Mindfulness and Acceptance Techniques

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Chapter to appear in D. J. A. Dozois (Ed.),
Cognitive Behavioral Therapy: A Complete Reference Guide
Wiley

July, 2012

Abstract

The past decade has witnessed a dramatic increase in interest in models of cognitive behavior therapy that incorporate principles and techniques involving mindfulness and psychological acceptance. Several novel models of CBT have been developed, and many established models have likewise begun to incorporate these ideas and procedures. Although a great deal more research is needed, the research to date is largely supportive not only of the broad effectiveness of these approaches, but also their specific theoretical mechanisms.

Keywords

Mindfulness
Acceptance
Psychological acceptance
Experiential avoidance
Acceptance and commitment therapy
Dialectical behavior therapy
Mindfulness-based cognitive therapy
Metacognitive therapy
Behavioral Activation

Mindfulness and Acceptance Techniques

This being human is a guest house
Every morning a new arrival.
A joy, a depression, a meanness,
some momentary awareness comes
as an unexpected visitor.
Welcome and entertain them all!
Even if they're a crowd of sorrows,
who violently sweep your house
empty of its furniture,
still, treat each guest honorably.
He may be clearing you out
for some new delight….

~ Rumi, The Guest House

One of the most prominent trends in the field of cognitive behavior therapy (CBT) over the past couple of decades has been the dramatic increase in theories and clinical strategies that highlight psychological acceptance and mindfulness. Indeed, hardly a week goes by that CBT clinicians do not receive multiple solicitations for books, journals, workshops, or webinars based on these themes. This trend is reflected in serious clinical innovation, scholarship, and careful research. As seen in Figure 1, for example, there has been an exponential growth in scholarly publications on mindfulness and psychological acceptance over the past decade. At the same time, there has been no shortage of pseudoscience that has capitalized on the increasing prominence of this work. Although interesting in its own right, a review of mindfulness pseudoscience is beyond the scope of this chapter; we focus instead on developments that are scientifically grounded.

Compared with the behavioral tradition more generally, the discourse on mindfulness and acceptance suffers from a lack of clear consensus regarding the meaning of various terms, including the term mindfulness itself. An advantage of technical terminology in any scientific discipline is that such terms avoid the baggage of folk language that can contribute to confusion when used in a technical context. In CBT, concepts such as "conditioned stimulus" or "cognitive heuristic" are more likely to have clear and precise meanings than are concepts derived from folk psychology such as "fear" or "motivation." In the case of mindfulness, the term was originally used in Hindu and

Buddhist spiritual traditions, and only recently made its way into the lexicon of Western psychology. As a consequence, it lacks a precise technical meaning, and consensus has yet to emerge regarding how best to understand it. Many CBT clinicians, scholars, and researchers clearly believe that there is something of value represented by the concept, even if they have yet to agree on exactly what that is (Herbert & Forman, 2011a).

In this chapter, we briefly review the growth of psychological acceptance and mindfulness in CBT, including the various reactions these ideas have received within the field. We discuss the conceptualizations of these terms as commonly used within CBT, and suggest trends toward emerging consensus. We then review the major psychotherapy models within the broad CBT family that emphasize mindfulness and psychological acceptance. We summarize the research to date on outcomes and mechanisms of mindfulness-based interventions within CBT. We then discuss the most common clinical strategies and techniques used to target these processes, including clinical case examples to illustrate their use. We conclude by suggesting directions for future clinical innovations and research directions.

The Rise of Mindfulness and Psychological Acceptance in CBT

In the West, the concept of mindfulness has been most closely associated with Buddhism, which was brought to the United States by 19th century Asian (and especially Chinese) immigrants (Seager, 1999). Buddhist concepts and practices initially had little impact on either mainstream culture or the field of psychology. Beginning in the middle of the 20th century, psychoanalysts began discussing meditative practices in relation to psychotherapy (Smith, 1986); this interest was subsequently picked up by existential and humanistic psychologists (Kumar, 2002). The concept of mindfulness was introduced to academic psychology through the work of the social psychologist Ellen Langer (1989a, 1989b). She described mindfulness as a "limber state of mind" (Langer, 1989a, p. 70), which involves a sensitivity to context and an openness to new information.

Mindfulness meditation became increasingly popular in mainstream American culture during the 1970s and 80s, and began to impact the field of behavior therapy by the early 1990s.

Hayes (2004) provides a useful description of the emergence and growth of mindfulness and related concepts and practices within behavior therapy. According to this analysis, the field can be understood as three overlapping historical generations or "waves."[1] The first generation reflects the seeds of the behavior therapy movement in the 1950s, including the contributions of Skinner (1953), Wolpe (1958), and Eysenck (1952), and the formal birth of the discipline in the 1960s. The approach was clearly revolutionary, marking a distinct break from the dominant psychoanalytic model of the time. It was marked by close connections between basic laboratory research and applied technologies, especially with respect to classical and operant conditioning principles.

The second generation was born of the perceived limitations of the first-generation behavior modification principles and technologies that did not sufficiently account for the role of language and cognition in psychopathology and its treatment. Reflecting the larger "cognitive revolution" in psychology more broadly, this approach gained traction in the 1970s and continues through the present day. The second generation saw the "C" added to "BT," as cognitive factors came to be emphasized. Approaches developed by luminaries such as Albert Ellis (Ellis & Grieger, 1977; Ellis & Harper, 1975) and Aaron Beck (Beck, Rush, Shaw, & Emery, 1979) prioritized one's cognitive interpretation of the world as determining emotional reactions and subsequent behavior. Emphasis also shifted to clinical innovations derived from the consultation room rather than the research laboratory, and to research methods favoring clinical trials of multicomponent treatment packages for psychiatric syndromes.

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[1] O'Donohue (2009) similarly demarcates the field into three generations, the first two of which correspond closely to those described by Hayes (2004). However, O'Donohue's third generation, which he describes as more aspirational than realized, involves a renewed focus on basic principles derived from modern learning theory. These would include basic concepts related to acceptance and mindfulness (e.g., rule-governed behavior, stimulus equivalence), but would also include recent findings from related fields such as behavioral economics.

Although its roots can be traced to earlier developments, the third generation of CBT began in earnest in the 1990s, and is gaining increasing momentum up to the present. The focus on language and cognition in the genesis and treatment of psychopathology remains, but with a different emphasis. Instead of trying to change the content of cognition, the emphasis is more on fostering a nonjudgmental, accepting stance with respect to distressing experiences, including disturbing thoughts and dysfunctional beliefs. In addition, there is renewed interest in linking clinical technologies to basic theoretical principles and laboratory research.

Interestingly, there are parallels in the way each of these developments has been received by the dominant paradigm of the time. When early behavior therapy pioneers challenged the psychoanalytic establishment, the initial reaction was to simply ignore the work as insignificant. As it began to gain traction, and ignoring was no longer an option, it was greeted with hostility and disdain. As the work continued to develop, it was co-opted with pronouncements that it represented nothing that was not already part of the established paradigm. Finally, the developments were gradually accepted into the mainstream, and a new equilibrium was established. This same pattern of reactions can be seen in the reaction of first generation clinicians and theorists to the cognitive revolution of the second generation, and in the more recent reaction of many in the second generation to the growth of mindfulness and acceptance within CBT (Goldfried, 2011).

We should note that Hayes' (2004) historical analysis should not be taken to reflect the only "true" account of the history of behavior therapy; rather, it is simply one useful narrative to help organize the development of the field over the past half- century. There are undoubtedly other ways of describing this history that may be equally (or perhaps more) useful. Moreover, the fact that one can track developments across time in this way does not by itself necessarily imply that later developments are superior to earlier ones. Whether cognitive concepts add value to purely behavioral ones, or whether acceptance and mindfulness concepts likewise have incremental value,

are questions that must be resolved scientifically and should not be simply assumed. Regardless of one's perspective on this historical narrative, there is no doubt that the concepts of psychological acceptance and mindfulness have become quite popular within CBT, and are destined to play an increased role in the coming years.

What is Mindfulness?

As noted above, there has yet to emerge a full consensus around a single understanding of the concept of mindfulness. The term derives from ancient Buddhist and even earlier Hindu teachings and practices. In Buddhist traditions, human suffering is believed to result from excessive attachment to transient objects and mental states. Contemplative meditative practices are undertaken in an effort to undermine this excessive attachment, fostering a sense of detached awareness of experience and ultimately spiritual enlightenment. Similar ideas have also played a role in Western traditions, including Hellenic philosophies and monastic Christian practices.

Concepts similar to mindfulness can also be found in psychology – and especially its applied wings – since near the time of the formal founding of the discipline over a century ago (Herbert & Forman, 2011b). Williams and Lynn (2010) trace the theme of acceptance beginning with the writings of Freud and continuing throughout the 20th century. Both the psychoanalysts and subsequently humanistic psychologists stressed the importance of self-acceptance to well-being. Beginning in the 1990s, attention shifted to psychological or experiential acceptance, i.e., the open acceptance of the totality of one's ongoing stream of experience, especially distressing experience. It was during this time that a number of clinical innovations were developed within CBT that focus specifically on psychological acceptance. Although some of these developments were genuinely novel, others involved borrowing liberally from earlier work (e.g., from experiential psychotherapies), and still others consisted of reconceptualizing existing behavioral procedures (e.g., exposure).

This increased emphasis on the goal of psychological acceptance and technologies to promote it led to efforts to describe and define the concept of mindfulness. The most frequently cited definition was offered by Jon Kabat-Zinn: "paying attention in a particular way: on purpose, in the present moment, and nonjudgmentally" (Kabat-Zinn, 1994, p. 4). There are several noteworthy aspects of this definition. First, it highlights the idea that mindfulness is an active process involving intentional embracing of experience, rather than simply passive observation. Second, it emphasizes a sense of heightened awareness of one's ongoing stream of experience as it unfolds. And third, it underscores the critical idea of nonjudgement, or the acceptance of what is, rather than what one wishes to be, with respect to one's experience. Kabat-Zinn described mindfulness as a verb, which is reflected in its common use as a synonym for the practice of mindfulness meditation.

Following Kabat-Zinn's discussion, several groups developed scales to address mindfulness. Each of these efforts involves a somewhat different conceptualization of the concept. Brown and Ryan (2003) developed the Mindful Attention Awareness Scale, which is based on a unidimensional construct emphasizing "present-centered attention-awareness." These researchers believe that a distinct assessment of psychological acceptance is unnecessary. The Toronto Mindfulness Scale (Lau et al., 2006) similarly emphasizes present-moment attention to and awareness of ongoing experience, especially in relation to contemplative meditation practices. This scale was designed as a state, rather than a trait, measure. Based on an intervention model known as dialectical behavior therapy (discussed below), Baer and colleagues developed the Kentucky Inventory of Mindfulness Skills (Baer, Smith, & Allen, 2004) and the Five-Facet Mindfulness Scale (Baer, Smith, Hopkins, Krietemeyer, & Toney, 2006), both of which deconstruct the concept into multiple factors.

Herbert and Cardaciotto (2005) proposed a middle ground between the unifactorial model of Brown and Ryan and the five-factor model of Baer and colleagues. We suggested that mindfulness could be conceptualized as being comprised of two distinct factors: "(a) enhanced awareness of the full range of present experience, and (b) an attitude of nonjudgmental acceptance

of that experience" (Herbert & Cardaciotto, 2005, p. 198). Cardaciotto, Herbert, Forman, Moitra, and Farrow (2008) subsequently developed the Philadelphia Mindfulness Scale (PHLMS) to assess these two dimensions. A number of studies support this two-factor structure (Blacker, Herbert, Forman, & Kounios, 2012; Brown et al., 2011; Myers et al., 2012; Silpakit, Silpakit, & Wisajun, 2011).

Although unanimity has not emerged -- and in fact may never emerge -- on a single definition of mindfulness, consensus is building around a few themes. First, the dual concepts of enhanced present-moment attention to one's experience, and psychological acceptance of that experience, feature in most conceptualizations of the construct. It is important to note that acceptance in this context does not mean the acceptance of the status quo in one's life. To the contrary, acceptance refers to an embracing of the totality of one's subjective experience, e.g., thoughts, feelings, sensations, and memories. Importantly, this includes not only letting go of the struggle with distressing experiences, but also abandoning the tendency to cling tightly to positive experiences, which are invariably transient. Second, most agree that mindfulness is a psychological state, rather than any particular practice designed to foster that state. In other words, although some may achieve a heightened state of mindfulness through formal meditative practices, the state itself is not synonymous with those practices. One may become more mindful while working, eating, exercising, or any other life activity. Finally, in the context of psychotherapy, enhancing mindfulness is not a goal in and of itself, but rather is a means to an end (Herbert, Forman, & England, 2009). Mindfulness and acceptance-based therapeutic strategies and techniques aim to enhance one or more aspects of this psychological state, in the service of some larger goals related to living a more fulfilling life. We explore these themes further below in the context of specific interventions.

Clinical Models Within CBT Highlighting Mindfulness and Acceptance

Strategies aimed at enhancing mindfulness and acceptance have become central to a variety of novel CBT models. These various approaches can be divided along two orthogonal dimensions:

the range of pathology targeted, and the broader theoretical framework in which they are situated. Regarding the first dimension, some models reflect comprehensive frameworks that are not specific to any particular pathology, whereas others are more focused in their targets. The latter includes techniques that have increasingly found their way into traditional, mainstream CBT approaches. As for the second dimension, the various models are derived from different theoretical paradigms within the larger CBT family. These differences are reflected both in the nature of the theories underlying the respective clinical models, including the theoretical and technological terminology they employ, as well as the specific interventions they prescribe. Some approaches are derived from traditional cognitive meditational traditions such as cognitive therapy, whereas others are rooted in behavior analysis. Despite these distinctions, all of these approaches share an emphasis on fostering nonjudgmental awareness and psychological acceptance of distressing subjective experience.

Mindfulness-Based Stress Reduction (MBSR). The first modern model to bring a mindfulness sensitivity to mainstream applied psychology was MBSR, developed by Kabat-Zinn and colleagues at the University of Massachusetts Medical Center. Interestingly, unlike all of the other approaches discussed below, MBSR did not originally develop within the context of CBT, although it is now often associated with the broad CBT tradition. Rather, the approach stemmed from Kabat-Zinn's personal interest in Zen Buddhism combined with his scientific sensibilities developed through professional training in molecular biology and his work with medical patients (Kabat-Zinn, 2005). MBSR is a structured program for patients with chronic pain and other medical conditions, and emphasizes the formal practice of mindfulness meditation as well as Hatha Yoga (a set of postures, breathing techniques, and meditation designed to induce a healthy mind and body). It is typically delivered in a group format over eight consecutive weekly sessions. Consistent with its Buddhist origins, MBSR is based on the idea that much suffering results from wanting things to be different than they actually are, particularly in the context of chronic medical problems. The approach

fosters comfort with simply "being" rather than always "doing" as a complement to the action and goal orientation of Western medicine.

Dialectical Behavior Therapy (DBT). Like MBSR, DBT developed in part from the interest of its founder Marsha Linehan in Buddhism, but unlike MBSR, DBT developed from within the traditional behavior therapy tradition (Linehan & Dimeff, 2001). The impetus for the development of DBT was Linehan's frustration with standard CBT programs for the treatment of chronically suicidal patients, many of whom qualify for a diagnosis of borderline personality disorder. The "dialectic" in the program's name reflects various tensions inherent in the program, including between acceptance of intense emotional experiences on the one hand and behavior change on the other. DBT emphasizes a therapeutic relationship in which the therapist is considered a committed ally rather than an adversary. The therapist acknowledges the intensity of the patient's emotional distress while at the same time advocating for, and creating behavioral contingencies that favor, change. Treatment is typically delivered through a combination of weekly individual psychotherapy sessions, supplemented by weekly group therapy sessions. Various skills, including distress tolerance, interpersonal, and mindfulness skills are taught during the group sessions, then applied and reinforced during the individual sessions (Linehan, Armstrong, Suarez, Allmon, & Heard, 1991).

Meta-Cognitive Therapy (MCT). Unlike MBSR and DBT, MCT developed as an extension of the cognitive therapy model of Beck and colleagues (Beck, 1976). MCT holds that some individuals have difficulty regulating their internal experience, and overreact to transient negative thoughts and feelings, leading to a pattern of intense rumination, worry, and self-focused attention. This dysregulation is thought to be due to biases in executive cognitive process that monitor and control thinking, known as metacognition (Wells & Matthews, 1994). Biases are found in both positive metacognitive beliefs, which refer to the presumed benefits of monitoring and controlling negative thoughts, and negative metacognitive beliefs, referring to beliefs about the danger of certain

thoughts and the uncontrollability of experience. MCT targets these metacognitive factors in order to restore adaptive control over cognitive processes (Wells, 2000, 2008, 2011). Importantly, it is believed that metacognition cannot be changed by directly challenging negative automatic thoughts. Treatment focuses instead on restructuring maladaptive *metacognitive* beliefs (e.g., the belief that worrying will prevent damaging consequences) as well as a variety of additional strategies designed to foster "detached mindfulness," and "cognitive decentering."

Mindfulness-Based Cognitive Therapy (MBCT). Similar to MCT, MBCT developed out of the Beckian cognitive therapy tradition, and remains firmly rooted in a cognitive theoretical framework. Using a structured interview, Teasdale and colleagues (2002) pursued a line of research in which they studied the way in which individuals responded to mildly depressive situations. They found that those with no history of depression tended to describe the events from a more detached, mindful perspective (which they term metacognitive awareness) relative to those with a history of depression. Those susceptible to depressive episode tended to experience a vicious cycle in which dysphoria activated negative thinking patterns, in turn exacerbating negative affect. MBCT is designed to interrupt this cycle by teaching patients to "decenter" from negative thoughts primarily through mindfulness exercises, including meditation training and practice derived from MBSR (Segal, Williams, &Teasdale, 2001). In addition, lower levels of metacognitive awareness also predicted relapse among depressed individuals. Although the approach was developed specifically to prevent depression relapse, recent efforts have employed it with currently depressed patients (e.g., Barnhofer et al., 2009), bipolar disorder (Deckersbach et al., 2012; Miklowitz et al., 2009; Stange et al., 2011; Weber et al., 2010; J. Williams et al., 2008), anxiety disorders (Craigie, Rees, Marsh, & Nathan, 2008; Evans et al., 2008; Felver, 2011; Kim et al., 2009; Semple & Lee, 2008; Wong et al., 2011), hypochondriasis (Lovas & Barsky, 2010; McManus, Surawy, Muse, Vazquez-Montes, & Williams, 2012; M. J. Williams, McManus, Muse, & Williams, 2011; Yook et al., 2008), and insomnia (Heidenreich, Tuin, Pflug, Michal, & Michalak, 2006; Yook et al., 2008).

Functional Analytic Psychotherapy (FAP). Developed by Kohlenberg and Tsai (1991), FAP developed out of the theoretical school of behavior analysis, which is rooted in radical behaviorism and Skinner's (1957) analysis of verbal behavior. FAP focuses on the therapeutic relationship as the vehicle change. There is less focus on explicit skills building relative to DBT, and reduced emphasis on meditative practices relative to MBSR or MCT. Rather, the focus is on the identification, analysis, and modification of "clinically relevant behaviors," which refer to the individual's problems as manifested in the therapy session itself. Moreover, like the other models discussed here, there is an emphasis on accepting distressing experience rather than trying to change it. The approach defies the stereotype of applications of radical behaviorism, and in fact resembles in some ways modern forms of psychodynamic therapy in practice. Although FAP can be used as a stand-alone treatment, it is often integrated with another CBT approach, such as DBT or acceptance and commitment therapy (Callaghan, Gregg, Marx, Kohlenberg, & Gifford, 2004; Kanter, Tsai, & Kohlenberg, 2010).

Acceptance and Commitment Therapy (ACT). Of the various mindfulness and acceptance forms of CBT, ACT has attracted the most attention from researchers and clinicians alike. ACT was developed by Hayes and colleagues, and was originally known as "comprehensive distancing" due to the focus on achieving psychological distance from one's distressing subjective experiences. Like FAP, ACT developed from within a behavior analytic tradition. It represents the primary application of a scientific paradigm known as contextual behavioral science, which is also comprised of a behavioristic theory of language and cognition as well as a pragmatic philosophy of science. The central tenant of the ACT model is that attempts to control the content of distressing subjective experiences, although arising through normal, culturally-sanctioned psychological (and especially language) processes, are often ineffective, counterproductive, and even harmful. Like the other models discussed here, ACT fosters mindful awareness and acceptance of one's distressing experience. However, ACT is in a sense more radical (and arguably more theoretically consistent)

than some of the other models in that direct efforts to change the content or frequency of thoughts, feelings, sensations, memories, etc. are explicitly disavowed. Instead, the focus is on articulating personal values and associated goals, then behaving consistently with those values regardless of one's internal experiences at any given moment. Intervention strategies include some distinctive techniques, as well as many others borrowed from other approaches, including experiential exercises derived from humanistic and existential psychotherapies. The ACT model allows for any number of delivery formats, ranging from single-session group intervention to traditional individual psychotherapy. It is broadly applicable, having been used with a wide range of psychopathology, medical conditions, and other problems.

Behavioral Activation (BA). Like ACT and FAP, BA is rooted in behavior analysis. One of the foundational developments within CBT was Beck's cognitive therapy of depression (Beck, Rush, Shaw, & Emery, 1979). Beck's program consists of two broad interventions: one focused on concrete behavior change aimed at re-engagement with activities that have come to be avoided, and another focused on cognitive restructuring. However, component analysis studies suggest cognitive restructuring adds no incremental benefit to the behavioral component (Dimidjian, et al. 2006; Jacobson et al., 1996). These findings led some scholars to focus on developing the behavioral component as an intervention in its own right. In this process, they incorporated earlier behavioral work on depression by Ferster (1973) and Lewinsohn (Lewinsohn, 1974; Lewinsohn, Biglan, & Zeiss, 1976; Lewinsohn, Youngren, & Grosscup, 1979). BA aims to increase the overall amount of positive reinforcement in the depressed person's life, while also countering avoidance and withdrawal behaviors maintained by negative reinforcement. The approach utilizes scheduling of graded activities and mindful acceptance of distressing thoughts and feelings (Kanter et al., 2010). BA has recently been explored as a treatment for anxiety (Hopko, Robertson, & Lejuez, 2006) and for chronic medical conditions (Lundervold, Talley, & Buermann, 2006).

Integrated Behavioral Couples Therapy (IBCT). Developed by Andrew Cristensen at the University of California and Neil Jacobson at the University of Washington, IBCT is another program rooted in behavior analysis (Christensen et al., 2004; Jacobson et al., 2000). It is "integrative" in the sense that it integrates both acceptance and change among distressed couples. Although couples are encouraged to make some changes to accommodate one another's wishes, there is a major emphasis on abandoning chronic battles and accepting differences, as well as accepting one's emotional reactions to these differences, in the service of enhancing intimacy. IBCT begins with a formal assessment period, in which the partners are seen both as a couple and individually, in order to elucidate patterns in the couple's struggles and to develop a case formulation. In the active treatment phase, couples discuss recent events that relate to these larger themes, with the therapist encouraging more effective communication, and when appropriate, concrete behavior change. Themes of emotional intimacy and mutual acceptance are stressed throughout treatment.

Finally, a number of clinical innovators have incorporated acceptance- and mindfulness-enhancing strategies with traditional CBT programs. Roemer and Orsillo (2008) and Mennin and Fresco (2009) have both developed multicomponent acceptance-based treatments for generalized anxiety disorder. Similarly, Herbert and colleagues have combined exposure-based treatments for social anxiety disorder with ACT to create an acceptance-based behavior therapy for that condition (Dalrymple & Herbert, 2007; Herbert & Cardaciotto, 2005; Herbert & Forman, in press). Acceptance-based behavioral treatments for obesity have also been developed (Forman, Butryn, Hoffman, & Herbert, 2009; Forman et al., under review; Niemeier, Leahey, Palm Reed, Brown, & Wing, 2012). The sensitivities of acceptance and mindfulness-based CBT are also increasingly reflected in the work of other well-known traditional CBT scholars, including Barlow (Barlow & Craske, 2006; Barlow et al., 2011), Foa (Foa et al., 2005), Marlatt (Bowen, Chawla, & Marlatt, 2011; Marlatt & Donovan, 2005), Borkovec (Behar & Borcovec, 2005), Leahy (2002; 2011), and even Beck himself (Dozois & Beck, 2011).

Research on Mindfulness and Psychological Acceptance

There has been a veritable explosion of research over the past decade on various aspects of mindfulness and psychological acceptance. This work can be grouped broadly into three categories: 1) cross-sectional examination of the relationship between these constructs and psychopathology, psychosocial functioning, and quality of life, 2) assessment of treatment processes and mechanisms, and 3) evaluation of the effectiveness of mindfulness and acceptance-based interventions.

Relationship with psychopathology. The Acceptance and Action Questionnaire (AAQ; Bond et al., 2011; Hayes, Luoma, Bond, Masuda, & Lillis, 2006; Hayes et al., 2004) is the most widely used measures of psychological acceptance, especially in terms of one's ability to behave flexibly in spite of difficult internal experiences. A multi-sample study of over 2400 participants (Hayes et al., 2004) and a meta-analysis of 32 studies with over 6500 participants (Hayes et al., 2006) both demonstrated strong inverse associations between psychological acceptance and various measures of psychopathology.

As discussed above, a number of well validated measures of mindfulness have been developed. A comprehensive review of dozens of studies using these scales concluded that there is a great deal of converging evidence, albeit cross-sectional, that mindfulness is correlated with various dimensions of psychological health, including quality of life, positive affect, self-esteem, depression, anxiety, ability to sustain attention, and self-control (Keng, Smoski, & Robins, 2011). Moreover, functional neuroimaging has suggested that higher mindfulness levels is associated with a stronger ability to regulate emotional responses via prefrontal cortical inhibition of the amygdala (Keng et al.).

Treatment mechanisms. A substantial literature supports the mechanisms postulated to drive acceptance and mindfulness-based treatments, including variables such as experiential acceptance and metacognitive distancing (Hayes et al., 2006). One source of this evidence is a

group of outcome studies that have obtained evidence for the mediating role of changes in experiential avoidance in treatments of test anxiety (Zettle, 2003), trichotillomania (Woods, Wetterneck, & Flessner, 2006), worksite stress (Bond & Bunce, 2000), chronic pain (McCracken, Vowles, & Eccleston, 2005), nicotine addiction (Gifford et al., 2004; Hayes, 2005), psychosis (Bach, Gaudiano, Hayes, & Herbert, in press; Gaudiano, Herbert, & Hayes, 2010), and obesity (Forman et al., 2009). A trial that tracked changes in mediators and outcomes over time revealed somewhat differing mediators between ACT and traditional CBT (Forman, Chapman, et al., 2012). Hayes, Levin, Yadavaia, and Vilardaga (2007) conducted a meta-analysis of mediational findings in 12 outcome studies of ACT and obtained support for the mediating role of cognitive defusion, experiential avoidance, and mindfulness.

In a review of the research on behavioral activation, Kanter and colleagues (2010) concluded that there is strong support for the components of activity scheduling, relaxation, and skills training interventions. Other common components of behavioral activation programs (e.g., values clarification, procedures targeting verbal behavior) have received support as part of multicomponent packages, but have not yet been shown to have specific effectiveness independently.

Mindfulness training has also been linked to various positive states of mind, and even neuropsychological abilities. A systematic review of 23 such studies provides preliminary support that mindfulness training improves attentional and working memory capacity and executive functions, though methodological flaws reduce confidence in these findings (Chiesa, Calati, & Serretti, 2011). Laboratory-based component studies offer an experimental method of investigating mechanisms of action. A recent meta-analysis of 66 such studies (Levin, Hildebrandt, Lillis, & Hayes, in press) concluded that acceptance, defusion, present-moment awareness, values, and mindfulness are all independently efficacious over and above comparison components. For example, acceptance strategies outperformed control strategies for people suffering from chronic

lower back pain (Vowles et al., 2007) and for coping with food cravings (Forman et al., 2007). Interestingly, the findings on acceptance- and mindfulness-based mechanisms contrast with the literature on cognitive mechanisms of treatment effects, and of the effects of direct cognitive change strategies. Despite the continued popularity of CBT intervention models emphasizing these components, there is in fact limited evidence to support their specific effects (Longmore & Worrell, 2007).

Efficacy of mindfulness and acceptance-based interventions. Most meta-analyses and qualitative reviews have obtained robust evidence for the efficacy of mindfulness and acceptance-based interventions. ACT, in particular, has accumulated a relatively large empirical basis though it still lags compared to the enormous database in support of traditional CBT (Beck & Dozois, 2011; Butler, Chapman, Forman, & Beck, 2006). Based on their meta-analysis of 24 studies, Hayes and colleagues (2006) concluded that ACT was highly effective for treating a wide range of psychopathology, and outperformed comparison treatments. Another meta-analysis, carried out by an independent investigator, examined 13 randomized controlled trials in which ACT was compared to a control group and obtained similar results, though the methodological rigor of many of the analyzed studies was judged to be problematic and inversely related to effect size (Öst, 2008). However, Powers et al.'s (2009) meta-analysis of 18 studies concluded that ACT had only a small and insignificant advantage over other established treatments. A re-analysis of the same dataset by Levin and Hayes (2009) concluded that ACT, in fact, was somewhat more efficacious than comparison treatments. A number of studies have examined the effect of ACT (and related approaches) for chronic pain, and a recent meta-analysis of 22 studies (n = 1,235) suggested modest efficacy (Veehof, Oskam, Schreurs, & Bohlmeijer, 2011). However, a large longitudinal study provides support for robust longer-term effects of ACT for chronic pain (Vowles, McCracken, & O'Brien, 2011). A number of ACT trials have been criticized for small samples, lack of randomization, absence of a strong comparison condition, shorter-term assessments, and possible

experimenter allegiances. In one trial without these particular shortcomings, patients with depression or anxiety who received ACT demonstrated equivalent gains at post-treatment, but greater regression to baseline at 18-month follow-up, compared to those who received traditional CBT (Forman, Shaw, et al., 2012). A particularly rigorous trial of anxiety disorder patients demonstrated that, at 12-month follow-up, ACT patients had better clinical severity ratings but CBT patients reported greater quality of life (Arch et al., 2012).

Mindfulness-based therapies (MBSR, MBCT) also have documented efficacy. For instance, a meta-analysis of 39 studies (n = 1,140 participants) revealed that these treatments produce moderate to large effects among patients with cancer, generalized anxiety disorder, depression, and other conditions (Hofmann, Sawyer, Witt, & Oh, 2010). Three meta-analyses of randomized clinical trials for major depressive disorder (consisting of 6, 10, and 21 trials) produced evidence that MBT reduces the risk of subsequent depressive episodes (Chiesa & Serretti, 2011; Fjorback, Arendt, Ornbol, Fink, & Walach, 2011; Piet & Hougaard, 2011). Preliminary evidence also exists for the efficacy of MBTs for treating eating disorders, according to a systematic review (Wanden-Berghe, Sanz-Valero, & Wanden-Berghe, 2011). A recent meta-analysis of 22 studies (n = 1,403) concluded that MBTs are efficacious in the treatment of anxiety and depression among cancer patients though the uneven quality of these studies was noted (Piet, Wurtzen, & Zachariae, 2012). MBSR also appears to moderately improve anxiety, depression and psychological distress among those with a chronic medical condition, according to another meta-analysis (Bohlmeijer, Prenger, Taal, & Cuijpers, 2010).

Dialectical Behavior Therapy has had an enthusiastic reception by clinicians and psychiatric treatment centers, but currently rests on a relatively modest basis of empirical support. Given that DBT was developed specifically to treatment borderline personality disorder (BPD), Kliem, Kröger and Kosfelder (2010) identified and meta-analyzed the 16 extant studies (including 8 RCTs) that examined DBT for BPD. DBT was equally (i.e., moderately) effective as other BPD-specific

treatments in reducing suicidality and other BPD-related symptoms, and resulted in equivalent attrition rates. A more general review of BPD for various conditions identified 11 RCTs that supported the efficacy of DBT and DBT-based treatments in reducing hospitalization rates, suicidality, self-harm, substance use, binge eating, and depression (Chiesa et al., 2011). An analysis of open trials provides preliminary support of DBT for eating disorders, but not for emotion regulation as a mechanism of action (Bankoff, Karpel, Forbes, & Pantalone, 2012). Limited evidence also exists that the effects of DBT persist for up to a year post-treatment (Keng et al., 2011; Kliem et al., 2010).

Several meta-analyses have been conducted on trials of behavioral activation (Cuijpers, van Straten, & Warmerdam, 2007; Mazzucchelli, Kane, & Rees, 2009; Mazzucchelli, Kane, & Rees, 2010). One of these evaluated 34 randomized controlled trials (with a total sample size of 2,055 patients) that compared BA to another treatment (Mazzucchelli et al.). Pooling all results, BA demonstrated a large and significant advantage over comparison treatments, both for those with symptoms of depression and for those who met criteria for major depressive disorder. A separate meta-analysis of 20 studies (n = 1353) also obtained evidence for the efficacy of BA for enhancing well-being among those who were not depressed (Mazzucchelli et al.).

Other mindfulness and acceptance-based approaches have received less empirical support, but show considerable promise overall. Acceptance-based behavioral treatments that borrow from the approaches discussed above appear to show solid efficacy. Examples include acceptance-based behavior treatments for generalized anxiety disorder (Roemer, Orsillo, & Salters-Pedneault, 2008), social anxiety disorder (Dalrymple & Herbert, 2007; Yuen et al., in press), and obesity (Forman et al., 2009; Forman et al., under review; Niemeier et al., 2012). A review by Öst in 2007 identified only two studies evaluating IBCT (Öst, 2008). These studies found that IBCT was equally effective as traditional behavioral couple therapy (TBCT). We could identify no later evaluations of IBCT other than a follow-up study of a previous trial that obtained evidence that IBCT was more effective

than TBCT at two years post-treatment, but that the treatments re-converged at five years post-treatment (Christensen, Atkins, Baucom, & Yi, 2010). Given that FAP does not lend itself to manualized treatment protocols, it is more difficult to research using conventional research methods. What research has been conducted on the approach, however, is largely supportive (García, 2008; Maitland & Gaynor, 2012). For example, FAP added to the effectiveness of standard cognitive therapy when combined with it (Kohlenberg, Kanter, Bolling, Parker, & Tsai, 2002); similar results were obtained in a small study of depressed adolescents (Gaynor & Lawrence, 2002). An RCT of smoking cessation concluded that the medication bupropion plus a combined FAP-ACT therapy outperformed bupropion alone (Gifford, Kohlenberg, Hayes, Pierson, Piasecki, Antonuccio, & Palm, 2011).

In sum, the growing database of outcomes studies strongly suggests that mindfulness- and acceptance-based interventions are effective treatments for a variety of psychological conditions. At the same time, systematic reviews have highlighted that that most of these treatments are supported by studies that vary in number, sample size, methodological rigor and laboratory independence. Thus, more conclusive evidence for efficacy awaits future study. There is also a growing literature supporting the theorized mechanisms of these interventions.

Clinical Strategies and Techniques

The various mindfulness- and acceptance-based treatment models, although distinctive in some respects, also share a number of common elements. As such, they utilize a number of overlapping treatment techniques. These techniques can be grouped into four overlapping groups: 1) those that facilitate an *awareness* of one's current perceptual, somatic, cognitive and emotional experience; 2) those that encourage *cognitive distancing* or "defusion" from one's thoughts and other internal events; 3) those that foster nonjudgmental *acceptance* of subjective experiences; and 4) those that aim to foster clarity with respect to one's *values*, and goals that are consistent with those values. Although these foci may be conceptually distinct, in practice specific intervention

techniques typically target more than a single area at a time. For example, an acceptance technique will likely also contribute to cognitive distancing, and vice versa. Moreover, any mindfulness-based CBT treatment plan will almost certainly also incorporate various "nonspecific" techniques (e.g., rapport building), as well as traditional behavior therapy techniques (e.g., psychoeducation, skills training). Given that these are shared across all CBT approaches, however, they are not reviewed here.

Awareness strategies. One of the most commonly used strategies for increasing awareness of one's ongoing stream of experience is ***mindfulness meditation***. The patient is instructed to focus entirely on his or her present moment perceptual, physiological, emotional, and cognitive experience. Often the patient is instructed to "just notice" these experiences, though variations include naming the experiences, categorizing them (as thoughts, feelings, sensations, etc.), or imaginally placing the experience on a visualization (e.g., leaves floating down a stream). In addition, the patient is taught to notice when his or her attention has shifted away from current experiences and gently to return attention to the present moment as often as necessary. ***Concentrative meditation*** involves instruction to direct one's full attention to a particular sensation or perception, such as one's breath or a candle flame, again with instructions to return to this focus as soon as the mind drifts. Thus, this type of training is focused on intentionally narrowing one's awareness. ***Compassion Meditation*** and ***Loving Kindness Meditation*** involve contemplations involving loving and kind concern for the well-being of all forms of life. Exercises may involve directing feelings of compassion and warm feelings towards oneself or others, and active contemplation on the need to take care of oneself and be free from suffering (Hofmann, Grossman, & Hinton, 2011). A number of somatic awareness techniques are utilized by MBSR in particular, including ***yoga*** (stretches and postures designed to enhance awareness and strength of the musculoskeletal system) and the ***body scan*** (a systematic movement of the focus of attention on sensations throughout the body).

Although awareness exercises are undoubtedly helpful for many, clinicians will want to be cognizant that empirical research has yielded inconsistent results regarding the relationship between awareness and psychopathology. For example, Baer et al. (2006) found that, among non-meditators, greater awareness (a factor they termed "observe") was *positively* correlated with dissociation, absent-mindedness, psychological symptoms, and thought suppression. Cardaciotto et al. (2008) found no correlations between awareness and various measures psychopathology. In contrast, in both of these studies measures of psychological acceptance were inversely correlated with psychopathology. These somewhat paradoxical findings may be related to the fact that certain conditions (e.g., anxiety, depression, pain, hypochondriasis) are associated with excessive self-focused attention and hyper-awareness of bodily experiences (e.g., Ingram, 1990; Mor & Winquist, 2002). This underscores the importance of pairing awareness training with a focus on psychological acceptance. That is, heightened awareness per se is not the goal, but rather nonjudgemental awareness characterized by an attitude of openness and acceptance with respect to one's experience.

Cognitive distancing. Closely related to the idea of enhanced awareness is the concept of achieving distance from one's experience, and particularly one's thoughts. In fact, cognitive distancing is a core step in cognitive restructuring, the distinctive feature of cognitive therapy. Cognitive self-monitoring, in which one's thoughts are recorded on paper or some other means, can help the patient see that thoughts are distinct from the self, and may not be "true." More commonly, mindfulness-based therapies encourage patients to visualize thoughts from a distance, for example as passing by on a crawler on a television news broadcast. In ACT, patients are trained in various strategies that enable distancing, which is referred to a ***cognitive defusion***. For example, patients are instructed to insert the prefix "I'm having the thought that…" before problematic thoughts, to sing thoughts in a silly voice, and to visualize thoughts as leaves floating down a stream or as signs held by soldiers in a parade. Another ACT technique, borrowed from an exercise developed by

Titchener (1916), involves rapidly repeating a key word from a distressing thought (e.g., "fat, fat, fat, fat, fat…") until the emotional associations of the word begin to fade.

Acceptance strategies. Arguably the interventions most central to mindfulness and acceptance CBTs are those aimed at fostering an open, accepting, nonjudgmental, even welcoming attitude with respect to the full range of subjective experience. Most ***mindfulness exercises*** also emphasize psychological acceptance in that patients are instructed to be aware of, but not to judge or attempt to alter, their internal experiences. ACT in particular makes frequent use of ***metaphors*** and ***experiential exercises*** to help the patients grasp the unworkability of attempts to control rather than accept internal experiences. For example, patients are asked to imagine being in a stalemate in a tug-of-war with a monster, which metaphorically illustrates the futility and cost of continued struggle against (attempts to control) the monster (one's unwanted experiences), versus a more successful strategy of dropping the rope altogether (accepting one's experiences) despite the fact the monster remains. Another acceptance exercise involves the therapist throwing towards the patient index cards labeled with the patient's most aversive internal experiences while he or she maintains a conversation with the therapist. Patients are first instructed to block the cards from landing on them, and subsequently are instructed to allow the cards to settle wherever they naturally would. Patients quickly notice that the first strategy requires a great deal of effort and results in impairments to the task at hand (the conversation), whereas the second strategy frees one's cognitive resources to attend to the conversation. In processing the exercise, the therapist helps the patient see that one need not eliminate negative thoughts (represented by the cards) in order to move forward toward the chosen goal (the conversation in this case). Various ***exposure*** exercises can also be conceptualized as acceptance strategies. These include traditional behavioral exposures, as well as exposure exercises framed as "opposite action" (a strategy in DBT involving behavior that is opposite from the action tendencies of one's emotions). Notably, the purpose of exposure is not framed as anxiety reduction per se, but rather as helping achieve distance from and

acceptance of distressing experiences, and enhancing willingness to move forward behaviorally even with negative subjective experiences.

Values clarity exercises. ACT, in particular, emphasizes that importance of ***clarifying and articulating one's chosen values***. From this perspective, values are "qualities of action that can be instantiated in behavior but not possessed like an object," and they give meaning to one's life (Hayes, 2004; p. 656). Values are viewed as an integral part of establishing the direction of therapy and for helping the patient see the ultimate purpose of accepting aversive internal experiences and for committing to difficult behavioral changes. As such, clarification of one's values is an essential ingredient in developing and sustaining motivation for change. Values differ from goals in the sense that the former are more general and are not directly attainable, whereas the latter reflect things that can be achieved. By analogy, if values are a sense of direction (like "going east"), goals would be mileposts along the road heading eastward. An important aspect of values work is not assuming that the focus of treatment would be solely (or even primarily) on the initial presenting problem, but rather casting a wider net and conducting an inquiry of the patient's broader goals, aspirations, and dreams. Exercises include posing existential questions such as "What do you want your life to stand for?" and imagining the eulogy one would hear at one's own funeral and comparing it with the most honest rendition based on one's recent life.

In addition to these intervention strategies, each mindfulness- and acceptance-based model employs a variety of additional treatment concepts and techniques. For example, some programs (e.g., ACT) contain a variety of additional treatment components not directly related to psychological acceptance and mindfulness per se.

Conclusions and Future Directions

As a technology firmly rooted in scientific values, the field of CBT is continuously evolving. Among the most prominent evolutions over the past decade has been the focus on theories and associated techniques that stress mindful acceptance of distressing subjective experiences in the

service of behavior change. As little as ten years ago, these concepts were still viewed with skepticism by many established behavior therapists, and mindfulness- and acceptance-based therapies were commonly seen as situated on the fringes of the field. But that has changed. A rapidly growing scientific literature supports not only the effectiveness of these approaches for a wide range of problems, but also many of their proposed theoretical mechanisms, and these approaches now increasingly find themselves within the mainstream of the field.

But that too will change, as it should. As science advances our understanding of these approaches, some theories and related technologies will be shown not to be useful, and will be cut by the knife of scientific parsimony. Others will go through further refinement, and still others will emerge. Just as the mindful practitioner aims to avoid excessive attachment to his or her transient subjective experiences, so too must we as scientists and practitioners avoid becoming overly attached to today's theories and technologies. They too are ephemeral, and destined for change.

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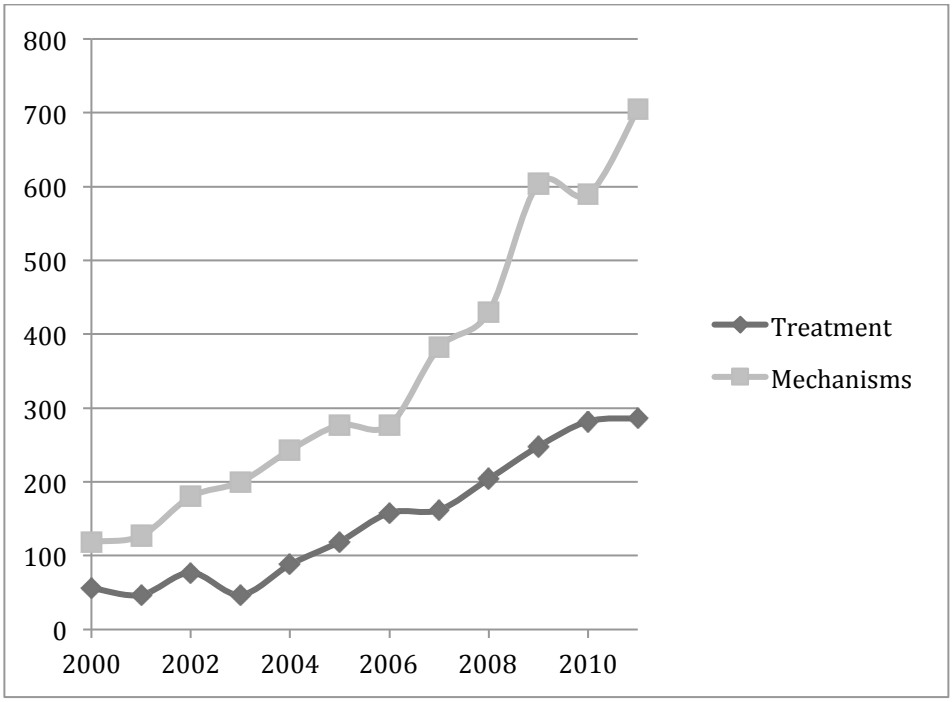
Figure 1
Number of non-overlapping publications on mindfulness and acceptance: 2000-2011



Note. Unique PsychInfo citations. "Treatment" keywords include acceptance and commitment therapy, dialectical behavior therapy, integrative behavioral couple therapy, functional analytic psychotherapy, mindfulness-based stress reduction, mindfulness-based cognitive therapy, and acceptance-based behavior therapy. "Mechanisms" keywords include mindfulness, meditation, defusion, experiential acceptance, psychological acceptance, experiential avoidance, and distress tolerance. "Mechanism" citations meeting the criteria for the "treatment" search were not counted among the mechanism publications.