ASSESSING MINDFULNESS AND EXPERIENTIAL ACCEPTANCE
ATTEMPTS TO CAPTURE INHERENTLY ELUSIVE PHENOMENA

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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.

The dark thought, the shame, the malice.
Meet them at the door laughing,
And invite them in.
Be grateful for whoever comes,
because each has been sent
as a guide from beyond.

The Guest House, a poem by Rumi (translated by Barks & Moyne, 1997) that has been utilized in mindfulness-based therapeutic approaches (e.g., Roemer & Orsillo, 2002; Segal, Williams, & Teasdale, 2002), conveys the essence of mindfulness and experiential acceptance. Such a "stance" stands in sharp contrast to the approach that many of us take toward our thoughts, feelings, and bodily sensations, particularly those that we label "unwanted." Bringing mindfulness and/or acceptance to our private experiences may fundamentally alter our relationship to these phenomena. How would we know if an individual was willing to "welcome and entertain them all" (Segal, 2003)? What might it look like to "meet them at the door laughing"? How might we measure this critical shift via self-report or experimental designs?

MEASURING THE PROCESSES OF MINDFULNESS AND ACCEPTANCE: THE HEART OF THE MATTER

Baer (2003) provides a thoughtful overview of the literature on the efficacy of mindfulness-based and related approaches. Commentaries on this target article (Dimidjian & Linehan, 2003; S. C. Hayes & Wilson, 2003; Kabat-Zinn, 2003; Roemer & Orsillo, 2003; Teasdale, Segal, & Williams, 2003) highlight the most salient research questions currently facing the field, including those related to mechanisms of action, the importance of considering the broader context from which such interventions have been drawn, and the compatibility/tension between mindfulness as an inherently "nonstriving" process and the often more goal-driven system of psychotherapy. Our capacity to examine these and associated questions hinges on our ability to operationally define such constructs as "mindfulness" and "acceptance" and to develop valid and reliable instruments that capture the psychological stance characterized by these terms. Such attempts have important implications, as interest in studying these phenomena, both in basic research paradigms and in applied settings, has progressively increased in recent years (e.g., S. C. Hayes, Follette, & Linehan, 2004).

Mindfulness Versus Acceptance, Mindfulness and Acceptance, Mindfulness or Acceptance?

The terms "mindfulness" and "acceptance" are sometimes used interchangeably. This is probably due in part to the fact that there is much overlap between various methods that attempt to facilitate similar

processes (e.g., S. C. Hayes & Wilson, 2003). Perhaps the most salient differences between these two constructs at this point are the divergent contexts from which they have been drawn and the "languages" in which they are currently being discussed (S. C. Hayes, 2002a; Orsillo, Roemer, Block-Lerner, & Tull, 2004). At the level of method, meditation techniques (sometimes referred to as "mindfulness" practices; see S. C. Hayes & Shenk, 2004; S. C. Hayes & Wilson, 2003) have an extensive history within Eastern spiritual traditions (most notably Buddhism; see Campos, 2002; Kumar, 2002) and Western contemplative practices. Although these practices have recently been extracted from their spiritual/philosophical context and are starting to be examined empirically, the language in which they are currently spoken about by some within the psychological community, clearly reflects this heritage and/or a "cognitive point of view" (S. C. Hayes & Shenk, 2004, p. 7).

Acceptance, although a component of all schools of psychotherapy to some extent (see S. C. Hayes, 1994, for a book-length discussion), has most recently been brought to the forefront within the context of the functional contextualism tradition. This tradition implies a unique way of looking at and discussing psychological events; the most useful unit of analysis considered the "act in context" (Nelson & Hayes, 1986). Thus, the construct of acceptance, as we conceptualize it here, is frequently discussed in a more precise, technical language than that with which mindfulness is often spoken.

Because of these divergent histories and "languages," we review definitions and operationalizations of each separately. However, there clearly *is* overlap between mindfulness and acceptance at the process level. Although attempts are being made to explicate these areas of overlap and operationally define facets of each construct (e.g., Baer, Smith, & Cochran, 2004; Bishop et al., 2004), the field is probably not yet in a place where we can discuss the assessment of each entirely separately and comprehensively (and perhaps this is not even the most useful goal; see S. C. Hayes & Shenk, 2004). We present several ideas about the relation between these two constructs throughout our discussion; continued attempts to define and assess each should provide valuable information about the interconnection and distinctions between them, as well as related processes and/or traits (e.g., emotional intelligence, emotion regulation).

CAUTIONS

Although defining any construct verbally carries the risk of reifying a process, it seems that we have to be especially cognizant of this potential in the

study of mindfulness and acceptance, processes that, by their very nature, are about the present moment. Thus, we must recognize that any attempts to capture the processes of mindfulness and/or acceptance are necessarily limited and involve a "snapshot" at best.

It is perhaps in large part due to this "elusive" nature of acceptance (Haas, 1994, p. 34) and mindfulness that operationalizing these constructs remains a daunting, though important, task. Although there is disagreement among researchers about what research questions should receive priority and what methodology should be used to address such questions, there is clearly consensus that operational definitions of the processes of mindfulness and acceptance are sorely needed (e.g., Bishop, 2002; Dimidjian & Linehan, 2003; S. C. Hayes & Wilson, 2003; Kabat-Zinn, 2003; Roemer & Orsillo, 2003; Teasdale et al., 2003). Researchers also seem to be in agreement that arriving at such operational definitions will not be easy (e.g., Kabat-Zinn, 2003; Roemer & Orsillo, 2003).

As a field, we are attempting to bring what has been referred to as an essential ingredient of spiritual and/or religious traditions (e.g., Marlatt & Kristeller, 1999; Sanderson & Linehan, 1999; Watts, 2000) and of all schools of psychotherapy (e.g., J. R. Martin, 1997) under the scrutiny of scientific analysis. Some maintain that there are essential ingredients of spiritual and/or clinical practices that cannot be conceptualized intellectually or communicated about in common language, let alone held under the lens of Western scientific methods (e.g., Shapiro & Walsh, 2003; Walsh, 1980). These researchers argue for recognition of the reciprocal nature of scientific/intellectual and other (i.e., more experiential) modes of investigation, and strongly suggest that researchers studying this content area be committed to their own personal practice.

In a sense, these recommendations parallel discussions about the extent to which clinicians and others teaching mindfulness-based methods should have their own practice (e.g., Dimidjian, Linehan, Marlatt, & Segal, 2002; Kabat-Zinn, 2003; Teasdale et al., 2003), yet they add another dimension to such discourse. Although one might be tempted to suggest that this debate offers yet another set of empirical questions, these researchers encourage us to examine the very assumption that our methods can address all questions of interest. They suggest that the paradigmatic assumptions of the behavioral sciences may clash with those of the "consciousness disciplines," and that as researchers, if our intellectual understanding is not grounded in an examination of our assumptions (Walsh, 1980) and "direct practice and experience," we may be "blind to our blindness" (Shapiro & Walsh, 2003, p. 107) with regard to the questions we ask, the methods we use, and the ways we interpret our data.

Thus, it is with a great deal of humility that we begin our review of the assessment of mindfulness and acceptance. We start with several proposed definitions of mindfulness, as well as an exploration of various facets of this process, and then review recently proposed conceptualizations of the process of acceptance. In the second half of the chapter, we review existing assessment procedures that tap the constructs of mindfulness and acceptance.

MINDFULNESS

Unraveling Various Uses and Conceptualizations

In addition to the fact that "mindfulness" has been defined in many different ways by various researchers, S. C. Hayes and Wilson (2003) are troubled by the notion that "mindfulness is sometimes treated as a technique, sometimes as a more general method or collection of techniques, sometimes as a psychological process that can produce outcomes, and sometimes as an outcome in and of itself" (p. 161). Ultimately, it is our intention to focus on mindfulness at the level of process. In order to distinguish elements of this process from other uses of the terms, however, a brief discussion of mindfulness at the levels of technique/method and outcome is warranted.

Mindfulness has been transported into the clinical domain within the context of several intervention packages, including mindfulness-based stress reduction (MBSR; e.g., Kabat-Zinn, 1990) and mindfulness-based cognitive therapy (MBCT; e.g., Segal et al. 2002). Dialectical behavior therapy (DBT; e.g., Linehan, 1993a, 1993b) and acceptance and commitment therapy (ACT; e.g., S. C. Hayes, Strosahl, & Wilson, 1999), as well as other treatment packages that have developed from within contemporary behavior analysis, have also been talked about under the rubric of "mindfulness-based interventions" or, as described by Baer (2003), "interventions incorporating mindfulness training." Although all of these approaches do incorporate some form of mindfulness training, to varying degrees (as well as other components that may themselves be active ingredients; e.g., Baer, 2003; Dimidjian & Linehan, 2003; Roemer & Orsillo, 2003), it is unclear whether all of these methods are placed in the same category because of the overlap in technique or due to the fact that all seem to be targeting and/or attempting to facilitate a similar process. S. C. Hayes and Shenk (2004), for example, argue that meditation training offers but one technique that may help change the context in which private events (e.g., thoughts, feelings, bodily sensations) are experienced (ACT's cognitive defusion strategies [e.g., S. C. Hayes, Strosahl, et al., 1999] and Marlatt's, 1994, "urge surfing"

offering other relevant examples). Which of these methods best fosters the stance of interest, under what conditions, with which individuals, remain empirical questions. Nonetheless, when we speak of "mindfulness" and "acceptance," we are attempting to do so without reference to the particular method that may facilitate this process.

At the level of outcome, mindfulness training can be discussed in terms of the outcome of a particular method (e.g., decreased anxiety), and sometimes as an outcome of a process (e.g., increases in mindfulness may lead to increased openness to experience and willingness to act in accordance with values). Discussion of outcome measures, as exemplified by the first use above, is beyond the scope of this chapter, as is more general information about the efficacy of methods that incorporate mindfulness training (see Baer, 2003; Craven, 1989; Perez-de-Albeniz & Holmes, 2000, for reviews).

It is with regard to the other aspect of outcome (i.e., outcomes of the process of mindfulness) where the line between process and outcome becomes particularly challenging to draw. To use an example, several researchers (e.g., S. C. Hayes & Shenk, 2004; Wilson & Murrell, 2004) have pointed to an increase in psychological flexibility as an important outcome of mindfulness and acceptance-based methods. Is this flexibility best conceptualized as part of the process itself (e.g., A. M. Hayes & Feldman, 2004) or as an outcome of a more basic process deemed "mindfulness" or "acceptance"? The answer to this question depends, in part, on the purposes of assessment, which relates to the specific research questions of interest. Although we recognize that this distinction may sometimes be artificial and may depend heavily on one's point of view in any given moment, we attempt to tease apart process (i.e., phenomenological correlates of mindfulness and acceptance) and outcome, and emphasize discussion of the former (see Bishop et al., 2003, 2004).

Working Definitions

Kabat-Zinn's (1994, p. 4) often-cited definition refers to mindfulness as "paying attention in a particular way: on purpose, in the present moment, and nonjudgmentally." Probably in part because many of those studying mindfulness-based methods have implicitly or explicitly based their work on MBSR, many other proposed definitions echo that put forth by Kabat-Zinn. For example, Marlatt and Kristeller (1999) refer to mindfulness as "bringing one's complete attention to the present experience on a moment to moment basis" (p. 68). Brown and Ryan (2003) note that mindfulness is "most commonly defined as the state of being attentive to and aware of what is taking place in the present" (p. 822). Baer (2003), after reviewing

definitions proposed by Kabat-Zinn, Linehan, and Hanh, among others, concludes, "thus, mindfulness is the nonjudgmental observation of the ongoing stream of internal and external stimuli as they arise" (p. 125). Other researchers' definitions are less consistent with this standard, if only in emphasis or angle (e.g., Langer, 1989; J. R. Martin, 1997; for more details on the relevant aspects of these definitions, see discussion of "deautomatization" and "decentering" below).

Facets of Mindfulness

There are clearly commonalities and areas of overlap among the various definitions reviewed. And, the variability in definitions may, at least in part, reflect the fact that mindfulness is a multifaceted process (Dimidjian & Linehan, 2003; Roemer & Orsillo, 2003). Researchers are just beginning to identify particular components, speculate about how they fit together, and examine them empirically. Linehan and colleagues' (e.g., Dimidjian & Linehan, 2003; Linehan, 1993a, 1993b) conceptualization of mindfulness may offer a useful starting point in this effort. This model proposes both "what" (i.e., what one does when practicing mindfulness) and "how" (i.e., qualities related to the ways these activities are done) skills of mindfulness. The "what" skills include observing, noticing, bringing awareness; describing, labeling, noting; and participating. These activities should be done (i.e., the "how" skills) nonjudgmentally, with acceptance, allowing; in the present moment, with beginner's mind; and effectively (Dimidjian & Linehan, 2003).

All of the proposed definitions reviewed seem to acknowledge the component of *attention* and/or *awareness* inherent in mindfulness. Although the content of this attention/awareness may differ on the basis of the specific definition (e.g., some conceptualizations emphasize attention to and/or awareness of internal phenomena, whereas others speak more of awareness of external stimuli), and likely the specific practices employed to facilitate this process, all definitions also seem to recognize the *present-moment nature* of this awareness. In fact, it is this facet that plays a significant role in the proposed mechanism of self-management (e.g., Baer, 2003), which involves increased sensitivity to environmental contingencies (e.g., Borkovec, 2002; Breslin, Zack, & McMain, 2002; Orsillo et al., 2004). What is attended to by an individual being "mindful" in any given moment may largely depend on whatever is most salient for that individual at that point. This component is perhaps best captured in the definition proposed by Baer (2003), reviewed above. In fact, instructions for formal insight meditation, perhaps after guiding the practitioner to attend to each domain of experience separately (e.g., sounds, sights, sensations

of the breath, thoughts), often include the guideline to "pay attention to whatever arises in any domain of experience."

In addition to the present-moment nature of attention/awareness, many conceptualizations of mindfulness emphasize qualities of this attending (Linehan et al.'s "how" skills) and/or aspects of intention. For example, Kabat-Zinn (1990) identified seven qualities of attending, including nonstriving, nonjudging, acceptance, patience, trust, openness, and letting go. Shapiro and Schwartz (2000) build on Kabat-Zinn's conceptualization, adding the following "affective (heart) qualities": gratitude, gentleness, generosity, empathy, and lovingkindness. Many of these qualities parallel Neff's (2003a, 2003b) articulation of the construct of self-compassion. It is important to note, however, that some (e.g., Bishop et al., 2004) have argued that these qualities are more usefully considered outcomes as opposed to parts of the process.

Segal et al. (2002) describe several facets of mindfulness and related skills that are "to be learned" (pp. 93–94) in MBCT. These skills include concentration (i.e., sustained attention; also emphasized by Bishop, 2002); awareness/mindfulness of thoughts, emotions/feelings, bodily sensations; being in the moment; decentering; acceptance/nonaversion, nonattachment, kindly awareness; letting go; "being" rather than "doing," non-goal attainment; bringing awareness to the manifestation of a problem in the body. Although these are not mutually exclusive, and some do not fit neatly into the "what" or "how" skills of mindfulness, they are relatively consistent with other conceptualizations. Segal et al. also make explicit another key aspect of mindfulness, one that may instead be implied in others' definitions and/or explication of facets. This component, decentering, actually involves many of the other skills described, and has been talked about by Segal et al. as "a more general mode of mind...helpful in relating to difficult experiences" (p. 61) as opposed to another technique in the armamentarium of tools to combat depression.

Decentering has been referred to more recently by Teasdale and colleagues as "metacognitive awareness," defined as a cognitive set in which negative thoughts and feelings are viewed and experienced as transient mental events, rather than as the self (Teasdale et al., 2002). Parallels may also be drawn to Deikman's (1982) "observing self," and S. C. Hayes and colleagues' (e.g., S. C. Hayes, 1984; S. C. Hayes, Strosahl, et al., 1999) notion of "self-as-context" alternatively referred to as "the transcendent self" and "that safe place (that) is consciousness itself" (S. C. Hayes, 2002b, p. 61). As a final example, although speaking explicitly of method, Craven (1989) seems to be referring to a key aspect of the process of mindfulness when he refers to the maintenance of a self-observing attitude as a core and defining feature of "all but most advanced" meditation techniques (p. 649).

What exactly does this "decentered" stance involve? J. R. Martin (1997) uses the popular figure/ground illusion (i.e., black and white picture that may be perceived as either a vase or two profiles facing each other) to illustrate two roles of mindfulness practice, both of which relate to decentering. First, Martin suggests that meditation and other mindfulness practices function to help individuals develop awareness into or insight about the existence or nature of alternative perceptions about the world (that the figure may be viewed as either a vase or a set of profiles). Once this awareness is cultivated, the second step involves the realization that "the phenomena contemplated are distinct from the mind contemplating them" (Goleman, 1980, p. 146, as cited in J. R. Martin, 1997). Martin likens this distinction to Safran and Segal's (1990, as cited in J. R. Martin, 1997) discussion of deautomatization and decentering. Deautomatization is described as a process of stepping out of automatic or habitual modes of processing, while decentering involves stepping back from any immediate perspective and perceiving it within a broader, more detached, context of awareness. Baer's (2003) reference to two statements that may be utilized in the cognitive therapy component of MBCT nicely highlights this distinction: "thoughts are not facts" and "I am not my thoughts" (p. 127), the first reflecting a process of deautomatization and the second illustrating the essence of decentering.

Langer's (1989) notion of mindfulness (i.e., "best understood as the process of drawing novel distinctions"; Langer & Moldoveanu, 2000, p. 1) may involve a deautomatization of sorts. Sternberg's (2000) discussion of this construct seems pertinent here. Sternberg describes Langer's mindfulness as involving, in addition to orientation to the present, elements of openness to novelty; alertness to distinction; sensitivity to different contexts; and implicit, if not explicit awareness of multiple perspectives. Although Langer's conceptualization emphasizes the cognitive domain of experience and individuals' relationships with external, as opposed to internal, stimuli, this notion bears a striking similarity to Linehan et al.'s (e.g., Dimidjian & Linehan, 2003) emphasis on "beginner's mind." It seems that deautomatization represents a necessary precondition for decentering, in a similar way that attention may represent a necessary, but not sufficient, condition for the cultivation of mindfulness (the "how" qualities representing other key elements of this stance). Thus, it seems that almost all agree that the process of mindfulness is characterized by attention and/or awareness in the present moment, and that the quality of this attention or awareness is critical. Various specific terms have been proposed to account for this quality of attention, or the "hows" of mindfulness practice; these seem to fall under the broad labels of compassion/acceptance/nonjudgment and decentering.

Although we consider it useful to examine various facets of the process of mindfulness, especially given the current state of the literature, considering each separately has its limitations as well. Likely, a great deal of overlap exists among these components, and it may be that interactive, as opposed to simple additive, models best account for the effects of technologies that attempt to facilitate this process. After introducing their "what" and "how" skills of mindfulness, Dimidjian and Linehan (2003) readily agree that future research should address questions related to the distinctness of each component and whether all essential components are represented. Accordingly, we will review measures that assess mindfulness more holistically, as well as those that attempt to capture only specific components of the process. This review follows a discussion of the construct of acceptance.

EXPERIENTIAL ACCEPTANCE

Clearly an important component of the process of mindfulness is a non-judgmental, accepting attitude toward one's own experiences. What exactly does acceptance involve? In what situations might it make sense to consider this process, either in conjunction with, or independent from mindfulness?

"Positive" and "Negative" Conceptualizations

A definitional challenge specific to acceptance (although in some ways it applies to mindfulness as well; see A. M. Hayes & Feldman, 2004) involves the notion that acceptance has often been defined "negatively" (i.e., the processes that it does not involve as opposed to those that it does involve). For example, Dougher (1994) notes that acceptance is often defined by what it is not, such as letting go or giving up on the struggle to control or change one's experience. Although defining and operationalizing various constructs including thought suppression (e.g., Wegner & Zanakos, 1994), emotional numbing (e.g., Litz, 1992), and other forms of experiential avoidance (e.g., S. C. Hayes, Wilson, Gifford, Follette, & Strosahl, 1996) may help us arrive at definitions of our terms, it seems that the assumption that the "flip side" or opposite of these processes fully represents acceptance, must at least be examined. Here, the distinction between constructional versus eliminative approaches seems relevant.

Many behavior change methods involve direct attempts to reduce problematic or maladaptive behavior. As an alternative to this "eliminative" approach, Goldiamond (1974, as cited in Delprato, 1981) instead

advocated for a constructional approach, defined as an orientation that involves the creation of behavioral repertoires, rather than a reliance on the elimination of such. In addition to general ethical concerns related to eliminative approaches, attempts to change, avoid, or otherwise eliminate processes at the level of private events (i.e., through punishment) often have paradoxical and unwanted effects (e.g., S. C. Hayes et al., 1996; see Purdon, 1999, for a review of the thought suppression literature). Additionally, instructing someone to "not suppress" his or her own thoughts or feelings does not provide much direction. Although discussion of these types of approaches are related to method, as opposed to process, it seems that making an effort to arrive at "positive" definitions of the processes of mindfulness and acceptance may allow us to more clearly explicate the stance that mindfulness-based and related methods are attempting to foster. It is noteworthy that such a constructional approach, versus an eliminative one, parallels the positive psychology movement, which has developed in part as a reaction to the disease model "empire" (e.g., Seligman, 2002).

Working Definitions

Sanderson and Linehan (1999) explicitly acknowledge that at least some forms of acceptance simultaneously involve passive and active processes. These authors point to the root of this term, "kap, " which means "to take, seize, or catch" and contrast these connotations with the commonly used synonym "receiving." They note that relying on this synonym entails an underappreciation for the "positive" aspects of the process of acceptance, including careful observation and openness to experience. Thus, Sanderson and Linehan conclude, "acceptance is the developed capacity to fully embrace whatever is in the present moment" (p. 200). From this perspective, an individual's capacity for acceptance may be enhanced by the process of mindfulness. Although they acknowledge that acceptance involves skills that must be practiced repeatedly, Sanderson and Linehan's definition seems to reflect a trait-like view of this construct. Others emphasize what acceptance "looks like" on a state or moment-to-moment basis.

In the context of discussing the distinction between MBCT (Segal et al., 2002) and traditional cognitive therapy, Baer (2003) notes that an advantage of MBCT is that "a mindful perspective about one's thoughts can be applied to all thoughts" (p. 129; see also Kabat-Zinn's, 1994, discussion of "weaving the parachute") as opposed to only depressogenic cognitions, those that traditional cognitive therapy targets. Acceptance, as considered within the contemporary behavior analytic tradition, has more limited applicability because it is defined functionally; it can only be understood in relation to

the context in which it occurs (e.g., S. C. Hayes & Shenk, 2004; Wilson & Murrell, 2004).

S. C. Hayes (1994) states that "psychological acceptance involves experiencing events fully and without defense, as they are and not as they say they are" (p. 30). He goes on to note, "In a more technical sense, it involves making contact with the automatic or direct stimulus functions of events, without acting to reduce or manipulate those functions, and without acting on the basis solely of their derived or verbal functions" (pp. 30–31). Such a technical definition is embedded, generally, within a particular philosophy of science deemed functional contextualism, and more specifically, within a particular view of human suffering (i.e., S. C. Hayes, Strosahl, et al., 1999; also see S. C. Hayes, Barnes-Holmes, & Roche, 2001). From a contextual perspective, the unit of analysis is "the act in context" (Pepper, 1942, as cited in Nelson & Hayes, 1986). Let us begin to examine the contexts in which it makes sense to consider acceptance as an option.

In discussing the functional nature of this definition, Dougher (1994) states that acceptance is only clinically relevant in situations that involve competing contingencies. Dougher offers the example of an individual considering initiating a conversation with someone that he or she finds attractive. Both reinforcing/desirable (i.e., "whatever immediate consequences are inherent in a potentially pleasant social interaction and the possibility of further development of the relationship, intimacy, shared experiences, etc.," p. 39) and punishing/undesirable (i.e., the possibility of experiencing the aversive thoughts and feelings that typically accompany rejection) consequences are operating here. Because people cannot be simultaneously approached and avoided, this situation inherently involves choice and a willingness to act in accordance with one set of contingencies while somehow "managing" the influence of the other set of contingencies.

Dougher (1994) makes it clear that there is no "right" answer with regard to which set of contingencies is the "better" one to act in accordance with; this "comes down to a question of values" (p. 39). In fact, this connection with what is meaningful and important for a given individual is inherent in all conceptualizations of acceptance from within the ACT community. S.C. Hayes, Strosahl, et al. (1999), for example, state, ". . . acceptance of negative thoughts, memories, emotions, and other private events is legitimate and honorable only to the extent that it serves ends that are valued by the client" (p. 205).

An individual may contact the thoughts and feelings that will inevitably arise in the context of valued action with various levels of an accepting stance. S. C. Hayes (1994) discusses a continuum of acts of acceptance, from resignation/tolerance, to the abandonment of the "change agenda" in some situations, to emotional/social willingness, to

deliteralization. This highest level, deliteralization, is defined as "the defusion of the derived relations and functions of events from the direct functions of these events" (p. 31). In other words, individuals acting from a deliteralized stance view their thoughts as thoughts, their feelings as feelings, and their bodily sensations as bodily sensations, rather than essentially seeing "through" these experiences. This notion bears a striking resemblance to the decentering facet of mindfulness, as discussed above. Thus, mindfulness may necessarily involve acts of acceptance in situations that constitute conflict of the sort discussed by Dougher (1994).

Although a detailed discussion of this issue is beyond the scope of the chapter, it is important to recognize that such conflict may be elicited by a multitude of "events." For example, if an individual is engaging in the practice of insight meditation, he or she may become aware of a painful physical sensation. Often our first reaction is to quickly move away from pain. This could take the form of distraction, movement, and/or avoidance of sitting meditation in general. However, the guidelines of insight meditation practice suggest that one should instead remain aware of and open to all experiences, including those that we label as painful. Additionally, if Buddhist teachings on attachment and "clinging" (e.g., Kumar, 2002) as a main source of our ubiquitous suffering ring true, every time that we experience a thought or sensation that we like and want to hold onto, we face similar conflicting contingencies. Thus, in all such moments, humans seem to be presented with choices.

These (inherently functional) conceptualizations of acceptance have significant implications for the assessment of this process. First, existing measures of acceptance and related constructs may be considered according to which "level(s)" of acceptance they target. Second, studying acceptance within one particular domain of experience (e.g., coping with pain) may offer a way to infer function from the form of specific behaviors (e.g., taking medication, continuing to remain active *with* the pain). However, adequately assessing the process of experiential acceptance may necessarily involve eliciting a conflict of sorts. Several recently conducted experimental studies have used a variety of challenge tasks (e.g., carbon dioxide inhalation, cold pressor task) toward this end. Still, we must bear in mind that the same stimuli may elicit varying degrees of conflicting contingencies in different individuals. In cases in which no conflict is present, "acceptance would not be interesting" (Dougher, 1994, p. 39). Relatively, it is imperative that we consider the nature of the competing contingencies in specific studies (particularly in experimental designs); is what is drawing an individual to approach versus avoid a challenge a pull toward action in line with their values or is it based on demand characteristics that may be inherent in our protocols?

MEASURES

We have made an effort, throughout this chapter, to untangle various uses of the terms mindfulness and acceptance. Putting aside questions of method and outcome, what does the *process* of being mindful look like? What does accepting our emotional responses involve? Unfortunately, our methods do not allow us to directly witness someone "nonjudgmentally observing" his or her thoughts and feelings. Or do they? The methods of cognitive neuroscience have brought us to places we had never dreamed of: EEG readings and fMRI images may offer a window through which to view aspects of this process. However, how do we know what we are capturing? We must either rely on method (i.e., "if he is practicing insight meditation, the readings on this PET scanner must equal "mindfulness") or on subjective reports (i.e., "right now I am accepting whatever thoughts and feelings arise") to make this determination. Several research groups are indeed making progress identifying physiological correlates of meditation practice and/or "more enduring changes in baseline brain function" (Davidson et al., 2003, p. 564) as a function of participation in MBSR or other mindfulness-based interventions (see also Dunn, Hartigan, & Mikulas, 1999).

Certainly, examining particular patterns of alpha and theta waves does give us a glimpse into what the processes of mindfulness and/or acceptance might "look like"; such technology may offer valuable tools in the study of mechanisms of change and related research questions. However, it is important to bear in mind that these methods allow us to be privy to but one domain of emotional experience (i.e., physiological reactions). In an attempt to capture the subjective experience of states of mindfulness, other studies have relied more on indirect methods of measurement. Several measures based on self-report have recently been developed and data are accumulating on their reliability and validity. An overview of these instruments appears below.

Our review is not intended to be exhaustive; we emphasize those assessment methods that have received the most empirical attention and/or that fit best with the conceptualizations of these constructs lain out above (we discuss the decentering facet separately, as assessing this component of mindfulness seems to involve unique challenges). We attempt to emphasize subjective correlates of the processes of mindfulness and acceptance themselves (or what may be considered immediate or short-term outcomes); discussion of measures that assess longer term outcomes of mindfulness (e.g., enhanced self-awareness, openness to experience) is beyond the scope of this chapter; the interested reader is referred to Bishop et al. (2004) and Brown and Ryan (2003) for discussion of these related

constructs. Unless otherwise indicated, all instruments may be considered trait measures, or assessments of a general tendency toward taking a mindful and/or accepting stance toward experience.

Assessment Based on Self-Report

Assessment of Mindfulness

Freiburg Mindfulness Inventory. The Freiburg Mindfulness Inventory (FMI; Buchheld & Walach, 2002) is a 30-item German-language inventory, which assesses the general factor of "mindfulness," as conceptualized in Vipassana meditation practices. Although factor analyses yielded some evidence for four separate facets of mindfulness (i.e., attention to present moment without personal identification with the experiences at hand; nonjudgments, nonevaluative attitude toward self and others; openness to one's own negative and positive sensations, perceptions, moods states, emotions, and thoughts; and process-oriented, insightful understanding), the authors suggest a general factor construction. Buchheld and Walach report high internal consistency both before and after a variable-length meditation retreat (Cronbach alpha = .093 and .94); the FMI was also shown to be sensitive to changes over the course of this retreat (with significant increases in FMI scores from Time 1 to Time 2).

Although translated, the FMI has not yet been validated in the English language. The authors also caution that this measure may be valid only with populations that have had exposure to mindfulness meditation; the questions may seem ambiguous or confusing to individuals not familiar with these concepts. However, the measure does seem to capture some of the major facets of mindfulness that we have highlighted above, including present-moment process-focused awareness and acceptance/nonjudgment of internal and external stimuli.

Kentucky Inventory of Mindfulness Skills. The Kentucky Inventory of Mindfulness Skills (KIMS; Baer et al., 2004) is a 39-item scale designed to measure distinct facets of mindfulness in broad populations (including those with no previous exposure to meditation or other mindfulness practices). The aspects of mindfulness tapped by this scale were drawn primarily from DBT (thus, this is a skills-based measure) and include "observing," or attending to internal and external stimuli; "describing," or labeling of noticed phenomena; "acting with awareness," or engaging in present-moment activity without distraction; and "accepting (or allowing) without judgment." Internal consistency estimates in both student samples and a clinical sample (adults diagnosed with borderline personality disorder) were adequate to excellent (.76 to .91).

Subscales of the KIMS have demonstrated convergent validity with measures of constructs theoretically related to mindfulness (e.g., emotional intelligence, life satisfaction, and openness) and divergent validity in regard to measures of neuroticism and general symptomatology, alexithymia, experiential avoidance, and dissociation. Additionally, all scales of the KIMS except for the "observe" scale are significantly correlated with the Mindful Attention and Awareness Scale (MAAS; Brown & Ryan, 2003; described below), with the "act with awareness" subscale demonstrating the strongest relationship.

The KIMS appears to be a particular promising measure of mindfulness, especially as it is conceptualized within DBT. The authors note that this scale may not capture some aspects of mindfulness (e.g., "kindly attention" from MBCT; Segal et al., 2002), but drawn as it is from Linehan et al.'s overarching model of mindfulness skills (e.g., Dimidjian & Linehan, 2003), it has considerable overlap with other conceptualizations of mindfulness.

Cognitive and Affective Mindfulness Scale. The Cognitive Affective Mindfulness Scale—Revised (CAMS-R; Feldman, Hayes, Kumar, & Greeson, 2003; also described in A. M. Hayes & Feldman, 2004) is a 12-item measure of "the awareness, attention, present-focus, and acceptance/nonjudgement aspects of the mindfulness construct" designed for use in a variety of populations with or without experience with mindfulness practice. This scale is composed of four factors: attention, awareness, acceptance of internal experiences, and present focus (A. M. Hayes & Feldman, 2004). A preliminary version (the CAMS) proved sensitive to changes in mindfulness over the course of psychotherapy (Kumar, Feldman, & Hayes, 2003, as cited in A. M. Hayes & Feldman, 2004). The current version (the CAMS-R) is still under development, but appears to be a promising assessment tool. It is associated with clarity of emotions, ability to repair mood, and cognitive flexibility, and predicts self-reported depression and anxiety symptoms (A. M. Hayes & Feldman, 2004).

Toronto Mindfulness Scale. The Toronto Mindfulness Scale (TMS; Bishop et al., 2003) is a 10-item measure of the state of mindfulness, as defined by a consensus team of researchers (Bishop et al., 2004). Although the conceptual model upon which the scale was based posited a two-factor model (i.e., intentional self-regulation of attention to facilitate nonjudgmental awareness; an observational stance characterized by curiosity, acceptance, and openness to experience), factor analysis yielded a single factor that reflects both of these elements (coefficient alpha = .76). The TMS was designed to be administered immediately following a meditation session. Bishop et al. report that the measure positively correlates with reflective styles of self-focused attention, openness to experience, and psychological mindedness, and is unrelated to dissociation, ruminative self-awareness,

self-consciousness, and social desirability. The TMS was also shown to discriminate between those with and without meditation experience and to be sensitive to change within the context of an MBSR program (although the authors caution against relying on TMS scores at one time point, which may not be representative of participants' general capacity for mindfulness; interestingly, Sternberg, 2000, argues that examining standard deviations vs. mean scores on such measures may be more valuable).

Preliminary data suggest that Bishop et al.'s measure captures both attention and some of the quality of attention facets of mindfulness, as discussed above. However, it is interesting to note that, although the TMS did discriminate between those with and without previous meditation experience, differences between *novice* and *experienced* meditators were not found. Bishop et al. suggest that these findings indicate that the core components of the process of mindfulness (i.e., attention/awareness with an attitude of acceptance, curiosity, and openness) are distinct from outcomes and/or benefits of sustained mindfulness practice over time (e.g., compassion, patience, nonreactivity), and should continue to be studied as such. Additionally, the single factor solution reported by Bishop et al. supports the notion of interconnected, as opposed to independent, facets of mindfulness.

Mindfulness Attention and Awareness Scale. The Mindful Attention and Awareness Scale (MAAS; Brown & Ryan, 2003) is a 15-item scale, which measures a single factor, the "present attention and awareness" component of mindfulness. The authors note that this type of awareness likely varies at both state and trait levels in all individuals, and thus this measure attempts to understand both inter- and intraindividual variations in the frequency of mindful (and mindless) states over time. Brown and Ryan explicitly chose not to assess the "how" and "why" aspects of mindfulness, as they were most interested in examining the relation between attention/awareness and variables related to subjective well-being and did not want their definition of mindfulness confounded with such outcome measures (also see Bishop et al., 2004).

Participants are instructed to rate each item on a 6-point Likert-type scale (1 = *almost always* to 6 = *almost never*). High scores reflect a greater degree of mindfulness, as the items retained through the scale construction exclusively measure aspects of mindlessness (see Brown & Ryan, 2003, for a discussion of this process and the potential advantages of the indirect approach). Adequate internal consistency of the scale was determined across a variety of samples, including five undergraduate, one community, and one national (U.S.) sample (Cronbach's alphas ranging from .80 to .87). Test-retest reliability in a student sample was also good (intraclass correlation coefficient = .81) over a 4-week period. The MAAS has also

demonstrated convergent validity with emotional intelligence, clarity of emotional states, ability to repair mood, attention to emotions, and openness to experience, as well as measures of well-being (positive affectivity, life satisfaction, and self-actualization). It is moderately correlated with the Mindfulness/Mindlessness Scale (MMS; Bodner & Langer, 2001, as cited in Brown & Ryan, 2003), an unpublished measure of the tendency to achieve mindful states, as conceptualized by Langer (1989). Finally, MAAS scores were inversely related to neuroticism, anxiety, depression, negative affectivity, health complaints, and somatization.

Thus, the MAAS is an indirect measure of the awareness/present-moment attention facet of mindfulness. Although it addresses only one potential component of mindfulness, it seems to be a promising tool with regard to a subset of research questions.

Measures of decentering. Of the facets of mindfulness discussed, decentering remains of the most challenging to operationalize (e.g., Roemer & Orsillo, 2003). One assessment tool that has been used to attempt to capture this element of an individual's relationship with his or her thoughts and feelings is a measure of believability. For example, Bach and Hayes (2002) asked participants with psychotic symptoms to rate the degree to which they believed in the "truth" of their particular hallucinations and/or delusions. Change in believability ratings was related to lower rehospitalization rates for participants assigned to the ACT (vs. a treatment-as-usual) condition. A similar believability measure was used by Zettle and Hayes (1987).

Believability ratings may be viewed, at least in part, as one way of assessing the process of decentering. Ratings of cognitive flexibility (e.g., Cognitive Flexibility Scale; M. M. Martin & Rubin, 1995) may also offer a useful way to tap into the deautomatization aspect of decentering. Bishop et al. (2004) offer several additional suggestions for capturing this facet that emphasize what they deem the "complexity of cognitive representations," which involves the experience of one's thoughts, feelings, and sensations as "contextual, relativistic, transient, and subjective" (p. 234). Coding procedures utilized by Labouvie-Vief, Chiodo, Goguen, Diehl, and Orwoll (1995) in the examination of self-narratives, as well as Moore, Hayhurst, and Teasdale's (1996) paradigm utilizing autobiographical memory (Measure of Awareness and Coping in Autobiographical Memory [MACAM]), may begin to capture this process.

Moore et al. (1996) developed the MACAM in an effort to operationally define the construct of metacognitive awareness. In this research paradigm, participants are asked to listen to audiotaped vignettes designed to evoke mild states of depression, and are asked to think of a time when they felt similarly. Through semistructured interviews, responses are elicited and

coded with regard to the degree of metacognitive awareness at the time of the event, from 1 (minimal discrimination of various negative thoughts and feelings; statements such as "I feel like crap") through 5 (discrimination of self from thoughts and feelings, reached quickly, more clearly, and/or persistently; e.g., "I was able to step back from my feelings of sadness").

Teasdale et al. (2002) demonstrated that metacognitive awareness, as assessed by the MACAM, plays an important role in the development of depression, in depressive relapse, and in treatment response to both cognitive therapy and mindfulness-based cognitive therapy. Although this measure appears to be a promising research tool in the assessment of the decentering facet of mindfulness, several limitations (e.g., limited structure, retrospective bias) suggest that further efforts to develop similar innovative assessment instruments are warranted.

Assessment of Acceptance

Acceptance and Action Questionnaire. The Acceptance and Action Questionnaire (AAQ; S. C. Hayes, Strosahl, et al., 2004) is a 9-item measure that attempts to assess the construct of "experiential avoidance," or attempts to avoid or control aversive internal experiences such as distressing thoughts or feelings (S. C. Hayes et al., 1996). Although the measure directly assesses phenomena such as the tendency to control or avoid distressing internal stimuli, to experience excessive fusion with or negative evaluation of internal stimuli, or to feel unable to act intentionally while experiencing distressing private events, it is included here as an indirect measure of acceptance—a measure of what acceptance/mindfulness are not.

The final 9-item scale assesses a single factor of experiential avoidance. Internal consistency was adequate (Cronbach's alpha = .70) for this scale. Test-retest reliability in an undergraduate population over a 4-month period was .64. The AAQ is significantly correlated with a number of scales that measure types of coping that may be conceptualized as avoidant, including thought suppression, self-deceptive positivity, thought control, and avoidance coping. Although these correlations were significant, they were not particularly strong (most under $r = .04$); the authors note that the AAQ likely measures unique aspects of broad tendencies to experientially avoid (such as wanting to remove painful life experiences), whereas these measures tap-specific forms of avoidance. The AAQ is also significantly related in the expected directions to general psychopathology, physical symptoms, depression, anxiety, work-related stress and well-being, quality of life and life satisfaction, and self-reported posttraumatic symptomatology.

Although the 9-item AAQ represents a first attempt to create a reliable research tool to explore the construct of experiential avoidance, the authors caution that further iterations of this measure are needed; many of the items may seem too complex for individuals not exposed to these constructs, and the low internal consistency of the measure suggests that a multidimensional approach to measurement of experiential avoidance may be warranted (S. C. Hayes, Strosahl, et al., 2004). The development of a second version of the AAQ addressing some of these concerns is currently underway (F. G. Bond, personal communication, June 15, 2004).

Self Compassion Scale. The Self Compassion Scale (SCS; Neff, 2003a) is a 26-item questionnaire designed to measure the three components of Neff's definition of self-compassion:

> (1) extending kindness and understanding to oneself rather than harsh self-criticism and judgment; (2) seeing one's experiences as part of the larger human experience rather than as separating and isolating; and (3) holding one's painful thoughts and feelings in balanced awareness rather than over-identifying with them." (Neff, 2003a, p. 224)

Participants rate SCS items representing six subscales: self-kindness, self-judgment, common humanity, isolation, mindfulness (e.g., items about keeping things in perspective in the face of failure), and overidentification on a 5-point Likert-type scale (1 = *almost never*, 5 = *almost always*) where higher scores suggest greater self-compassion. Internal consistency for the full scale was excellent (Cronbach's alpa = .92). The SCS is negatively correlated with self-criticism, and positively correlated with social connectedness and attention to, clarity of, and ability to repair emotional states. This scale also predicts mental health outcomes such as self-reported depression and anxiety, life satisfaction, and neurotic perfectionism. Although the SCS is not a measure of acceptance per se, it is included here because it seems to tap inherent components of both mindfulness and acceptance.

Chronic Pain Acceptance Questionnnaire. The Chronic Pain Acceptance Questionnaire (CPAQ; Geiser, 1992, as cited in McCracken, 1998) is a 34-item measure of acceptance of pain. Several studies have provided evidence for the internal consistency and validity of this questionnaire as a measure of pain acceptance (see McCracken, 1998; McCracken & Eccleston, 2003). In analyzing the factor structure of the CPAQ, McCracken (1998) found three components of acceptance, including the ability to engage in normal life activities; recognizing that pain may not change; and not needing to avoid or control pain. These facets may be viewed with regard to how they fit within S. C. Hayes' (1994) continuum of acceptance, as discussed above. For example, the latter two components may correspond with S. C. Hayes' notion of "abandonment of the change agenda" in some

situations, whereas the first, the ability to engage in normal life activities, bears some similarity to emotional/social willingness.

Measures of Emotion Regulation/Responding

Various conceptualizations of emotion regulation are differentially compatible with our discussion of acceptance. Most extant measures of this construct (e.g., Catanzaro & Mearns', 1990, Generalized Expectancy for Negative Mood Regulation; Gross & John's, 2003, Emotion Regulation Questionnaire) focus on the presence of behaviors that function to alter or change negative emotional states while maintaining positive ones. Speaking of operationalizations of this sort, Blackledge and Hayes (2001) note that the need to regulate emotion implies an unwillingness to have certain internal experiences. Thus, these measures of emotion regulation may actually assess forms of experiential control versus acceptance. The mood repair subscale of the Trait Meta-Mood Scale (TMMS; Salovey, Mayer, Goldman, Turvey, & Palfai, 1995) may also be considered a measure of this form of emotion regulation (however, the other TMMS subscales, attention to feelings and clarity of feelings, may capture processes more consistent with mindfulness and acceptance).

Newer conceptualizations of emotion regulation (e.g., Gratz & Roemer, 2004) emphasize the function of emotion. As such, the ability to experience an emotion without secondary emotional responses (e.g., guilt, shame) is viewed as adaptive and contributing to greater emotion regulation. These researchers developed the Difficulties in Emotion Regulation Scale (DERS), a 36-item measure that assesses deficits in six aspects of emotion regulation (i.e., nonacceptance of emotions, inability to engage in goal-directed behavior when distressed, poor impulse control, nonawareness of emotions, limited access to strategies for regulation, and poor clarity of emotions). Initial studies support the reliability and convergent validity of this measure (Gratz & Roemer, 2004). Many of the constructs captured by the measure overlap with those addressed in this chapter. For example, the emotional nonawareness and poor clarity subscales may capture elements of the experience of mindlessness of emotions, whereas the nonacceptance and goals factors may tap negative evaluation and inability to engage in valued action.

Similarly, the Anxiety Sensitivity Index (ASI; Peterson & Reiss, 1992; also see Taylor & Cox, 1998, for an expanded version) and the Affective Control Scale (ACS; Williams, Chambless, & Ahrens, 1997) assess "fear of fear" and "fear of emotions" (i.e., anger, depression, and positive emotions, as well as anxiety), respectively. More specifically, these instruments measure fear of losing control over the experience of these emotions and/or

one's reactions to them. Anxiety sensitivity and fear of emotions more generally are thought to stem from beliefs about the harmful consequences of emotional reactions and have been associated with avoidance and/or escape of negatively evaluated private experiences (e.g., Stewart, Samoluk, & MacDonald, 1999). These constructs may be conceptualized as capturing, at least in part, the nonacceptance of anxiety and/or broader emotional experiences.

Assessment at the Overt Behavioral Level

Researchers are also beginning to examine the processes of mindfulness and/or acceptance at the overt behavioral level. For example, Bishop et al. (2004) offer several innovative suggestions for examining processes of attention (e.g., sustained attention; flexibility in attention/shifting) that they consider inherent in mindfulness (also see Valentine & Sweet, 1999). Salters and Roemer (2003) recently examined the impact of various preparations on individuals' sensitivity to environmental contingencies (as opposed to rule-governed behavior) with the Wisconsin Card Sorting Test (Heaton, 1981) and contingency learning paradigms (e.g., S. C. Hayes, Brownstein, Haas, & Greenway, 1986). Such measures may be particularly useful for capturing the present-moment awareness facet of mindfulness. As a present-moment focus is inherent in Langer's conceptualization of mindfulness (i.e., "actively drawing these distinctions keeps us situated in the present," Langer & Moldoveanu, 2000, p. 2), tasks that her research group have used to measure mindfulness (e.g., Langer, 1989; Langer & Moldoveanu, 2000; also see Sternberg, 2000) might also be of value in the assessment of this facet.

Others have examined overt behavioral outcomes in the context of experimental studies that also examine physiological and/or subjective components of emotional reactions. These studies utilized various challenge tasks, including CO_2 inhalation trials (Eifert & Heffner, 2003; Levitt, Brown, Orsillo, & Barlow, 2004), emotionally evocative film clips (Block-Lerner, Plumb, & Orsillo, 2003; Campbell-Sills, Barlow, Brown, & Hoffman, 2004; Tull, Jakupcak, & Roemer, 2005), and a cold pressor task (e.g., S. C. Hayes, Bissett, et al., 1999). Participants are typically given instructions to face these stimuli in a certain way, based on a rationale for that particular strategy. Although it is challenging to come up with tasks that provide an opportunity for values-driven action in the laboratory, assessment of participants' willingness to engage in stressful tasks in the future may be construed as assessing social/emotional willingness (S. C. Hayes, 1994), psychological flexibility (e.g., S. C. Hayes & Shenk, 2004; Wilson & Murrell, 2004), or a more general approach orientation to experience.

CONCLUSION

From the perspective of behavioral assessment, a response to any assessment method is considered a sample of behavior (under a specific set of contingencies) as opposed to a sign of an underlying trait or disposition (Barrios & Hartmann, 1986; Nelson & Hayes, 1986; also see Street, 1994). In order to fully understand a process, it is thus useful to obtain samples of different domains of behavior under various sets of contingencies (i.e., utilizing a variety of modes of assessment). Continuing to develop and validate measures of each domain and examining how they fit together, while continuing to examine our assumptions and acknowledge the potential value of other "ways of knowing," would seem to offer the most useful set of windows into the processes of mindfulness and experiential acceptance. Glimpses into these windows may ultimately not only allow us to witness the process of "meeting them at the door laughing," but more importantly, to use this knowledge to address our most salient research questions. Shedding light on such questions (e.g., related to active ingredients and mechanisms of action of our interventions) has significant implications for the alleviation of human suffering and maximization of human potential.

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