Part I
Theoretical Foundation

Chapter 1
Operationalization of Mindfulness

Therapeutic progress depends upon awareness;
in fact the attempt to become more conscious is the therapy.
Edward Whitmont

Definition of MiCBT

As a mental state, mindfulness is experienced as a heightened sensory awareness of the present moment, free from judgment, reactivity and identification to the experience. As a training, mindfulness requires deliberate sustained attentional focus on sensory processes with unconditional acceptance of the sensory experience. Mindfulness-integrated Cognitive Behavior Therapy (MiCBT) is a systemic therapy approach that integrates mindfulness meditation with core elements of cognitive and behavioral methods for the purpose of teaching clients to internalize attention in order to regulate emotion and attention, and externalize these skills to the contexts in which their impairment is triggered or maintained.

The 4-stage model of delivery

This integration can be applied flexibly within a 4-stage model.

Personal stage
In stage 1, Mindfulness meditation training is taught to internalize attention in a way that promotes deep levels of experiential awareness and acceptance. The

Mindfulness-integrated CBT: Principles and Practice, First Edition. Bruno A. Cayoun.

emphasis is on the internal context of experience to equip clients with an increased sense of self-control and self-efficacy in handling thoughts and emotions before addressing daily stressors. We learn to regulate attention and emotions.

Exposure stage
Stage 2 is the first externalizing stage. It introduces various exposure procedures, first in imagery and then *in vivo*, to decrease avoidance and increase self-confidence. We learn to decrease reactivity to external situations.

Interpersonal stage
Stage 3 requires externalizing attention further towards others by decentering attention from self to others. It includes mindfulness-based interpersonal skills to understand experientially others' ways of communicating, combined with assertiveness and other social skills training to address the interpersonal context of psychological difficulties and help prevent relapse. We learn to prevent our reaction to others' reactivity.

Empathic stage
Stage 4 teaches empathic skills grounded in the bodily experience of the present moment. It includes developing ethical awareness and action, self-compassion and compassion towards others in a way that acts as a counter-conditioning method and helps prevent relapse. We learn to feel connected to ourselves and to others.

Case Illustration with Generalized Anxiety Disorder

Before diving into the science and theoretical aspects of MiCBT, looking at clients' impression might be of interest. The example below is a good reflection of how most clients perceive the program. There are ten other cases discussed in Chapter 10, where people (ex-clients of the author) express their views and transformations.

"Jo," a physically active middle-aged lady, was severely anxious about receiving the confirmation of her physical condition. Assessments from several specialists pointed to a diagnosis of Multiple Sclerosis, but they needed to perform further tests. It seemed to her that they were waiting to see some aggravations before being able to ascertain the diagnosis. She had been a worrier for most of her life and had been experiencing clinical levels of generalized anxiety for over twenty five years. Her mood had been mildly depressed for several years, and became clinically low since the tentative diagnosis was made, about nine months prior to our first meeting. In addition to the unappealing prospect of such a severe illness, living in future uncertainty had become excruciating. Catastrophic thoughts about the future had taken over most of her waking hours. Her GP referred her for symptoms of anxiety and depression. Fortunately, her partner was very warm and supportive. The MiCBT intervention included nine sessions, after which we both felt confident that she would be able to withstand the uncertainty and the final diagnosis, and ultimately, prevent relapse.

Following an intake assessment, we discussed a "therapy contract" (see Chapter 12) and the four main delivery steps of the MiCBT program (also in Chapter 12). She benefited from practicing Progressive Muscle Relaxation in the first week, which helped reschedule her day to include a thirty-minute practice of mindfulness meditation twice daily in the forthcoming weeks (see Chapters 3 to 6). Stage 2 (see Chapter 7) started on the fourth week, Stage 3 (see Chapter 8) on the sixth week, and Stage 4 (see Chapter 9) started on the seventh week. The ninth week was a follow-up session. Below is a letter which she wrote to express her experience.

> Seeking help from a psychologist wasn't something I'd ever considered. After all, I didn't really need to – did I? A few years ago I knew that, for apparently no particular reason, I was feeling a bit down. My relationship was solid, my home life was good, I knew that the conditions of my life were, comparatively, excellent. Of course, there were always ups and downs with work, as with the rest of life. Generally, however, I couldn't complain.
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> Nearly 12 months ago I began having a health related issue which potentially may develop into a debilitating condition. I love being active – bike riding, surfing and bushwalking. I own a farm and breed horses. Not being able to do all these things, the things I love doing, was not part of my future life plan! I found it really hard to move my mind away from thoughts about the future – thoughts that were almost invariably negative. My moods were becoming increasingly dark as these thoughts occupied my mind, more and more. I know my partner was worried about my mental state. She had suggested seeing someone to try and work out some strategies to help a number of times. However, I've never been comfortable with the idea of 'airing the laundry' to a complete stranger, preferring instead to try and work things out myself.
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> Consequently it was some time before I agreed to see someone – a psychologist recommended by a personal friend. I was seeking some ideas, some things I could 'do' to be able to help myself break free of the dark cloud. After the third session of talk, a couple of relaxation CDs and a month of a 'snap out of it' rubber band strategy, nothing was really changing. I can, however, thank this person for referring me on to Dr Cayoun, suggesting that his MiCBT program could provide some answers for me.
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> I have worked with Dr Cayoun for nearly 3 months. So what has changed? Quite a lot really – everything from my daily routine to the way I perceive each minute of each day. Twice daily I spend at least half an hour learning about my mind, my body, sensations, emotions, feelings and the inter-relationships between each of these. As I began training with basic relaxation and breath mediation exercises I realized my mind was totally in control of my sensations. I was constantly fighting to keep random (usually negative) streams of thought from dominating my mindspace and I was living in the future and not for the present. Further into body scanning methods, I have been learning more and more about the connection between thoughts and body sensations, but importantly, living more in the present moment.
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> So, what does this mean for me? Even though the concerns about my health remain, my emotions do not dominate my life as they did previously. I can enjoy what I have now as I am more observant and aware of all my experiences, all my body sensations. I am able to see situations with increased clarity – like the dusting settling after the road train has passed! I have learnt to recognize destructive thought patterns early – early enough to control my reactions to body sensations that accompany them and halt the emotional dip that usually follows. This increased level of equanimity has

benefitted all areas of my life. At work I can focus more easily and am more patient with people who I previously found it difficult to work with. At home my ever supportive partner says that I'm more positive and easier to get along with. I have upped my exercise regime as I live in the moment and enjoy my life as it is at present, even making plans for the future – something I haven't been able to do for some time.

Whatever happens in the future, I know that Dr Cayoun's program will continue to be an important part of my life.

Western Understanding of Eastern Conceptualization

The formal establishment of mindfulness (*Satipatthana)* has been traditionally initiated through a meditation technique called *Vipassana*, meaning "seeing objectively" or "Insight," which is said to facilitate the shift of personality (Doshi, 1989; Fleischman, 1989). Elements of vipassana meditation, re-branded as "mindfulness," have entered the field of cognitive-behavioral psychology in various ways (Solomon, 2006). In part, this is because both traditions present important overlapping features and are complementary in several ways.

Relationship between mindfulness and modern Learning Theory

In many ways, mindfulness is a state of heightened awareness of natural laws. As such, developing mindfulness has been traditionally conceptualized as the highest standard of studying ecology. For instance, when we are able to sit still and merely witness internal passing events (thoughts and body sensations) we witness the law of impermanence within.

In effect, we have been using the law of impermanence for almost a century in conditioning research, and later in behavior therapy. The change over time that we observe when, for example, a learned behavior is decreased, is called an "extinction" phenomenon. The practice of CBT relies heavily on reinforcement and extinction principles, from the behavioral analysis stage to the planning and implementation of treatment. We will briefly discuss some of these principles later, although the scope of this book does not permit an elaborate discussion of the traditional views of the ways in which human behavior is modified (see Corsini and Wedding, 2005, for a useful summary).

The traditional teaching of mindfulness includes an awareness of the power of reinforcement that comes from grasping at attachments and abhorrence with aversions. Learned behaviors, thoughts and emotions are thought to lose their strength when they are not reacted to (Goenka, 1987); a principle known as 'extinction' in Western behavioral science. Whereas Western Psychology has termed and investigated reinforcement and extinction principles for about a century, Eastern conceptualizations of behavior have included a sequence of mental events called the Law of Causation for well over twenty-five centuries. In these conceptualizations, inte-

roception (i.e., the ability to feel body sensations) has prime importance in either strengthening or eradicating behavior (Solé-Leris, 1992; see also Woodward, 1939, for an accurate translation).

Hence, the notions of reinforcement and extinction were not only well understood twenty-five centuries ago, they were also used as a means of self-acceptance and psychological change to decrease human suffering.

Mindfulness of human suffering

Mindfulness, as originally conceptualized in Theravada Buddhism, must serve to realize three central human conditions, one of which (Selflessness) will be discussed in more detail later. These are (a) the changing nature of all things, (b) the consequent substancelessness of the self ("Egolessness" or "Selflessness"), and (c) the suffering that springs from a lack of awareness of the impermanent nature of all phenomena, including the self and its aggregate components (Genther and Kawamura, 1975). From this perspective, being mindful facilitates this realization in all encountered internal and external events, knowing (not just thinking or hoping) that "this will also change." Thus, as mentioned in the introduction of this book, the traditional conceptualization of mindfulness involves an increased ability to remain aware of a natural law, impermanence (i.e., the omnipresence of continuous and uncontrollable change), and its consequences in daily living (see Marlatt, 2002; Marlatt, Witkiewitz, Dillworth *et al.,* 2004; for applications to treatment of addictive behavior). What is meant by "mindfulness" throughout this volume is precisely what this long-established tradition encompasses.

Paul Fleischman, a Psychiatrist and experienced mindfulness teacher in Northern America, pointed out that "Vipassana is a training in psychological culture" (Fleischman, 1999, p. 63). In terms of Kelly's (1955) constructivist view of personality, undergoing traditional mindfulness-based training involves testing the hypothesis that all thoughts and physical sensations have the same characteristics of arising and passing away. By experiencing this law of perpetual change within ourselves, we learn to alter the self-construct by being a more objective, scientific observer producing more accurate analyses of ongoing events and making predictions that are more sensible and realistic, thus enhancing the sense of control over our life.

Attention regulation training

Yi-Yuan Tang, Michael Posner, and other experts of attention research have argued that mindfulness practice requires the recruitment of numerous brain networks that enable important functions of our attention systems. When we pay attention to our breath, for example, we teach ourselves three crucial attentional skills that are very familiar to attention researchers and clinicians working with attentional disorders (e.g., Cayoun, 2010; Tang *et al.,* 2007). These are known as *sustained attention*,

response inhibition and *attention shifting*. Observation and measurement of these three functions of attention are well established in the research literature, as reflected by the numerous tests of the so-called *executive functions*, which will be briefly discussed later, as they relate to mindfulness meditation skills.

Sustained attention
First we train ourselves to sustain attention to a target, our natural, non-controlled breath (a script is provided in Appendix A). While we do our best to remain vigilant of our breath, we also learn to detect thoughts and other unwanted stimuli intruding into our conscious awareness. This task helps improve our vigilance and focus in daily activities. It also helps improve our objectivity and detachment. It is only when we can perceive a thought or body sensation arising in its own right that we can learn not to get lost in it, not to identify with it. We learn to differentiate our internal experiences from the sense of self.

Response inhibition
As soon as we realize that a thought or body sensation has emerged in conscious awareness, we endeavor not to react to it in any way, whether mentally by producing a value judgment or otherwise. We "inhibit" our otherwise automatic reaction. This task leads to a progressive sense of being an agent of self-control and helps us learn to accept or tolerate the presence of unpleasant experiences and the absence of pleasant ones.

Response re-engagement
We learn not to grasp and "cling" to thoughts, which allows us to switch and reallocate attention to the intended target, in this case our breath. This is one of the most difficult attentional skills because it relies on both sustained attention and response inhibition. Research into the aetiology and maintenance of Attention Deficit Hyperactivity Disorder shows that people who are accurately diagnosed with this condition have some response inhibition deficits in some contexts and are most impaired in response re-engagement (e.g., Cayoun, 2010). Our ability to switch attention back to the experience of breathing or to other body sensations when a thought has emerged results in greater cognitive flexibility, which helps us "let go" of all sorts of unhelpful thoughts and emotions.

A few years ago, a team of North American and Canadian researchers met in an effort to produce an operational definition of mindfulness so that the mindfulness construct can be scientifically and efficiently measured (Bishop *et al.*, 2004). Their conceptualization integrates (and is not limited to) these three functions of attention in a manner very similar to that mentioned above, with minor differences. Scott Bishop and his colleagues have termed this aspect of mindfulness training "attention regulation," which effectively reflects the consequence of improving our ability to use these three skills simultaneously. Attention regulation, added to a non-judgmental and accepting attitude towards our *whole* experience, allows us to adopt

a specific attitude called "equanimity." As briefly discussed below and more in detail in the next chapter, equanimity is considered a core mechanism in the process of extinguishment of both implicit and explicit learned responses.

Equanimity: a core mechanism

The term "equanimity" loosely means balance, equipoise, composure, calmness, level-headedness, equilibrium and self-control. In the *Abhidhamma* (texts regrouping the Buddhist psychological system), it is referred to as "a mind which abides in the state of non-attachment, non-hatred, and non-deludedness coupled with assiduousness … Its function is not to provide occasions for emotional instability" (Pradhan, 1950, p. 6). It is the refusal to be caught in aversion or attachment (Taylor, 2010) and a "state of mind free from craving, aversion, ignorance" (Goenka, 1987, p.162). In the therapeutic context, equanimity may be defined as: *the conscious and deliberate act of being non-reactive towards an event experienced within the framework of one's body and thoughts as a result of non-judgmental observation*. This implies that unless we are aware of an actual (internal) experience, we cannot be equanimous towards it. Thus defined, equanimity is a state of experiential acceptance that relies on awareness of thoughts and somatic sensations.

Interestingly, about fifty years ago, Russian behavior scientists reported on the importance of what was termed "interoceptive conditioning" (e.g., Bykov, 1957; Razran, 1960, 1961; Voronin, 1962). These studies, according to Yates (1970, p. 416), "are of critical significance for behavior therapists." As will be discussed later in this and other chapters, interoceptive awareness and acceptance are central mechanisms in both mindfulness meditation traditionally taught in the Burmese tradition and in MiCBT, in which it is integrated.

In many ways, equanimity requires more objectivity about the event we are experiencing. The more able we are to be aware of thoughts and body sensations just as they are unfolding, the more equanimous we become. In that sense, we become more scientific about our own experiences. Our mind and body can be a little like our private laboratory, where our observations are significantly closer to scientific assessments than our usual judgmental evaluations. Hence, some researchers and teachers of mindfulness have argued that mindfulness meditation is a science.

Neuroanatomically, it is proposed that equanimity relies on inhibitory neural networks in the temporal regions (inhibition of verbal responses in auditory cortex), right-prefrontal and limbic regions (inhibition of behavioral responses in emotional pathways, especially amygdala), and excitatory networks in the parietal regions (facilitation of neuroplasticity in somatosensory networks). Equanimity also seems to be associated with secretion of endorphins, whereas reactivity is related to secretion of adrenaline and cortisol. Equanimity is tied to activation of the parasympathetic nervous system and increased immune response (Davidson, Kabat-Zinn, Schumacher *et al.*, 2003; Tang *et al.,* 2007; Fan *et al.,* 2010).

Overview of basic practice components

During formal training (i.e., sitting meditation), we learn to see a thought for what it is, just a thought, no matter what its content may be. Though content is acknowledged, we learn not to cling to it, give it importance, identify with it, or react to it. We learn to perceive an emerging thought more objectively as an arising and passing mental event. As such, the thought cannot truly affect us, the observer. The benefits gained through this process are obvious for depressed and anxious individuals, whose capacity to prevent ruminations are almost immediate (e.g., Ramel *et al.*, 2004).

We learn to identify when and for how long the mind has wandered in thoughts. In doing so, we progressively develop an awareness of our ongoing thoughts as they manifest themselves in consciousness. This skill has been termed "metacognitive insight," which is another important skill that helps address depression and anxiety symptoms (Teasdale, 1999).

We also learn to perceive a body sensation merely as a body sensation, regardless of its hedonic qualities (pleasant, unpleasant, or neutral). We train to remain as objective as possible and observe the transient characteristics of body sensations, how quickly or slowly they change, whether they are intense or feeble, acceptable or unacceptable. Often with stupefaction, we discover that, much like thoughts, body sensations arise and pass away and they are essentially impersonal phenomena.

Developing this kind of detachment has several advantages. For instance, consider hyperarousal-based disorders (e.g., panic, post-traumatic stress disorder [PTSD], impulse control disorder, etc), or even chronic pain. What would happen to your client with these kinds of symptoms if he or she could train to experience their intrusive thoughts and accompanying body states with more objectivity and acceptance, and "let them go"?

Changes in Western Clinical Psychology

In the last decade and a half, there has been a significant shift in our conceptualization of human cognitive and emotional processing. For example, John Teasdale and his colleagues led the way by claiming that emotions are produced by patterns of sensorily-derived information and are maintained by self-perpetuating mechanisms via feedback loops (Teasdale *et al.*, 1995). Teasdale and Barnard's (1993) Interacting Cognitive Subsystems (ICS) model of information processing integrates the various ways of human cognition and emotion with an ecological notion of self-organized systems. The ICS approach also emphasizes experiential aspects of cognition which have been insufficiently taken into account to explain how reinforcement is actually experienced.

Others have also widened the net of possible reinforcing factors in their view of learning principles. For instance, modern learning theory acknowledges that cogni-

tive and other internal experiences can be involved in learning. Bouton, Mineka, and Barlow's (2001) comprehensive review of basic conditioning research in relation to panic underscores these involvements. The authors propose that Panic Disorder develops because exposure to panic attacks causes the conditioning of anxiety to cues outside the person as well as cues experienced in the body. In line with the model presented here, Bouton *et al*., (2001) conceive that this process fundamentally involves emotional learning that is best explained by conditioning principles.

Moreover, Stephen Hayes and his colleagues proposed a "post Skinnerian" account of learning, through their Relational Frame Theory (RFT). This approach proposes that human language and the use of it to communicate or make sense of the world requires deriving relations among events, highlighting the important role of human language and cognition in human learning, see Hayes, Barnes-Holmes, and Roche (2001) for detailed account.

Current status in Western psychotherapy

It has been proposed that mindfulness is a common factor across various therapeutic orientations (Martin, 1997). The basis for this view is that the development of mindfulness promotes access to new perspectives and the disengagement from habitual response sets, including automatic thoughts and behaviors (Langer, 1989, 1992; Roemer, and Orsillo, 2002; Teasdale *et al*., 1995; Wells, 2002).

By itself, mindfulness training can provide us with opportunities to review our beliefs since we train daily not to buy into our thoughts. It allows us to challenge our own established views about ourselves, others, our values, our future, as well as the external world (Kabat-Zinn, 1982, 1990), without necessarily reviewing the deep-routed belief systems that we began to establish in childhood (our "schemas") or involving exposure to specific triggers as implemented in traditional cognitive-behavioral approaches (e.g., Beck, 1976; Mahoney, 1974; Meichenbaum; 1977). Accordingly, it is understandable that some authors have expressed reservations regarding what exactly are the active ingredients in mindfulness training (e.g., McLaren, 2006; Pridmore, 2006).

Some authors indicated the lack of adequate control in several studies of mindfulness training, as taught in MBSR, for depression and anxiety disorders (Toneatto and Nguyen, 2007) and questioned the construct of mindfulness, the effectiveness of such programs, the mechanisms of action, and the methodology used for treatment outcome studies (Bishop, 2002). The recent proliferation of publications has clarified some of these questions (e.g., Allen, Chambers, Knight, and Melbourne Academic Mindfulness Interest Group, 2006), but the active mechanisms of mindfulness seem to remain unclear (Kostanski and Hassed, 2008).

During her research at the University of Canterbury, examining the effects of MiCBT on the health behavior of diabetes sufferers, Melanie Lindsay (2007) noted the following:

> Within the context of Western psychology, mindfulness research for physical and psychological health is a fledgling field. The variety of ways in which mindfulness has been conceptualized reflects the lack of theoretical consensus (Bishop *et al*., 2004) and much of the research on mindfulness highlights the problematic process of capturing a definition of mindfulness (Baer, 2003; Brown and Ryan, 2003). There is potential for confusion in the use of the word mindfulness (Hayes and Wilson, 2003) because mindfulness may be described as a group of behaviours and represent an outcome (Baer, Smith, and Allen, 2004; Feldman, Hayes, Kumar, and Greeson, 2004), a practice (Thera, 1969), a therapeutic process (Germer, 2005), a technology (Hayes and Shenk, 2004; Linehan, 1993), a state and a trait (Bishop *et al*., 2004; Siegel, 2009a).

The following chapter attempts to address some of these questions using a model of reinforcement that does not rely on Cartesian dualism, by which the endorsement of a dichotomy of mind and matter has dominated Western Psychology for over a century. Rather, it proposes that mind and body cannot be separated during an experience. It is an integrative approach to behavior maintenance and change that rests on a neuro-behavioral model reinforcement.

Summary of Main Points

- Mindfulness practice requires the development of cognitive and behavioral skills, including sustained sensory awareness, and unconditional experiential acceptance and response prevention; traditionally summarized by the term "equanimity."
- MiCBT is a four-stage therapy model that integrates mindfulness meditation with core elements of cognitive and behavioral methods into a systemic approach to teach clients to regulate emotion and attention, and to externalize these skills to the contexts in which their impairment is triggered or maintained.
- There is a strong overlap between mindfulness principles and modern Learning Theory, both of which recognize the importance of reinforcement for the maintenance, enhancement and extinguishment of habitual reactions to stressors.
- In agreement with the traditional principles for the establishment of mindfulness in the East (*Satipattana*), the MiCBT therapy system proposes that equanimity is the principal mechanism of action for the transformative effect of mindfulness meditation. Other mechanisms of action include sustained attention, response inhibition to intrusive thoughts, response re-engagement (attention shifting), and non-identification with the experience.
- In the last fifteen years, there have been significant changes in the Western understanding of human cognitive and emotional processing. The notion of Cartesian Dualism has given way to the concept of embodied cognition, where mind and body cannot be separated during an experience. Numerous health clinicians have successfully used mindfulness training to address the experiential aspect of their patients' conditions.