CBT and other scientific fields, most notably clinical neuroscience. From a neuroscience perspective, psychotherapy may be viewed as a process through which our neocortex learns to exercise control over evolutionarily old emotional system, especially the amygdala (e.g., [LeDoux, 1996](#)). For example, there is now good evidence that extinction learning, which appears to be a crucial element in exposure therapies for anxiety disorders, involves interactions between the medial prefrontal cortex and the amygdala ([Myers & Davis, 2007](#)). Fear reduction during exposure therapy can be achieved by at least two processes, first through learning involving the prefrontal–amygdala circuit, and, second, through conscious insight and conscious appraisal, which involves the control of the amygdala through the temporal lobe memory system and other cortical areas involved in conscious awareness ([LeDoux, 1996](#)). This is not to say that these processes are completely independent. In fact, there is good evidence that higher cortical processes are also involved in extinction learning ([Hofmann, in press-a](#)). The merging of modern neuroscience and clinical science holds much promise and has recently resulted in a number of exciting studies that involve the use of pharmacological agents that appear to facilitate extinction learning in animals and exposure therapy in humans (see [Hofmann, 2007](#)).

6.4. Critique 4: None of the techniques developed in CBT have emerged from basic science laboratories

As noted earlier, CBT consists of a family of related interventions. The different protocols differ depending on the disorder or specific problem behavior that CBT targets. There are numerous volumes summarizing the various protocols. Instead of providing a comprehensive review, we will give a representative example to illustrate how basic laboratory work has led to the further development of CBT for a specific disorder, social phobia (social anxiety disorder, SAD).

One of the earliest CBT protocols was Heimberg's cognitive–behavioral group therapy (CBGT; [Heimberg, 1991](#)). The treatment was closely tailored to Beck's original treatment for depression ([Beck, Rush, Shaw, & Emery, 1979](#)). In the first two sessions of CBGT, patients learn the basic cognitive–behavioral model of social phobia, which assumes that certain cognitive distortions cause social anxiety. These cognitive distortions include all-or-nothing thinking,

overgeneralization, mental filter, disqualifying the positive, magnification, minimization, catastrophizing, emotional reasoning, personalization, “should” statements, and labeling/mislabeling. In therapy, patients are taught to identify and dispute these cognitive distortions. For this purpose, patients engage in various role-play activities to confront fearful situations while disputing cognitive distortions. At the end of each group session, the patient and therapist agree on assignments for exposure to similar real-life situations during the week as part of the “homework” assignments.

This treatment protocol was tested in a large-scale study with 133 patients with SAD who were randomly assigned to phenelzine (Nardil, an MAOI commonly used to treat SAD), Educational Support Group Therapy (the psychological placebo), a pill placebo, or CBGT (Heimberg et al., 1998). After 12 weeks, both the CBGT (58%) and phenelzine conditions (65%) had higher proportions of responders than pill placebo (33%) or Educational Support Group Therapy (27%). The controlled effect size estimate comparing CBT and educational supportive therapy at post-test based on the primary outcome measure was in the small to medium range. These results showed that Heimberg’s CBT protocol was better than placebo and not significantly different from phenelzine. However, the response rates and effect size estimates were clearly less than optimal. Similar results were more recently reported by Davidson and colleagues (2004), who used a slight modification of Heimberg’s treatment protocol.

For the last 10 years, a number of experimental studies has since been conducted on the psychopathology of SAD, and much of this research had direct relevance for treatment (see for review Heinrichs & Hofmann, 2001; Hirsch & Clark, 2004). These studies have shown that individuals with SAD are apprehensive in social situations in part because they perceive the social standard (i.e., expectations and social goals) as being unreasonably high (Moscovitch & Hofmann, 2006). They desire to make a good impression on others but doubt that they will be able to do so (Leary, 2001), in part because they have problems with clearly defining their goals in a social situation and selecting specific achievable behavioral strategies to reach these goals (Hiemisch, Ehlers, & Westermann, 2002). As a result, vulnerable individuals experience even greater social apprehension, which is associated with heightened self-focused attention (Woody, 1996). This, in turn, leads them to exaggerate the probability of a negative outcome of a social situation and to overestimate the potential social costs (Foa, Franklin, Perry, & Herbert, 1996; Hofmann, 2004). In addition, individuals with SAD perceive little control over their anxiety response in social situations, hold a negative view of themselves as a social object, and view their social skills as very poor or inadequate to master the social task (see Hofmann & Barlow, 2002, for a review). As a result, individuals with SAD anticipate social mishaps and engage in avoidance and/or safety behaviors (Wells et al., 1995), followed by post-event rumination (McManus, Sacadura, & Cark, in press; Mellings & Alden, 2000; Rachmann, Grüter-Andrew, & Shafran, 2000). This cycle feeds on itself, ultimately leading to the maintenance and further exacerbation of the problem (see Hofmann, in press-b, for a more in-depth discussion of these maintenance factors).

Clark and Wells’ (1995) formulated a model that correctly predicted many of the maintenance factors and processes that were later identified in the aforementioned laboratory studies. Based on this model, the authors developed an individual treatment approach and randomly assigned 60 patients with generalized SAD to one of three conditions: (1) cognitive therapy alone, (2) fluoxetine combined with self-exposure, or (3) fluoxetine combined with a pill placebo (Clark et al., 2003). The results at post-treatment and 12-month follow-up assessments showed that CBT was superior to the other two conditions, which did not differ from one another. The results showed that the effect size of the severity rating based on the clinical interview was 1.41 (pre-test to post-test) and 1.43 (pre-test to 12-month follow-up) in the cognitive therapy group. Even stronger effects were found for a composite score, which was associated with a pre–post effect size of 2.14. One of us has independently developed a similar treatment protocol and obtained similarly strong effects in a smaller and uncontrolled trial (Hofmann & Scepkowski, 2006).

This example is representative of a broad array of psychopathologies. It clearly illustrates how a CBT protocol for a particular disorder can evolve and be improved based on new knowledge from experimental research on the psychopathology of the disorder; thus, the suggestion that no CBT techniques have emerged from basic science laboratories is not corroborated by available evidence.

6.5. Critique 5: Component analysis studies have failed to find support for the importance of direct cognitive change strategies

The suggestion that component analysis studies fail to support the importance of direct cognitive change strategies has recently been reiterated in the literature by Longmore and Worrell (2007). One of us had the opportunity to write an extended commentary on this critique (Hofmann, 2008-c). Briefly stated, our argument is that a component analysis

can neither support nor refute the CBT model because cognitions can change without explicitly targeting them in treatment. For example, a spider phobic person who exposes herself to spiders without experiencing any of the feared consequences will show a reduction in harm expectancy, even without any explicit cognitive restructuring techniques. The real question is: Do changes in cognitions mediate changes in symptoms? This is not an easy question to answer because it requires sophisticated study designs and statistical techniques.

6.6. Critique 6: The response to traditional cognitive therapy often occurs before cognitive change techniques have been implemented

Hayes and colleagues (2006) cited Illardi and Craighead (1994), who estimated that most of the symptom improvement in CBT for depression (60–70%) appears to occur during the first 4 weeks of treatment. Therefore, they argued, symptom changes cannot be explained by cognitive modification.

There are few studies that have examined the temporal relationship between changes in cognitions and symptom changes. Most of this research comes from the depression literature. However, this research specifically examines the phenomenon of large, rapid and stable decreases in symptomatology during treatment, which has been referred to as *sudden gains* (Tang & DeRubeis, 1999). The sudden gain literature suggests that Illardi and Craighead's (1994) estimate that 60–70% of the symptoms improved within the first 4 weeks of treatment is incorrect (Gaynor et al., 2003; Hofmann, Schulz, Meuret, Moscovitch, & Suvak, 2006; Tang & DeRubeis, 1999; Tang, Luborsky, & Andrusyna, 2002; Vittengl, Clark, & Jarrett, 2005; Tang, DeRubeis, Beberman, & Pham, 2005; Hardy et al., 2005). Instead, it appears that only 17–50% of patients, depending on the study, experience sudden gains, whereas a large portion shows a relatively gradual improvement throughout treatment. Most these gains occur in session 5 of a 12-session group treatment. It is still unclear whether these gains are caused by cognitive changes. However, this is an overly restricted test of the cognitive mediation model because sudden gains of cognitive changes before symptom changes occur are neither a sufficient nor a necessary criterion for treatment mediation.

6.7. Critique 7: Support for the hypothesized mediators of change in CBT are weak

Although the statistical test for mediation in cross-sectional studies has been clarified since the seminal paper by Baron and Kenny (1986), the study of mediation of treatment change is still in its infancy. In contrast to the Baron and Kenny (1986) criteria, mediation of treatment change requires more complex methodological designs and statistical tests, such as regression discontinuation and interrupted time series for single-group study designs (Doss & Atkins, 2006), structural equation modeling procedures for longitudinal tests (Cole & Maxwell, 2003), multilevel models (Kenny, Korchmaros, & Bolger, 2003), and linear regression models for randomized controlled trials (Kraemer, Wilson, Fairburn, & Agras, 2002).

Very few studies have examined treatment mediation in CBT. All of the studies we are aware of were conducted within the last 5 years, and include studies on the treatment of panic disorder (Smits, Powers, Cho, & Telch, 2004; Hofmann et al., 2007), social anxiety disorder (Hofmann, 2004; Smits, Rosenfield, Telch, & McDonald, 2006), eating disorder (Wilson, Fairburn, Agras, Walsh, & Kraemer, 2002), and pathological gambling (Petry, Litt, Kadden, & Ledgerwood, 2007). It is too early to make any firm conclusions based on this limited amount of research. However, the results are very promising and, so far, support the cognitive mediation model.

7. Difference between CBT and ACT

7.1. The role of cognitions

As we already described in detail earlier, cognitive processes constitute the center-piece of CBT. Cognitions are synonymous for thought processes and include automatic thoughts and schemas, which are general beliefs about the world, the self, and the future. These schemata determine the general “rules” a person has adopted; they are often expressed in absolutistic *shoulds*, *oughts*, and *musts*. Patients are likely to experience unnecessary emotional distress when they impose rigid expectations on themselves, other people, and the world. CBT helps patients to identify, challenge, and re-evaluate these rigid rules and adopt a more relaxed and satisfying system of values in order to enhance overall life satisfaction. Therefore, the schema work in CBT is very similar to the value issue in ACT.

However, there is also a critical difference between ACT and CBT in the way therapy deals with cognitions. In contrast to CBT, ACT does not adopt a tripartite model distinguishing between overt behaviors (actions), emotions (subjective experience), and cognitions (thought processes). Instead, ACT subsumes cognitions under the more general term *behavior* as it is used in behavior analysis, namely “as a term for all forms of psychological activity, both public and private, including cognition” (Hayes et al., 2006, p. 2). In essence, the word *cognition* has a different meaning in ACT than in CBT; it is a thought process in CBT and a private behavior in ACT.

Cognitions occupy a critically important role in the treatment model for both treatment approaches, not only in CBT. In fact, ACT has been described as “the applied extension of a 20 year long attempt to create a modern form of behavior analysis that could overcome this challenge by adding the principles needed to account for cognition from a functional contextual or behavior analytic point of view” (Hayes et al., 2006, p. 4). The practical implication of this approach is that ACT therapists focus primarily on changing the *function* of cognitions, instead of changing the cognitive *content*. Cognitive function is targeted in ACT by encouraging patients not to act on certain cognitions. Instead, patients are asked to accept them, without attempting to change their actual content. The same acceptance approach is taught for unpleasant emotions.

7.2. *The role of emotions*

Emotional disorders, such as anxiety disorders and depression, are, by definition, characterized by ineffective attempts to regulate emotions. For example, avoidance behaviors are important DSM criteria for anxiety disorders. Effective psychological treatments for emotional disorders focus on promoting beneficial emotion regulation strategies and discourage the use of ineffective strategies.

CBT and ACT share many of the same techniques to reduce emotional distress. Both treatment modalities are problem focused and behaviorally-based interventions that involve the patient in a collaborative relationship with the objective of solving clearly identifiable and achievable goals. However, there is one important aspect that distinguishes the two treatments. This aspect is related to the specific emotion regulation strategy that is promoted by the treatments. ACT targets *experiential avoidance* and the attempts to manage unpleasant emotions through suppression and other dysfunctional emotion regulation strategies. In contrast, CBT primarily focuses on the emotion-eliciting stimulus itself — the situation or event that generates the emotional experience. In other words, ACT counter-acts maladaptive *response-focused* emotion regulation strategies, whereas CBT promotes adaptive *antecedent-focused* emotion regulation strategies by encouraging cognitive reappraisal of the emotional triggers.

This distinction is based on Gross’ process model of emotions, which emphasizes the evaluation of external or internal emotional cues (Gross, 1998, 2002; Gross & John, 2003; Gross & Levenson, 1997). Once these cues have been processed, a set of experiential, physiological, and behavioral responses are activated and influenced by emotion regulation tendencies. The time point at which individuals engage in emotion regulation influences the efficacy of their regulatory efforts. Accordingly, based on their timing during the emotion-generative process, emotion regulation strategies can be divided into antecedent-focused and response-focused strategies.

Antecedent-focused emotion regulation strategies occur before the emotional response has been fully activated. They include tactics such as situation modification, attention deployment, and cognitive reframing of a situation. Response-focused emotion regulation strategies entail attempts to alter the expression or experience of emotions after response tendencies have been initiated. They include the strategy of suppression and other experiential avoidance strategies. Results of empirical investigations have so far converged to suggest that antecedent-focused strategies are relatively effective methods of regulating emotion *in the short-term*, whereas response-focused strategies tend to be counterproductive (e.g., Gross, 1998; Gross & Levenson, 1997).

The evidence linking emotion suppression to increases in negative affect and physiological arousal can be placed in the larger context of the literature on suppression of other states (e.g., thoughts, pain). In a classic study that inspired numerous other investigations of thought suppression, Wegner, Schneider, Carter, and White (1987) demonstrated that attempts to suppress thoughts about a white bear paradoxically increased the frequency of such thoughts during a post-suppression period in which participants were free to think about any topic. Subsequent research has established links between this rebound effect as a laboratory phenomenon and clinical disorders. For example, thought suppression has been associated with increased electrodermal responses to emotional thoughts (Wegner & Zanakos, 1994), suggesting that it elevates sympathetic arousal. Evidence also exists that attempts to suppress pain are unproductive (Cioffi & Holloway, 1993).

In essence, CBT and ACT target different stages in the emotion-generative process: CBT promotes adaptive antecedent-focused emotion regulation strategies, whereas ACT counter-acts maladaptive response-focused emotion regulation strategies. The cognitive restructuring techniques used in CBT are in line with the antecedent-focused emotion regulation strategies, providing skills that are often effective in reducing emotional distress in the long term. Acceptance and mindfulness-based strategies counter suppression and, thereby, alleviate emotional distress.

7.3. *Philosophical foundation*

Despite similarities on the therapeutic-technical level, ACT and CBT show substantial differences in their philosophical foundations. As we reviewed earlier, ACT is based on functional contextualism, which has been proposed as the philosophical basis for behavior analysis to emphasize the functional relations between behavior and environmental events. The truth criterion is based on pragmatism by emphasizing workability (i.e., successful working). In contrast, CBT is not directly linked to a particular philosophy. The philosophical foundation most closely associated with CBT is critical rationalism, an epistemological philosophy (Popper, 1959) that shares its philosophical roots with the natural sciences. The core assumption of critical rationalism is that knowledge can only be gained by attempting to falsify hypotheses that are derived from scientific theories. Based on this philosophy, knowledge is objective and, thereby, shows properties and consequences that are not reducible to whatever one prefers the truth to be. Following the same philosophical principle, patients in CBT are encouraged to generate hypotheses based on their beliefs (theories) about the world, themselves, and their future. This approach is combined with the Socrates method, in which a series of questions are posed to help a person determine their underlying beliefs. By falsifying these hypotheses, patients are then forced to revise their belief system, reducing the emotional distress.

8. General discussion

Is there a third wave? Clearly, the opinions on this issue vary. The founders of ACT consider our time to be “a time of upheaval in behavioral and cognitive therapy, particularly due to the rapid rise of acceptance and mindfulness-based interventions” (Hayes et al., 2006; p. 3). Hayes further states that “examples of third wave CBT interventions include ACT, dialectic behavior therapy (DBT; Linehan, 1993), mindfulness-based cognitive therapy (MBCT; Segal, Williams, & Teasdale, 2001), and meta-cognitive approaches (Wells, 2000), among several others. Rather than focusing on changing psychological events directly, these interventions seek to change the function of those events and the individual’s relationship to them through strategies such as mindfulness, acceptance, and cognitive defusion (Teasdale, 2003)” (Hayes et al., 2006, p. 4).

We were suspicious about the large number of treatment approaches that are apparently part of this “third wave.” In line with our suspicion, Adrian Wells (personal communication, August 23, 2007) clearly does not consider his intervention (Metacognitive Therapy, MCT) to be part of the “third wave movement” as represented by ACT. Instead, he views MCT as an extension of CBT. Compared to earlier CBT approaches, MCT explicitly targets the meta-cognitive content, in addition to other cognitive processes. MCT assumes that a disorder can arise out of different levels of cognition and the interaction between them. However, as other CBT approaches, MCT is based on a model that has a cognitive architecture representing the interplay between levels of cognition and types of cognition in the control of conscious experience. Consistent with Wells’ assessment, we do not believe that there is such an architecture expressed in ACT. Furthermore, as compared to ACT, MCT (1) is based on an a-priori scientific basis, (2) focuses on disorder-specific empirically tested models, (3) is a formulation driven treatment, (4) does not use meditation, and (5) changes psychological events directly. Like Wells, Marsha Linehan (personal communication, August 28, 2007) does not consider DBT to be part of this “third wave” but, instead, views DBT as a form of CBT that includes acceptance strategies.

These examples question the validity of the earlier assessment that there is a “third wave,” represented by ACT, sweeping across the field of clinical psychology. However, the focus on emotion regulation strategies offers some new ideas for treatment. Emotion regulation strategies have recently been discussed in various psychological disciplines, ranging from personality, social, and developmental psychology (for a review, see Cole, Martin, & Dennis, 2004; Gross & John, 2003), clinical psychology (e.g., Campbell-Sills, Barlow, Brown, Hofmann, 2006a,b); to neuroscience (e.g., Hariri, Bookheimer, Mazziotta, 2000). Successful regulation of emotional states is an important human characteristic that facilitates social adjustment and overall well-being. Pursuing important life goals requires tolerance and management of a wide range of emotional states, including uncomfortable and distressing emotions.

Some emotion regulation strategies produce counterproductive effects, whereas others reliably promote mood improvement. Cognitive reappraisal of emotional stimuli can alleviate subjective distress and increase tolerance of emotions without any detrimental effects (Gross, 1998; Richards & Gross, 2000), whereas suppression of emotions is associated with increased physiological arousal (Gross, 1998; Gross & Levenson, 1997) and rumination over emotional events prolongs both angry and depressed moods (Nolen-Hoeksema & Morrow, 1993; Rusting & Nolen-Hoeksema, 1998).

Gross (2002) divides emotion regulation strategies into antecedent-focused and response-focused strategies based on their timing during the emotion-generative process. One of the best-researched and most effective emotion regulation strategies is cognitive reappraisal (e.g., Gross, 2002), which is the core of CBT. Acceptance strategies intended to counteract suppression (experiential avoidance) are simply another tool in the arsenal of a CBT therapist to combat emotional disorders. Although acceptance strategies are not routinely used in CBT, they are certainly compatible with the CBT model and have almost certainly already been employed by experienced therapists in certain cases. We believe that therapeutic strategies tailored at maladaptive response-focused emotion regulation strategies, such as those offered by ACT, are useful in therapy; however, we are not convinced that ACT or other acceptance-based treatment are part of a *third wave* of psychotherapy, replacing CBT. There is no data to suggest that it represents an entirely new treatment approach.

We recommend that future studies conduct formal mediation analyses. There is some preliminary evidence to suggest that ACT and CBT might work through different mechanisms (Hayes et al., 2006). However, the evidence is too preliminary to draw any firm conclusions. Moreover, we recommend that future studies examine the efficacy of enriched CBT approaches that include acceptance-based and other response-focused emotion regulation strategies.³ Specifically, future research may examine whether different adaptive emotion regulation strategies have an additive effect on outcome and whether outcome is maximized by tailoring emotion regulation strategies to an individual person or diagnosis. Gross and John (2003) have demonstrated that individuals differ in their habitual use of antecedent- and response-focused emotion regulation strategies, and that these individual differences are meaningfully associated with emotional experiences and psychosocial functioning. For example, they found that individuals who habitually use reappraisal to regulate emotions experience more positive emotion and less negative emotion overall, have better interpersonal functioning, and report greater well-being. In contrast, individuals who habitually use suppression experience less positive emotion and greater negative emotion, have worse interpersonal functioning, and report lower well-being. It would further be important to study to what extent the ability to flexibly apply different emotion regulation strategies to situational demands predict or mediate treatment outcome (Bonnanno, Papa, Lalande, Westphal, & Coifman, 2004).

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³ One of the reviewers suggested that these philosophical differences supersede the similarities and compatibilities on the technical level and strategic level. Future research will need to examine whether the two treatment approaches can, in fact, be combined.

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