The Wiley Blackwell Handbook of Mindfulness

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Volume I

Edited by

Amanda Ie
Christelle T. Ngnoumen
Ellen J. Langer

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Contents

Notes on Editors ix

Notes on Contributors xi

General Introduction xxxi

Part I Origins and Theory **1**

1 Mindfulness Forward and Back 7
Ellen J. Langer

2 Thriving With Uncertainty: Opening the Mind and Cultivating Inner Well-Being Through Contemplative and Creative Mindfulness 21
Daniel J. Siegel and Madeleine W. Siegel

3 Eastern and Western Approaches to Mindfulness: Similarities, Differences, and Clinical Implications 48
James Carmody

4 From Early Buddhist Traditions to Western Psychological Science 58
Andrew Olendzki

5 Mindfulness Meditation from the Eastern Inner Science Tradition 74
Carin Muhr and Lene Handberg

6 Exemplifying a Shift of Paradigm: Exploring the Psychology of Possibility and Embracing the Instability of Knowing 115
Sayyed Mohsen Fatemi

7 Art of Mindfulness: Integrating Eastern and Western Approaches 139
Maja Djikic

Part II Consciousness, Cognition, and Emotion **149**

8 Mindfulness: An Antidote for Wandering Minds 153
Michael D. Mrazek, James M. Broadway, Dawa T. Phillips, Michael S. Franklin, Benjamin W. Mooneyham, and Jonathan W. Schooler

9 Mindfulness: Deautomatization of Cognitive and Emotional Life 168
Yoona Kang, June Gruber, and Jeremy R. Gray

10 Toward a Mindful–Unmindful Cognitive Style: Lessons from the Study of Field Dependence–Independence 186
Jack Demick

11 The Motivated and Mindful Perceiver: Relationships Among Motivated Perception, Mindfulness, and Self-Regulation 200
Emily Balcetis, Shana Cole, and Sana Sherali

12 Mindfulness, Interest-Taking, and Self-Regulation: A Self-Determination Theory Perspective on the Role of Awareness in Optimal Functioning 216
C. Scott Rigby, Patricia P. Schultz, and Richard M. Ryan

13 Mindful Mindlessness in Goal Pursuit 236
Ana P. Gantman, Peter M. Gollwitzer, and Gabriele Oettingen

14 Mindful Versus Mindless Thinking and Persuasion 258
Andrew Luttrell, Pablo Briñol, and Richard E. Petty

15 Mindfulness and Heuristics 279
Wray Herbert

16 I-D Compensation: Exploring the Relations Among Mindfulness, a Close Brush With Death, and Our Hunter-Gatherer Heritage 290
Leonard L. Martin, Matthew A. Sanders, Amey Kulkarni, Wyatt C. Anderson, and Whitney L. Heppner

17 Answering Questions: A Comparison of Survey Satisficing and Mindlessness 312
David L. Vannette and Jon A. Krosnick

18 The Impact of Mindfulness on Creativity Research and Creativity Enhancement 328
Shelley Carson

19 Mediating Mindful Social Interactions Through Design 345
Kristina Niedderer

20 On Being Mindful of Time 367
Stuart Albert

21 Mindfulness and the Neuroscience of Influence 387
Emily B. Falk

Part III Leadership and Organizational Behavior 405

22 Organizing for Mindfulness 407
Kathleen M. Sutcliffe and Timothy J. Vogus

23 Mindfulness and Organizational Defenses: Exploring Organizational and Institutional Challenges to Mindfulness 424
Silvia Jordan and Idar Alfred Johannessen

24 Mindful Leadership 443
James L. Ritchie-Dunham

25 Mindfulness at Work 458
Michael Pirson

26 Two (or More) Concepts of Mindfulness in Law and Conflict Resolution 471
Leonard L. Riskin

27 Mindfulness in Law 487
Scott L. Rogers

Contents

Notes on Editors ix

Notes on Contributors xi

General Introduction xxxi

Part IV Health, Well-Being, and Performance 527

28 Mindfulness: A Transtherapeutic Approach for Transdiagnostic Mental Processes 533
Jeffrey Greeson, Eric L. Garland, and David Black

29 Mindful Health and the Power of Possibility 563
Michael Hogan

30 What Will It Take for Physicians to Practice Mindfully? Promoting Quality of Care, Quality of Caring, Resilience, and Well-Being 584
Ronald M. Epstein

31 Mindfulness As/Is Care: Biopolitics, Narrative Empathy, and Technoscientific Practices 608
Alexander I. Stingl and Sabrina M. Weiss

32 Training the Mindful Health Practitioner: Why Attention Matters 630
Craig Hassed

33 Mindfulness, Trauma, and Trance: A Mindfulness-Based Psychotherapeutic Approach 649
Ronald A. Alexander and Elisha Goldstein

34 From Cushions to Couches, Shramanas to Shrinks: What Is Lost and What Is Gained When Mindfulness Becomes a Tool of Medicine and Psychotherapy 688
Jason Clower and Tracy Peng

50 Mindfulness-Based Mind Fitness Training: An Approach for Enhancing Performance and Building Resilience in High-Stress Contexts 964
Elizabeth A. Stanley

51 Mindfulness and Performance 986
Zella E. Moore and Frank L. Gardner

52 Mindfulness in Sport Performance 1004
Timothy R. Pineau, Carol R. Glass, and Keith A. Kaufman

Part V Education, Creativity, and Coaching 1035

53 Mindfulness in Schools: Where Are We and Where Might We Go Next? 1037
Katherine Weare

54 Mindfulness in Education 1054
Rolf Reber

55 Mindfulness With Youth: Sowing the Seeds of a Mindful Society 1071
Christopher Willard

56 East Meets West in the Pedagogy of the Mindfulness-Based Interventions 1085
Donald McCown

57 Inducing Mindfulness Through Life-Philosophical Lecturing 1105
Esa Saarinen and Tuuli Lehti

58 The Role of Mindfulness in Peace Education in the Context of Conflict 1132
Gavriel Salomon

Index 1143

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Peter M. Gollwitzer has developed various models of action control throughout his academic career: the Theory of Symbolic Self-Completion (with Robert A. Wicklund), the Rubicon Model of Action Phases (with Heinz Heckhausen), the Auto-Motive Model of Automatic Goal Striving (with John A. Bargh), the Mindset Model of Action Phases, and the Theory of Implementation Intentions. The latter theory explains how

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emotional processes through which individuals and workgroups enact highly reliable performance. More specifically, his research specifies the mechanisms through which collectives create and sustain a culture of safety as well as how they detect and correct errors and unexpected events through mindful organizing. He is especially interested in these dynamics in healthcare organizations. His research has been published in leading management and health-services outlets including *Academy of Management Review*, *Annual Review of Public Health*, *Journal of Organizational Behavior*, and *Medical Care*.

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General Introduction

There currently exist two dominant mindfulness camps. The Western camp involves social psychological approaches to mindfulness, as exemplified by the work of Ellen Langer. Langer's approach is sometimes referred to as "mindfulness without meditation." The nature of its practices is highly psychological, and very little to no emphasis is placed on meditation. The Western camp contrasts with more Eastern approaches to mindfulness, which are rooted in Buddhist philosophy and are more contemplative and based on meditation. A dominant branch of the Eastern camp is approaches to mindfulness that incorporate both psychological and meditative elements. These Eastern-derived models borrow forms of meditation from the Eastern camp and empirically apply them in Western settings. The Western and Eastern models propose different and unique theoretical principles, but they also share significant similarities. Most important, both approaches aim to cultivate a present-oriented mind, thereby permitting individuals to increase health and well-being. This handbook compares and contrasts Western and Eastern mindfulness camps with the aim of transforming their seemingly oppositional relationship into a complementary one. The chapters included in this handbook have been specifically selected because they adequately represent the ways in which mindfulness has been applied in various fields and settings, including medicine, mental health, education, organizations, and sports. Mindfulness has also proved to have a powerful influence on cognition, attitudes, and interpersonal relationships.

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Notes on Contributors

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of the time, he was called a "job applicant." Despite the fact that these were highly educated therapists trained to be careful observers of behavior who watched the very same video, the label primed the way the person would be seen. The "patient" was in need of therapy while the "job applicant" was fairly well adjusted. This work demonstrated the illusory correlation effect and the pervasiveness of mindlessness. Study after study would eventually show that people engage in hypothesis confirming data searches, ignoring all other information (Chapman & Chapman, 1967; Hamilton & Gifford, 1976).

Also in the 1970s, I proposed a theory about the illusion of control (Langer, 1975). These studies can be understood as priming studies as well. When elements of a skill situation, such as choice, stimulus familiarity, practice, and competition, are introduced into a chance situation, they prime a skill orientation, and thus people respond in a way more sensible to situations where their behavior can affect the outcome. Choosing a lottery ticket, for example, makes the ticket more valuable to people. An extension of this finding later became known as the endowment effect (Thaler, 1980), another much researched topic suggesting once again that mindlessness is pervasive.

Social psychologists were now starting to question whether phenomena like attitude formation/change were as had been previously understood or whether they were instantiations of mindlessness. For example, Shelley Chaiken (1980) distinguished between heuristic and systematic processing, and Cacioppo and Petty (1979) discussed central and peripheral processing, where heuristic and peripheral were essentially mindless. When the source of the message was seen as credible, when the way the argument was presented was reasonable (familiar), when the source was attractive, or when the message was given in a catchy slogan, mindlessness prevailed.

When information is given by an authority, seems irrelevant, or is given in absolute language, people take in the information without questioning it and become trapped by the substantive implications of that information in the future should that information become relevant and where a deeper understanding would be helpful (Chanowitz & Langer, 1981). I would submit that most of what we learn, we learn in this absolute way. Most of our education, indeed, is geared to the giving of absolute facts, irrespective of context, and thus promotes mindlessness. How often have we been told to learn something so well that it becomes second nature? This, too, is an instruction that promotes mindlessness. We learn how to do the task and now don't have to think about it when such thought could yield superior performance (see Langer, 1997).

The evidence that mindlessness is pervasive was mounting. Numerous studies showed that people respond passively to cues in the environment rather than actively make choices. For example, (1) affective priming asserts that affective reactions can be evoked with minimal stimulus input and virtually no cognitive processing (Zajonc, 1980); (2) intentions and goals can be activated nonconsciously by the environmental context (Bargh & Chartrand, 1999); (3) the chameleon effect (Chartrand & Bargh, 1999) demonstrates that people unwittingly mimic others so that their motor behavior unintentionally matches that of strangers with whom they worked together on a task; and (4) the vast literature on stereotyping shows that single cues like gender or race can overshadow an enormous amount of countervailing information and be

automatically activated (Blair & Banaji, 1996). Each of these and more speak to the mindlessness of everyday behavior.

In one study, for example, Bargh, Chen, and Burrows (1996) found that simply cuing old age led subjects to walk more slowly. In an extension of that work, we had people categorize photos by age, thereby priming old age for young subjects, or we had them categorize the same photos along several dimensions. This mindfulness treatment erased the mindless effect of priming (Djikic, Langer, & Stapleton, 2008).

Most recently we have studied the mindlessness that results from reliance on GPS systems. To do this, Jaewoo Chung and I (Chung & Langer, 2013) developed a mindful indoor navigation system that provides choice to users. Choice promotes mindfulness. It is through noticing differences among alternatives that one arrives at a decision. We found that the mindful GPS system increased perceived control; decreased travel time, errors, and confusion; and increased the number of landmarks noticed.

Even multitasking looks different through the mindlessness/mindfulness lens. The mindless use of so many electronic gadgets now available has been shown to result in decrements in performance. Nevertheless, we found that people with higher trait mindfulness scores on the Langer Mindfulness Scale (LMS; Langer, 2004) are better able to multitask (Ie, Haller, Langer, & Courvoisier, 2012).

From Mindlessness to Mindfulness

Some argue that there is a place for mindlessness. I believe mindlessness is reasonable only when two conditions are met: when we have found the very best way of doing something, and when nothing changes. Clearly, from Heisenberg forward we know that everything is always changing. I further have argued that not only is everything changing but also at any one time things look different from different perspectives. Most typically, we're unaware of subtle changes because we confuse the stability of our mindsets with the stability of the underlying phenomenon. By freezing our understanding, we forfeit the possibility of choosing to act differently. The counterargument is usually that mindfulness takes more time than mindlessness and is more effortful. I'm not sure that is so, but even if true, the difference is only milliseconds and rarely does that small time difference truly matter. In making this argument, someone once created the condition where a child is about to walk into oncoming traffic. The person thought that mindlessly pulling the child to safety would be best done mindlessly. I countered that if the adult had been mindful, the child wouldn't have gotten to the curb in the first place. Moreover, there may be some advantage in mindfully scanning the driver's behavior to see which way would actually be safest to take the child. When we are mindless, we give up the option to make that choice. To see mindfulness as being more effortful is to confuse it with controlled processing as discussed below.

My original research on mindlessness gave way to questions about the other side of the coin, mindfulness. My particular approach to mindfulness grew out of our early work on choice. In the illusion of control studies, it was clear that choice was important—so important that even in situations that were deemed chance-determined, choice mattered to people. The most telling study on the topic was the research Judith Rodin and I were to conduct with elderly nursing home adults

(Langer & Rodin, 1976; Rodin & Langer, 1977). The experimental group was given choices to make (e.g., a plant to take care of) and a pep talk encouraging them to make the choices they used to make when they were younger. To control for all of the content provided, comparison subjects were given tender loving care and were told the nurses would help them care for the plants. Our follow-up study revealed that twice as many people in the group given choices to make were still alive 18 months later, compared to the control group. What was it about making choices that produced such extreme effects?

To actively make a choice, we notice aspects of the alternatives. If these aspects are novel, we may be led to choose other than our habitual choice. To always select the same alternative may seem like a choice from the observer's perspective, but for the actor it may be a habitual response. As such, it requires very little from us and may seem almost a nonevent. If everyday I have orange juice without considering whether today I might prefer grapefruit juice, no choice is being made. To make a choice, there has to be a consideration of one or more of the options not taken. Thus, actively drawing novel distinctions was taken to be the crucial element of the nursing-home findings. To test this idea, we gave nursing-home residents instructions in mindful distinction drawing and replicated the longevity findings (Alexander, Langer, Newman, Chandler, & Davies, 1989; Langer, Beck, Janoff-Bulman, & Timko, 1984).

In one of these studies (Alexander et al., 1989) we compared mindful-noticing subjects and transcendental meditators to relaxation control subjects. The procedure was tailored to meditation (i.e., sitting still with one's eyes closed) so not the best way of testing mindfulness as we study it. Still, the results for the mindful-noticing group were clearly superior to the control group, as was the Transcendental Meditation treatment. Meditators and mindful-noticing subjects demonstrated improvements on measures of cognitive flexibility; paired associates learning; word fluency; mental health; systolic blood pressure; treatment efficacy; ratings of behavioral flexibility and perceived control; aging; and higher survival rate. The process of meditation helps loosen the grip of categories over us; meditation results in postmeditative mindfulness. Mindfully noticing different aspects of these categories similarly—and perhaps more directly—loosens their grip.

Over the last 40 years, in study after study, we increase novel distinction-drawing—mindfulness—and find significant improvements in psychological and physical functioning (see Langer, 1989, 1997, 2005, 2009, for reviews). It is not incompatible with meditation. It is a different way to get to essentially the same place. When we actively draw distinctions, we come to see that context and perspective matter, we see we didn't know it as well as we thought we did, and this uncertainty keeps our attention on the topic. We see that our evaluations change depending on the context, and thus we become less evaluative (e.g., rigid from one perspective is consistent from another). And all of these years of study suggest that mindfulness is literally and figuratively enlivening.

In a very different arena, we asked whether aspects of childbirth were mindless (Zilcha-Mano & Langer, 2013). In this instance, we operationalized mindfulness as attention to variability—the essence of which, again, is noticing novelty—to examine whether mindfulness would result in better health outcomes for mother and infant. At week 25–30 of pregnancy, participants were given instructions to attend to the

variability of their sensations (positive/negative). The LMS was used to assess trait mindfulness and to see its relationship with health outcomes (see Chapter 45). The mindfulness training resulted in better health for both mother and infant. In addition, trait mindfulness predicted the well-being of the expectant mother and better neonatal outcomes. Our newest work is aimed at testing the effects of attention to variability on disorders such as depression, multiple sclerosis, amyotrophic lateral sclerosis, and cancer.

There are numerous other findings regarding the LMS. Most recently, we found a strong correlation between the scale and measures of subjective well-being in participants in mainland China, replicating the work in the US. Indeed, in study after study, we've found that both trait and state mindfulness are strongly related to happiness.

Mindfulness: What It Is and What It Isn't

More formally, mindfulness is defined as an active state of mind characterized by novel distinction-drawing that results in being (1) situated in the present; (2) sensitive to context and perspective; and (3) guided (but not governed) by rules and routines. The phenomenological experience of mindfulness is the felt experience of engagement. Noticing/creating novelty reveals inherent uncertainty. When we recognize that we don't know the person, object, or situation as well as we thought we did, our attention naturally goes to the target. By attending to variability, the hallmark of mindfulness, eventually we stop confusing the stability of our mindsets with the stability of the underlying phenomena.

Mindlessness, by contrast, is defined as an inactive state of mind characterized by reliance on distinctions/categories drawn in the past. Here (1) the past overdetermines the present; (2) we are trapped in a single perspective but oblivious to that entrapment; (3) we're insensitive to context; and (4) rules and routines govern rather than guide our behavior. Moreover, mindlessness typically comes about by default not by design. When we accept information as if unconditionally true, we become trapped by the substantive implications of the information. Even if it is to our advantage in the future to question the information, if we mindlessly processed it, it will not occur to us to do so (Chanowitz & Langer, 1981). The same rigid relationship results from mindless repetition (Langer & Imber, 1979, 1980).

Because my work on mindfulness began during the "cognitive revolution," it was cast in cognitive terms. It was never meant to describe a cold cognitive process. Indeed, as the mind/body discussion below makes clear, the dualism distinction is questionable at best. Nevertheless, we recently set out to test the effects of mindfulness without meditation on our senses. Participants were given instructions and practice in noticing novelty regarding vision or touch. Relative to control groups, these participants showed enhanced functioning. That is, mindful instructions improved both vision and kinesthetic senses (Langer, Reece, & Rood, 2013).

The many health-related experiments we have conducted make clear that our mindfulness treatments result in better health and increased longevity (Langer, 2009). For medical conditions in general, there is a mindless illusion of stability, where people often implicitly expect their condition to either stay the same or get worse if it is

their theory. Not surprisingly, confirmation is found. Theory is supposed to be understood as possibility, but at least in the social sciences, it most often is taken as absolute fact leaving little experienced difference between laws and theories. These theories build upon each other with the result of a series of concatenated probabilities making it harder and harder to question the basic assumptions of the original proposition. Scientific evidence can only yield probabilities, but science in use takes these probabilities and converts them into absolutes.

Take medicine, for example. Many diseases are labeled chronic. Chronic is understood as uncontrollable. If something is understood to be uncontrollable, we would be foolish to try and control it. Yet no science can prove uncontrollability. All science can prove is that something is possible, or it is indeterminate. Indeterminate is very different from uncontrollable. Moreover, by generalizing the findings to the population because of methodological considerations like random assignment without due regard to the subject population actually used (e.g., all of those people who self heal are missing from the medical database), we are discouraged from trying to self heal. In any experiment, the researcher has to make many hidden decisions regarding the parameters of the study (e.g., who the subjects actually are, the time and circumstances in which they'll be tested, the amount of the independent variable to administer). With these dimensions out of mind, findings seem more stable than they might otherwise seem. Couple this with the mistaken tendency of people to seek certainty and confuse the stability of their mindsets with the stability of the underlying phenomena, and we end up with an illusion of knowing and unnecessary limits to what we might otherwise find out.

This illusory sense of knowing is pervasive, extending even to the point where we misconstrue the nature of our own mental processes. What are we actually doing when we hold a certain concept in our mind's eye? Picture a car, for example. Now, start taking away individual elements that seem essential to the "car-ness" of it all, and ask yourself if you'd still know it's a car. A car without wheels? Still a car. Minus a steering wheel, or a bumper or an engine? Still seen as a car (albeit perhaps not one you'd want as yours). A Jeep and a station wagon and a Smartcar all somehow fit into this same category of "car," despite their clear diversity in features and appearance. Wittgenstein (Mora, 1953) famously performed a similar dissection of conceptual categories, effectively demonstrating (in his case, with the concept of "game") the inherent illusion that our mental categories for things are actually based upon some identifiable set of core features. So, what is it that makes a car a car? Not much, as it turns out.

Recent findings in the field of cognitive neuropsychology have begun to indicate that this assertion—that conceptual categories lack inherent unifying features—is backed by more than just sound logic. Barsalou (2009) and Wilson-Mendenhall, Barrett, Simmons, and Barsalou (2011) have established that the brain doesn't actually use a set of core concepts to define mental categories of objects and phenomena. Rather, our thought processes remain in a perpetual state of collection, assessment, and reaction to incoming information. It is only at the point of higher-level cognitive processes that we begin to grow lazy and assume that all examples of cars have some inherent "car-ness" about them. (Or, for that matter, that all instances of fear, or anger, or pride, must necessarily be connected by some unifying element.) In

how enfeebled these men in their 80s were at the start of the study, both groups improved significantly from where they started. Hearing, vision, memory, and grip strength were significantly different after the week. The experimental group showed further improvement differing significantly from the comparison group with respect to manual dexterity; digit–symbol substitution scores (63% of the experimental group improved compared to 44% of the control group); height; gait; posture; joint flexibility; and diminished symptoms of arthritis. We photographed everyone before and after the week and found that all of the experimental participants looked noticeably younger at the end of the study.

In my view, it was the change in mindset, much the same way a placebo works, that accounted for the difference between the two groups. By priming a time when they were vital, their mindsets of old age as a time of debilitation became irrelevant. (Of course, over the week, many things could have varied that we couldn't possibly control in such an ambitious undertaking. We were, however, able to use tighter controls in more recent investigations.) Two things should be addressed regardless of the explanation for the findings one may choose. The first is the widespread belief that elders are not supposed to improve their hearing and vision—or indeed improve on any of the measures we took. Below I'll return to this in a discussion of science. The second issue to consider is that the idea of mind/body unity led to these findings, and thus at the least the theory serves a heuristic purpose.

Alia Crum and I (Crum and Langer, 2007) tested this mind/body hypothesis in a very different setting with chambermaids. We started by inquiring about how much exercise they thought they got in a typical week. Surprisingly, they thought they didn't get exercise, despite the fact that their work is exercise. Exercise, they thought, was what one did after work. If exercise is good for our health, and they get more than the surgeon general recommends, then we should expect that they would be healthier than socioeconomically equivalent others who do not exercise as much or as consistently. Interestingly, they were less healthy. While noteworthy, this was not the focus of the study. We randomly divided the participants into two groups and taught one group to change their mindset to view their work as exercise. We took as many measures as we could think of regarding food eaten in the course of the month between tests, exercise intensity at work, and exercise outside of work. We found no differences between the two groups on any of these measures. Nevertheless, the two groups significantly differed on measures of waist to hip ratio, weight loss, body mass index, and blood pressure. We attribute these improvements for the experimental group to the change in mindset.

We tested this mind/body hypothesis in another series of experiments (Langer, Djikic, Pirson, Madenci, & Donohue, 2010). Here we focused on vision. The standard Snellen eye chart has letters that get progressively smaller as one reads down the chart. Implicitly this creates the expectation that soon we will not be able to see. In one study, we reversed the eye chart so that the letters get progressively larger, thereby creating the mindset that soon we will be able to see. With the change in mindset, participants were able to see what they "couldn't" see before. With the standard eye chart, there is also an expectation that we will start to have difficultly around two-thirds of the way down the chart. Accordingly, we adapted the standard eye chart such that it began

a third of the way down the standard chart. Again, participants could see what they couldn't see before. In yet another study, we took advantage of the mindset that pilots have excellent vision. We had men don the clothes of air force pilots and fly a flight simulator. Control participants simulated flying the simulator. Vision improved for those embodying the mindset of pilot.

Finally, we wanted to see if we could condition improved vision (Pirson, Ie, & Langer, 2012). Participants in two experimental groups read a chapter of one of my books where the font of either the letter "a" or the letter "e" was much smaller than other letters (e.g., can, take, many) while participants in the control group read the chapter in a standard font size. Over time, those in the experimental groups would of course come to know what the smaller letter represented. After reading the chapter, participants' visual acuity was assessed. Regardless of the specific letter that was manipulated, results across three experiments showed that participants in the experimental groups scored higher on visual acuity than the control group, once again demonstrating the malleability of visual acuity.

Our accepted theories and mindsets tell us that vision is not supposed to improve. But from where do these mindsets come? We accept negative mindsets (e.g., vision will necessarily worsen over time) and we create theories of the eye to show why this must be. The expectation becomes self-fulfilling, further validating the original supposition. Yet with this simple understanding that our own minds create our seeming limitations, we may come to be more than alternative mind/body views currently enable.

Support for this view comes from recent work on embodied cognition. While our research has focused on measuring mind changes on the body, this work focuses on body changes affecting the mind. The idea is the same. Put the body in a particular position, and the entire individual is in that mode. For example, stand tall, and we become more confident (Carney, Cuddy, & Yap, 2010); think about the future or the past, and we lean forward or back (Miles, Nind, & Macrae, 2010); squeeze something soft/hard, and we perceive gender ambiguous faces as female/male (Slepian, Weisbuch, Rule, & Ambady, 2011).

As work on embodied cognition reveals, social psychologists are beginning to circumvent presumed limits that result from dualist thinking. I think the entire research enterprise would prosper from consideration that virtually all of our findings are only part of the picture. When, in a typical experiment, the researcher puts in some strong cue that people follow, yielding significant results, we might consider that our subjects do so mindlessly. As Helen Newman and I argued, the typical social psychological experiment might be an exercise in testing mindlessness. Those who do not give us what we expect are part of the variability. This variability, however, might be understood as mindful responses. In that study (Langer & Newman, 1979), we used the popular Kelley (1950) paradigm where participants were led to believe that the speaker they would soon hear was personally warm/cold. Those who confirmed the experimenter's hypothesis were reasonably oblivious to what was said.

Consider some of our field's most important research. Findings from research on "thin-slices" of behavior (Ambady & Rosenthal, 1993) may rely on mindlessness. If we were mindful, our tendency to make dispositional attributions might change since the situation would no longer be ignored, and so the effect might disappear. Similarly,

priming and the chameleon effect rely on mindlessness, so these findings would also look very different if mindfulness prevailed.

Conclusions

Is mindfulness more effortful? At least up to some point, mindfulness is energy begetting not consuming. Part of the reason people think of mindfulness as effortful is because it is confused with worry. It is not thinking novel thoughts about a problem that is effortful. It is worrying that the answer will be wrong that takes effort. In general, controlled processing is confused with mindfulness. Controlled processing is the operation of overlearned thought to a problem. Adding or multiplying numbers for example without regard to choosing different number systems on which to base one's answer is effortful. Moreover, play and enjoying humor are not effortful, and both rely on novelty. Recognizing that evaluations are in our minds and not in events leaves us less stressed and less reactive, both of which are energy consuming.

Because this work began with the cognitive revolution, it did not seem important then to stress that mindfulness—West or East—is not solely a cognitive process. Indeed, the idea of cognition as being separate from other ways of responding runs counter to my research but follows from mind/body dualism.

Just as psychologists are becoming increasingly aware of mind/body unity and what it promises for our well-being, the culture at large may also be in the midst of an evolution in consciousness. When we become mindful, either in our waking state by allowing and encouraging all of our senses to notice novelty or through meditation, the outcome is the same. These are two roads to the same place. They are neither mutually exclusive nor at odds with each other. There are contexts where one or the other may be preferable. Those who want a major life change, for example, may find meditation to be the path to take. Those who find meditation difficult or too unfamiliar, mindfulness as I study it may be more appropriate. Until schools and organizations provide opportunities or encourage students and employees to meditate, it may be worth while to recognize that mindfulness without meditation can be easily accommodated into present organizational structures. As all of us come to see that mindfulness is effortless and always available, and results in better health, effectiveness, and happiness, it is likely to become the preferred choice to the currently more normative version of being sealed in unlived mindless lives.

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Further Reading

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of well-being, and a "left-shift" in baseline neural activity indicating the capacity to approach, rather than withdraw, from challenging internal or external stimuli.

Being "creatively mindful" has also been associated with positive changes in physiology and in psychological well-being (Langer, 1989, 2009; Langer & Moldoveanu, 2000). By experiencing learning from an open and engaged stance, being presented with material that does not prematurely close perception and understanding through constrictive categories and by involving the learner actively in the educational process, creative mindfulness can be viewed as also increasing the individual's way of "bring present" with the learning experience (Siegel, 2007a).

In these ways, we can see that both creative and contemplative mindfulness produce positive effects on health and well-being and also enhance the general sense of presence in an individual's life. What might be the underlying shared mechanisms of these two distinct approaches to being mindful that might explain their similar outcomes? To address this question, we will offer a fundamental proposal and discuss several possible shared mechanisms that might underlie their commonalities. Our goal is not to review the exciting and growing research on empirical studies of mindfulness, but rather to explore the important concepts and their interrelatedness in fundamental ways that may inform future investigations and the creations of practical applications.

Our proposal is that presence, the experience of open awareness we are suggesting is within both contemplative and creative forms of mindfulness, is a state of mind in which an individual learns to live with uncertainty. Beyond merely *tolerating* a state of not knowing the outcome of thought or action, we are proposing that *thriving* with uncertainty becomes a way of being for individuals who experience the different approaches to being mindful. While this hypothesis will need focused empirical research to support its possible validity, we hope that by offering this detailed conceptual discussion, future investigations may illuminate the core processes connecting contemplative and creative mindfulness with well-being.

To attempt to illuminate the possible mechanisms underlying how we cultivate a mental state in which we thrive with uncertainty, we need to first explore the concept of the mind itself.

Mind, Brain, and Relationships

To understand how being mindful creatively or contemplatively might influence our physiological, psychological, and relational well-being, we will first explore a way of defining what the mind is, and then discuss how it relates to health in the body as well as in our social lives. The fundamental question we begin with is, "What is the connection among body, mind, and relationships?" What might these three seemingly distinct aspects of human life share in common? What actually links them to one another?

The body is composed of molecules that are assembled into cells that form systems that are differentiated and linked to one another to enable physiological processes to emerge and life to be stabilized and maintained (homeostasis), changes across time to be adapted to (allostasis), and reproduction to be possible. Allostasis can be thought of as the way we maintain stability (homeostasis) through the experience of change

across time with an adjustment of multiple physiological regulatory systems to the demands posed by the environment (see McEwen, 2000; Sterling & Eyer, 1988). Within each cell is a nucleus with genetic material, surrounded by the cell body with various organelles subsuming a range of functions each helping subcomponents function together as a larger whole. Cells link within organs, organs interact within bodily systems, and the whole body maintains a coordination and balance of homeostasis in the moment, and of allostasis over changes occurring across time.

From the time of conception, cells form the basis of life. The single-celled conceptus differentiates into two, four, eight, 16, 32 cells, with more and more divisions of cells until trillions of cells differentiate to form our various systems. Of note is that the collection of cells that form the outer layer of the conceptus, the ectoderm that will form our skin, partly folds inwardly to create the origin of our nervous system. The neural tube is formed with the growth and migration of the basic cells, the neurons, extending our neural system from head to toe. It is this origin of the nervous system from the ectoderm, as it is with the skin itself, which makes our nervous system function to link the inner and outer worlds. Part of this migration of neurons is to the head where an extensive organization of neurons and their supportive glial cells, the astrocytes and oligodendrocytes, form our brainstem, cerebellum, limbic region, and neocortex. Part of neural differentiation is to the far reaches of our limbs and to the extensive innervation of our internal organs—our heart and intestines—that, like the brain in the head, are constructed into interconnecting spider-web-like systems.

The parallel distributed processing of our extensive neural networks forms a system in which it is believed that information can be processed (McClelland & Rogers, 2003; Raffone & Van Leeuwen, 2001; Rogers & McClelland, 2008). Examination of the fundamental ways in which neurons communicate with one another suggests that ion flow down the axonal length of the membrane, called the action potential, serves as a means of electrical transmission of the equivalent of the flow of current down to the end of the neuron. Chemical release at the junction between two neurons in the form of various neurotransmitters into the synaptic cleft produces changes in the downstream or postsynaptic neuron. These changes either facilitate or inhibit the instantiation of an action potential in this neuron. In sum, the process of "neural firing" involves the *electrochemical flow of energy* between and among neurons distributed both in the head and throughout the body.

Recent explorations of how the brain functions reveal the profoundly social nature of our neural lives. As vertebrates, we have an extensive central nervous system that helps regulate our bodily physiology, to create allostasis. As mammals, we are creatures that live and regulate ourselves through interactions with others of our species, key interactions that enable us to maintain our bodily equilibrium. As humans, we have an extensive set of social interactions, beginning at birth, that influence both how the nervous system develops and how it functions in the moment and across the lifespan. These early social interactions shape not only neural connections, but even the epigenetic molecules that control gene expression in neural regions that regulate our internal state (Roth & Sweatt, 2011). It may be for this reason that the most robust predictor of medical health, mental health, longevity, and even "happiness" is the presence of supportive and close relationships in a person's life (see Barnes, Brown,

Krusemark, Campbell, & Rogge, 2007; Fagundes, Bennett, Derry, & Kiecolt-Glaser, 2011; see also Rakel et al., 2009; Siegel, 2012a; Tronick, 2004). If relationships are so important in our health, what exactly defines a relationship?

A relationship can be defined as the patterns of how energy and information are shared between two or more people. Energy is the capacity to do something; information is a pattern of energy that has symbolic value or meaning beyond simply the pattern of neural firing. Flow is the change of something across time. And so the basic unit of a relationship is the flow of energy and information, and how this flow is shared between two or more people and the environment. Whether we examine the close attachment between infant and caregiver, the intimate communication of romance, the emotional connections in friendship, or the larger ways in which we live within families, affiliate with groups, or live within communities and embedded in our larger culture, our relationships interact with our nervous systems to shape who we are (see Siegel, 2012a). Naturally, our genetics shape how we develop as well, including how the epigenetic regulation of gene expression is shaped by experience, but we are "hard-wired"—that is, we have inherited the need—to connect with each other in ways that promote health and longevity.

So, we have defined one aspect of the body, the nervous system, as an *embodied mechanism* of energy and information flow. We have further defined relationships as the *sharing* of energy and information flow between and among people. What, then, is the "mind"?

Though mind is rarely defined and even called a "vague term" in the *Oxford Companion to the Mind* (Gregory, 2004), there is some general consensus that components of the mind, the many elements that comprise our mental life, include our feelings, thoughts, memories, perceptions, hopes, dreams, beliefs, and attitudes. Mental life also includes, but is not limited to, awareness, or the experience of being conscious. And mind also refers to our subjective experience, the felt texture of our inner lives, the mental "sea inside." We can also have a mind, but not have "theory of mind" or "mentalization" that would allow us to know that we have a mind—in ourselves or in others.

In the interdisciplinary field called *interpersonal neurobiology* (Siegel, 2012b) we attempt to combine a wide range of sciences into one consilient (Wilson, 1998) approach that suggests that we can offer not just a description of what comprises mind, but actually a working definition. In this definition, we see the fundamental process of energy and information flow as our unit of analysis: Energy and information are the "stuff" of the system we are examining. The "embodied nervous system" we are calling simply the brain is the *bodily mechanism* of that flow; relationships are the *sharing* of that flow; and mind is defined as an emergent self-organizing, embodied, and relational process that arises from and also regulates the flow of energy and information. In simple terms, beyond awareness and subjective experience, this third aspect of the mind can be defined as *an embodied and relational process that regulates the flow of energy and information.*

Within this definition, we can see that what occurs experientially within an individual's flow of energy and information and how that flow occurs between people gives rise to mental life. This embodied mechanism and this sharing of energy and information can occur within us, between ourselves and another individual, and among

several people in a family or classroom or group, or among widely distributed clusters of people within communities, societies, and the larger culture (see Kitayama & Uskul, 2011; LeVine, 2010; Szyf, McGowan, Turecki, & Meaney, 2010). In this way, disciplines from neuroscience and psychology to sociology and anthropology can find a way of communicating with one another using this proposed definition illuminating one aspect of mind. From this window, we can see how patterns of energy and information flow are shaped by neural structure and by the many forms of relationships we have in our lives.

We can also see that this definition of mind helps us to step into the question of how mindfulness changes our relational and our bodily well-being. How we focus attention within the experience of creative or contemplative mindfulness can now be viewed in terms of how we regulate the flow of energy and information. Attention is a term used to designate the process of how information flow is directed, and information is created and transformed by way of the change in energy patterns across time. Certain swirls of energy, like sounds or sights, contain patterns with symbolic value that we call information. And attention directs this movement of energy and information across time, but within us (our nervous system) and between us (our relationships).

With this definition, we are not attempting to explain what subjective experience is, nor are we offering to step into the exciting but complex set of discussions about what consciousness is, or how it may arise from neural firing patterns, if it indeed does in such a simple, unidirectional way as we'll discuss later in the chapter. Here we are suggesting that this third aspect of mind—its regulatory function as an emergent, embodied and relational self-organizing process—will be of potential help in illuminating the nature of the various forms of mindfulness. Self-organization is an innate property of complex systems—collections of elements that are open to influences outside of themselves and that are capable of becoming chaotic. As an emergent process, self-organization both arises from and also regulates the interactions of elements of the complex system (Kröger, 2007; Kauffman, 1996). In this case, the complex system in question is energy and information flow within an individual and between an individual and the environment, including our social environment. Our minds are both embodied and socially embedded. Our proposal is that both creative and contemplative approaches to being mindful involve our minds, and how the mind regulates energy and information flow in a specific manner. We will turn know to how relationships and the embodied brain interact to shape the experience of mindfulness in its contemplative and creative forms.

Four Hunches

Four different avenues of explanation will be offered here to invite further explorations of how the mind, brain, and relationships contribute to the health-promoting aspects of being present within contemplative and creative ways of being mindful. These avenues may at first be considered metaphors, stories that reveal possible mechanisms that may, or may not, shed some new light on this topic. These metaphoric stories are inspired by scientific studies of actual mechanisms, but we are not claiming that there is enough empirically derived, objective data at this point to assert these

will respond following the initial input of a bottom-up flow. In other words, prior experience, embedded in synaptic connections that help shape memory storage, will serve as a "filter" that makes incoming streams of bottom-up data shaped, molded, and categorized. This can be called "top-down," using this term specifically to refer to how prior learning shapes the processing of information (patterns of energy flow) emerging from the bottom-up input to that cortical column. Simply put, there is no such thing as "immaculate perception"—we are structured to filter present experience through the lens of past events and how we have processed them.

For example, if I observe a flower with my eyes, the photons stimulating my retina will send streams of energy flow (neural firing patterns) through my optical nerve and then through my thalamus and on to the back of my cortex where the columns in the occipital lobe will become active. If I've seen that kind of flower before—and if I use a linguistic symbol, a word, to name it—then that top-down process will alter how I ultimately receive the bottom-up input into awareness. Across a possible range of interacting columns (not necessarily within a single column), top-down flow will "crash" into and mingle with bottom-up flow, and the result will influence my subjective experience within awareness of the flower in that moment. In other words, prior learning will shape present perception.

This first hunch is about the idea that the brain is an anticipation machine, shaping what it experiences now by what it experienced before in order to get ready for what might happen in the immediate next of now. In getting ready for the horizon of the present moment, we are actively constructing an anticipated map of what is likely to happen next. This mapping of reality is simply what the cortex does, and it is, in some way not yet understood, how our mental experience of both awareness and inner, subjective experience is shaped. This anticipatory quality of cortical mapping has been called dynamic representations (Freyd, 1987). Patterns learned from the past shape perceptions in the present.

Here is the proposal: Mindfulness may involve a suspension or minimization of the influence of top-down on bottom-up experience. Within creative mindfulness, this would involve letting go of fixed categories and names. Within contemplative mindfulness, this would be seen as the route to being curious, open, and accepting of whatever is present in the moment. Letting go of judgments and expectations would occur by inhibiting top-down flow from imprisoning the presence that emerges with bottom-up. In both creative and contemplative mindfulness, enhancing bottom-up and downregulating top-down would be the shared mechanism that permits a form of "presence" to arise for the individual, a presence that promotes a clarity of awareness and physiological as well as interpersonal benefits.

Hunch 2: Experiencing versus observing

Our second hunch may be related in part to the first proposal. Recent neuroimaging studies affirm the neural nature of what contemplative mindfulness practitioners have described for centuries: There is a distinct experiencing mode and a distinct observing mode in how we experience perception and awareness. In the brain, the regions with activities that correlate with these mental experiences are an observing circuit

nonwellness. When not integrated well, such default mode processes correlate with mental illness (Zhang & Raichle, 2010). Studies of contemplative mindfulness have even revealed that mindfulness training increases the integrative capacity of the default mode circuits, overlapping with the midline observational regions.

Creative mindfulness might ingeniously be setting up learners and teachers alike to let go of fixed ideas and constricting language that could be considered aspects of the processes for the observing circuit. In contrast, the experiencing circuit is a bottom-up dominant passage of energy and information that is about being with what is, as it is happening, without narrative distortions. It would be a possible research project to explore how mindful learning might enhance the integrative default mode state.

Narrative and observation have an important role to play in how we approach and appreciate life. Narrative enables us to reflect on what has happened, connect this to what is happening now in our experience, and then plan for the future. This mental time travel ability is both beautiful and a burden. The beauty of narration is that it gives us a four-dimensional (across space, across time) sense of ourselves, empowers us to actively take our reflective awareness and shape our ongoing lives in narrative enactment, and offers us the opportunity to articulate and experience a deep gratitude for our lives. Pennebaker's studies of narration reveal its health-promoting effects (Ramirez-Esparza & Pennebaker, 2006). The burden of narration is that it can distance us from the vitality of lived, primary experience. The benefits of narration are that they integrate memory and emotion, helping us make sense of our lives across time and contexts. But excessive narrativizing in life can give us a dulling of the fresh, spontaneous emergence of living in which we are simply categorizing all events into clusters related to prior experience. Our narrative themes may also distort what we experience to conform to what we know so that we gain a sense of mastery in our lives. Narratives can make us feel certain in the face of the anxiety that may emerge in the face of uncertainty. And so narration is a mixed blessing. When it is integrated with direct experience, the outcome can be health promoting. And as we'll see in our future discussions, integration is the coordination and balance of aspects of a system created by way of the linkage of differentiated parts. Integration can be seen as the fundamental mechanism of well-being—and here we can see the differentiation of observation from experience and their appropriate coordination and balancing in life would be at the heart of both creative and contemplative mindfulness.

Coordinating and balancing both the bottom-up and top-down (Hunch 1) cortical layers' streaming and the activity of the experiencing and observing circuits (Hunch 2) are two proposed ways in which mindfulness is mediated in the brain. Top-down and observation are both aspects of neural functioning that may be involved in how our mental life wrestles with unfolding experience to achieve a sense of predictability, of finding certainty in a world filled with uncertainty.

And so, with these first two hunches, we come to address how uncertainty, for the brain, is a two-edged sword. For a brain that needs to anticipate the immediate next of now so that it can avoid danger and be prepared to act effectively and efficiently, uncertainty is not welcome. Certainty enhances survival. This is the value of top-down and observation—they allow us to anticipate and to plan for experience, and therefore to control uncertainty, or at least prepare for it. And for a narrating brain, too, making sense of the world brings a comfort with knowing and a top-down framework

into which one can enfold all perceived, lived events. Narrating allows us to plan for the future, to deal with uncertainty by making a schedule, by organizing our mental calendar, so that we know now what will happen in the future and that we can actually enact that plan to literally shape our present based on our plans—our narrative themes that then mutually reinforce themselves.

When we experience life, present events can be immediately placed within our narrative schemata—the mental models that shape our narrative themes. We then continue with our self-reinforcing, antiuncertainty life by continually re-enacting these themes and categorizing experience into thematic chapters over and over again. Our perceptions of the world are folded into narrative perspectives as we filter what we see based on what we expect, discarding what does not fit in a form of selective perceptual neglect. Trauma, in fact, can be defined by how an experience cannot be neatly placed into the structure of our life narrative (see Siegel, 2010). In many ways, traumatic events assault our drive for certainty.

And so we can see that uncertainty is a threat both from the bottom-up/top-down cortical column perspective and from the experiencing/observing sensed versus narrating life domain. With top-down, we handle uncertainty with learned filters of anticipation. With observation, we deal with uncertainty with thematic filters, narrative enactments, and planning.

But uncertainty is not always a source of anxiety or danger. In fact, learning to live comfortably with uncertainty can be a source of emergent vitality in these arenas. Sensing the aroma of a flower can be immensely rewarding, before and beneath any words that might name that plant a "rose" or narrate that event as "just another walk in the park to get exercise." When we see with fresh eyes, we are honoring the novelty of bottom-up and the purity of the experiencer. When we expand our narrative stance to embrace uncertainty, we come to open our minds to new and enriching ways of being. Uncertainty does not need to be an enemy. But active efforts to release the pull of certainty to enhance survival within top-down and observation in the forms of creative and contemplative mindfulness approaches may be necessary as we grow past childhood into the adolescent and adult years as life unfolds and the brain matures. What Hunches 1 and 2 suggest is that there is a vulnerability in our survival-oriented evolved neural systems that make the drive for certainty innate. Mindfulness approaches may be a direct educational approach and training of the mind to liberate the vigilance and perceptual filtering controls that such certainty circuits create. With such integration of the fullness of bottom-up and direct experience, the mind can feel the freedom to be fully present for life.

Hunch 3: Cortical asymmetry and neural integration

Our third hunch builds on the finding that the two sides of the brain, especially in the limbic areas and the higher cortical regions, are asymmetric in both function and structure (see McGilchrist, 2009). Modern neuroscientists often downplay the significance of this "laterality," but it is clear from an enormous amount of carefully collected studies in our and other species that the nervous system has been asymmetric for millions of years. One basic idea about this asymmetry is that when areas are differentiated

and then they become linked, we can achieve more complex functions. But how is the right side of the brain different from the left? Colwyn Trevarthen (2009) and Iain McGilchrist's (2009) reviews of the extensive science exploring this issue suggest the following notions. Streams of information within the form of neural electrochemical energy flow within the embryonic brain travel upward from the right and left limbic area in distinct streams. This differentiated flow upward stimulates the growth of the right and the left cortex in distinct ways. In general, the right is more active after birth and grows more in the first few years than the left. The cortical columns in the right hemisphere have more intercolumn connections than the left, making the information created by these connections more cross-modal. In other words, the differentiated regions of the right are more interconnected to one another enabling the neural clustering of information processing to be more "contextual" and involving a range of modalities within a given information flow. In contrast, the left is thought to have more closely associated columns that are more isolated in their distinct clusters, enabling a deeply focused form of information processing. On the left, then, information processing is more "in-depth" and specialized for a given modality, and so it can be thought of as "decontextualized" and "analytic" as it "breaks down" elements into isolated components rather than "seeing the whole" within the accumulation of parts as the right may be more likely to do (see McGilchrist, 2009, for a thorough review).

The two hemispheres often work together, and each contributes to many of the processes that have been popularly thought of as distinct: reasoning and language, for example, have processes on both sides of the brain. Yet inhibition is also a dominant process, with activity in one hemisphere downregulating the activity in the other. Anatomically, the right hemisphere has a more prominent size of its prefrontal area, whereas the left is more expanded in the back, in the occipital region. The right hemisphere receives more direct input from, and sends more direct output to, the lower regions of the brain and the body itself, and hence some have called the right a more "emotional" and "somatic" side of the brain (see Devinsky, 2000).

The two sides of the brain focus attention in distinct ways. The right side mediates a form of sustained, broad, open, and vigilant attention, whereas the left side processes more of a sharply focused attention that narrowly directs the flow of energy and information. Not only are the ways of focusing attention distinct, but also the way we sense the world is different on each side. The ways of being mediated by each side, rather than actually what they "do," is perhaps a more accurate way of sensing their differences. McGilchrist's (2009) analysis of these distinctions urges us to consider the right as a mediator of an individualistic, sensory, living, context-perceiving and relational way of experiencing the world. For the right hemisphere, things are seen as unique, and we sense the living nature of our ways of belonging and connecting. The world is seen within a relational whole. The right, then, embeds a sense of being within a part of a larger, interconnected whole. Even the right's way of knowing is within an acknowledged limited perspective, with an awareness that there is a larger context into which the self as a part may fit.

The left, in contrast, uses denotative language and abstraction to create a definitive vision of the world that is known, fixed, decontextualized, static, and disembodied. The left creates a sense of the conceptual and generalized but is "ultimately lifeless" and not even aware of its own limited way of perceiving reality. The argument that

McGilchrist makes is that the challenge is that modern culture drives an overemphasis on left-sided ways of perceiving and being in the world. The cultural processes of rules and digital abstractions, of the virtual realities that fill our technical involvements, reinforce the left hemisphere.

The challenges to finding integration across the hemispheres are that the left hemisphere has a logical, linguistic "voice" that cogently argues its own point of view, while the right hemisphere's contribution to reasoning and language is not as forthright. In fact, we can simply state that the logical use of linguistic language to assert its own view of reality makes the left side often more persuasive in the reality of its ways of being and perceiving the world. For the left, the right-sided way of being is invalid; for the right, the left side's particular patterns are possible in that it is open to the limitations of its own perceptions and beliefs. Furthermore, much of the interaction between the two sides of the brain is based on inhibition—activity in the right shuts down activity on the left, and vice versa. And so how can the two sides of the brain come to coordinate and balance their differentiated functions into a linked and integrated system?

Our suggestion is that both creative and contemplative mindfulness may promote integration across the hemispheres. How does mindfulness relate to this asymmetry across the hemispheres? One could correctly infer that right-sided functions may be seen to facilitate our embracing of the unknown, enabling uncertainty to be a part of the world-view of that form of "right-sided" consciousness. However, contemplative mindfulness studies (Davidson et al., 2003) reveal the empirical finding of a "left shift" in which there is an increase in left frontal activity supportive of an "approach-mode" of neural functioning. In other words, contemplative mindfulness training enables a person to be more likely to approach, rather than withdraw, from challenging stimuli (Urry et al., 2004). This finding does not mean that other aspects of right-hemisphere processes are not actively at work, but imaging studies do not provide empirical support for the view that contemplative mindfulness is a "right-sided function."

However, contemplative mindfulness does involve the fundamental process of interoception—the awareness of the sensory input of the body. This process is dominant on the right side of the brain, involving right anterior insula and right anterior cingulate regions of the brain (Craig, 2009; Critchley, 2009). These interoceptive inputs are in turn followed by right medial prefrontal and right orbitofrontal cortical activations that are associated with both insight and empathy. As contemplative mindfulness studies support improvements in both self-awareness and empathy, associated also with improved self- and other-directed compassion, we can see that these right-sided dominant processes do in fact support the intuitive notion that mindfulness may involve, in part, the activation of right-sided functions.

Research not only studies the practice of contemplative mindfulness, as in meditation effects, but also investigates innate traits of being mindful. For mindfulness personality traits, Baer, Smith, Hopkins, Krietemeyer and Toney (2006) have determined these five factors with the propensity to: be aware of what is happening as it is happening; be nonjudgmental (letting go of expectations and criticisms); be nonreactive (coming back to emotional equilibrium readily after perturbations); be able to name and describe the internal world; and be able to have self-observation (observing the self from a bit of a mental distance).

"being with" experience might have a right-sided dominance. Michael Gazzaniga once stated that the "purpose of the right side of the brain is to simply see things as they are" (Gazzaniga, February 1996, Keynote Address, American Association of Directors of Psychiatry Residency Training Programs, San Francisco), whereas the left functions to conceptualize and categorize experience. These latter top-down processes, perhaps dominant on the left, can then keep us from just "being with" experience as it is happening. We "do" something with our moment-by-moment experience within the categorizing, analyzing columns of the left side of the brain. Such processing may be the root of the narrative functions being dominant on the left side, as suggested by Gazzaniga (1998). We move into cortically created representations distant from direct experience, make abstractions, and replace the right side's broad, open, vigilant attention with the sharply focused attention of the left. Here is the proposal we are making: The left constructs its perceptions of the world with a "doing mode" that is an active top-down, narrating process.

But this is only part of the story. Further in opposition to the intuitive sense that many have that mindfulness may be more of a right-sided dominant affair, we can also argue elements of a different, counterintuitive strategy for laterality: that mindfulness does not involve a favoring of one side over the other but rather cultivates an integration across the hemispheres.

Integration is the linkage of differentiated parts. And integration can be proposed to cultivate harmonious functioning, as it is based on the coordination and balance of different aspects of a system (Siegel, 2012b). So, we now move to this fundamental idea explored in the field of interpersonal neurobiology: *mindfulness may create well-being by promoting integration*. This proposal is supported by a collection of recent studies that reveal that the integrative fibers of the brain are those that are both activated and apparently stimulated to grow in contemplative mindfulness training (Luders, Toga, Lepore, & Gaser, 2009; Lazar et al., 2005). Such fibers include regions of the prefrontal cortex and hippocampus that link widely separated areas to each other. Such permits the coordination and balance of functions in the body as a whole. This is internal, neural integration. And mindfulness supports closer and more rewarding interpersonal relationships; enabling people to be present with one another as they honor each other's differences while promoting compassionate linkages (see Parker, Nelson, Epel, & Siegel, in press). This is interpersonal integration.

Internal and interpersonal integration may be the fundamental ways in which mindfulness and presence promote well-being (Siegel, 2009). And so here is the summary of our third hunch. Both contemplative and creative mindfulness promote bilateral integration in the brain, supporting internal and interpersonal integration and health in a person's life.

Hunch 4: Energy and information as transformations of probability between uncertainty and certainty

In both creative and contemplative forms of mindfulness, we can propose that awareness in these states involves a way of channeling energy and information flow—of paying attention in the present—in a particular manner. Mindful awareness is at the heart

romance, friendships, schools, communities, and societies, we are examining the ways in which energy and information are exchanged. These patterns of communication, within culture and within homes, among many people or between two individuals, are always mediated by a flow of information that rides upon shifts in energy. Even the study of one's relationship within oneself, the inner nature of our subjective lives and how we focus attention, how our observing self accepts our experiencing self, can be seen as a pattern of energy flow that enables information to be created. And so a first impression is that contemplative mindfulness may evoke an "integrated relationship" internally—one that is based on internal attunement that enables an observing self and an experiencing self to be differentiated and linked, to be integrated. And creative mindfulness may be created interpersonally as the teacher provides an educational experience that promotes the integration of bottom-up and top-down, of experiencing and observing. The student can have a relationship with the material that is integrative as it arises from mindful instruction that sets the stage for such integration as discussed in our earlier hunches.

As we've stated, information can be seen as a pattern of energy that has symbolic value or meaning. Some energy, like a blast of sound, may be "pure energy" without symbolic value. This pattern of sound just is what it is. In contrast, if we hear the sound "Golden Gate Bridge" we are having energy waves (air molecules' movement creating pressure on our ear drum) induce electrochemical changes in our acoustic nerve. Ensuing cascades of electrochemical transformations in the head streaming through the brain somehow, in ways no one knows, become associated with the subjective sense of that phrase, and the subjective experience of seeing that bridge over the San Francisco Bay in our "mind's eye."

This is an important point: No one knows how subjective experience (as in the internal seeing of the bridge in one's memory or imagination) and neural firing (ions flowing in and out of membranes and the release of neurotransmitters within the synapse linking neurons to each other) mutually create each other. It is simple, and quite common, to say that neural firing creates subjective experience. When certain regions of the brain become active, as in the occipital cortex for visual imagination, memory, or perception, we "see something." But we also know that imagining something, like playing the piano keys of a scale, can also make changes in the brain's firing and ultimately the very structures that are associated with that process (Pascual-Leone, Amedi, Fregni, & Merabet, 2005; also see Doidge, 2007, for an overview). In fact, mindfulness meditation is the use of subjective experience and the focus of attention to intentionally create a mindful state that shapes neural firing and creates long-lasting neural growth (Davidson & Begley, 2012; Lazar et al., 2005; Luders et al., 2009). Naturally, we could approach this in a simple and unidirectional way and state that we are simply making parts of the brain fire and that brain activity always "creates the mind." And this indeed may be true. But let's take a more open-minded position at first and see where this goes. Let's in fact be creatively mindful and avoid the premature closure of possibility, the premature hardening of the categories (Cozolino, 2003).

Descriptions of mental functions exist, naturally. But amazingly we do not have a straightforward statement of what the "mind" actually is beyond some views that state mind is "simply brain firing." While action potentials and chemical release (brain firing) is one aspect of the story, it is not the "same aspect" as having a thought or

feeling. Just as an apple has skin and seeds, the whole apple is not one or the other. We don't say the skin is the seed. They are two aspects of one thing—of the whole apple. Similarly, mind and brain are not the same. They are two aspects of one thing, and that thing we are suggesting is energy and information flow.

We actually don't know what a thought or a feeling really "is." We simply do not know what awareness or consciousness and subjective mental experience actually "are." And so to say that our inner mental lives are "simply a product of brain firing" is actually not founded in science. After all, neural firing is not the same as being aware or having the subjective experience of, say, feeling curiosity or love or fear or joy. Yes, brain injuries in specific regions can impair specific mental functions. But this longstanding finding demonstrates an association, not necessarily causality. The skin and the seed are both part of the same apple, but they are two distinct but interdependent aspects of the whole. When certain parts of the brain are damaged, certain mental functions cannot occur. With a stroke, for example, we may lose the ability to feel fear or think empathically or see visually. Our mental processes may depend completely upon neural processes, just as the survival of the apple's seeds may depend on the intactness of the skin. The mind does need the brain to create itself. But, thinking mindfully, perhaps the mind uses the brain to create itself. And when certain neural or certain relational processes do not occur, the mind also may be constrained. The mind uses both the brain and relationships to create itself. We are stating that the mind is not limited to the boundaries of the skin, and that as a self-organizing process, it arises from that which it will also regulate. This recursive property is simply the mathematics of complex systems. Complex systems have emergent properties that are recursive. And this emergence, we are proposing, is a process of both our embodied brains and of our interactions with other. The mind is both embodied and relational.

To understand how the mind becomes mindful, creatively or contemplatively, taking on these issues straight on is important, if not essential. We will move beyond these very controversial issues to a proposal that comes from direct observation of inner mental life, from the first-person accounts reported by hundreds of individuals in a wide variety of cultures to one of us (DJS). While they cannot be quantified as statistical analysis requires, science also emerges from careful observation. And when it comes to the mind, to our subjective inner life, careful observation may be essential to explore, systematically, what "mind" actually is. We will combine these observational narrative reports with an interpretation of the science of energy from the field of physics.

Knowing that for many in academic psychology and psychiatry, attempting to link the findings of physics to the study of the mind is often discouraged, we nevertheless will explore this fourth hunch about our discussion of mind and how this may pertain to the various aspects of mindfulness. We feel that inviting ourselves to link this working definition of mind as an embodied and relational process that regulates energy and information flow to the field of mindful awareness can reveal possibilities that may be of value for both future research and direct practical applications. We ask you to consider choosing to be open to the possibility that what follows may be useful, even if it is quite unconventional.

Energy is the focus of study of the field of physics. In classical physics, a Newtonian view of the world examines forces that operate on large-scale clusters of matter, studying motion and gravity. When subatomic particles are studied, however,

classical laws of physics do not generally apply. Instead, modern physics (from the last 100 years) has examined the study of quantum mechanics in order to help make sense of empirical findings. In the study of light, for example, photons have been revealed to have both wave and particle properties, and as movement of energy across time, light offers a fundamental way of studying how aspects of our universe works. In quantum physics, what has been discovered are a set of principles that appear to apply not only to the microscopic world, where they can be measured readily because of their small dimensions, but also to all of matter, no matter the size. In a quantum view, energy is measured as degrees of probability along a spectrum from open possibility to fixed certainty. There are many fascinating aspects of this field of study, including the finding that measuring a photon, for example, makes it collapse its wave function (across a spectrum of possible values) and be measured with certainty as a particle (with a certainty of its location at a point in time). There is also the intriguing "entanglement" implication of quantum mechanics suggesting that movements of particles, their spins and probabilities, have influences from particles not in physical proximity to them. Quantum equations that are created to explain empirical findings require these "at a distance" factors. Recent discoveries of the Higgs boson, the theoretical but empirically predicted particle that could explain the nature of matter as accumulations of particles to create mass, reveal how deep quantum analysis may offer new insights into the mysteries of our universe.

Why would our mental lives live in a different plane of reality than the rest of the world as some assert (Wallace, 2010)? We are suggesting that judicial explorations of the nature of energy may offer us at least empirically inspired though theoretically constructed ideas that might help us to see mental life in a new light. We understand that the following interpretation of the lessons from physics needs empirical validation and may not be initially embraced, but attempting to find a link between possible meanings of energy principles with observations of mental life may prove fruitful. These quantum ideas have intriguing possibilities about the universe, and about our own mental lives. While there may be many aspects of quantum physics that ultimately shed some new light on our mental explorations, here we will focus on the fundamental view that energy is measured in degrees of probabilities.

When spending a week with over 100 physicists, one of us (DJS) was able to informally ask innumerable academicians to define what energy is. The overall statements from these dedicated scientists was that while we really don't know what these various forms of energy "are," the physicists uniformly stated that "energy" is a term generally signifying the capacity to do something. As one professor stated it, energy is the "capacity to do stuff." Energy takes many forms, from kinetic energy of the movement of particles of matter to light energy. But as a general aspect of our physical universe, this capacity to do something is measured as degrees of probability. Energy moves along "an energy-probability curve" that spans from certainty (100% probability) to uncertainty (near 0% probability). If a state of energy is highly likely, it moves toward 100% probability. If a state of energy is highly unlikely, it moves toward 0% probability. This range of the energy-probability curve from uncertainty to certainty will be the focus of our discussion.

We are presuming that there is one domain of reality and that it is logical inference, then, to assume that mind lives within that reality. If this is indeed true, the natural

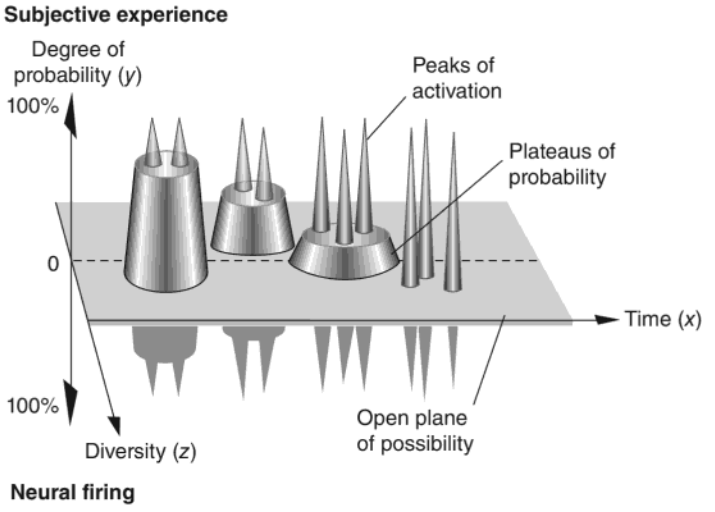

Figure 2.2 The plane of possibility. Used with permission. Copyright © 2010 by Mind Your Brain, Inc. Daniel J. Siegel, M.D., *The Mindful Therapist* (2010).

extension of this thinking is to state that if the mind is a process that regulates energy flow within and between us, that it is embodied and relational, then applying the laws of quantum physics—our most thorough and contemporary study of energy—is a natural, logical next step to deepening our understanding of mind.

And so here is our unconventional proposal. We are suggesting that the term, "energy flow," means that "probability shifting" is how energy changes "across time" (flow). Notice that flow does not require movement across space. As we explore mental life, we may come to see that our subjective experience does not reside in a particular three-dimensional spatial location, but it does exist within a certain "probability space"—where a degree of certainty exists at a given moment of time. Figure 2.2 is a drawing offering one metaphoric way of illustrating what this probability space might look like. At the top of the graph is our mental life; at the bottom is our neural firing. Note that these may be completely overlapping across time, cosynchronous, so that neural firing and mental life happen at the same time. But this may not always be true. One process may slightly precede the other, and "drag the other forward." This is highly controversial but in fact may explain certain subjective ways we use the mind to actually change the function and structure of the brain. The seed can influence the skin just as the skin can influence the seed of the apple. The key is to be open-minded about which process drives the other forward.

The next aspect of Figure 2.2 to focus upon is what gives this figure its name, "The Plane of Possibility." Here, let's focus on the top part of this graph, our mental life. The range of probability, from zero to 100, is depicted on the *y* (vertical) axis. Time is mapped out on the *x* (horizontal) axis. As time moves forward, the probability value can shift from within the plane (near a zero probability), where open possibility is present, to other values along the energy-probability curve. Above the plane, the probability curve shifts from near zero toward 100% certainty.

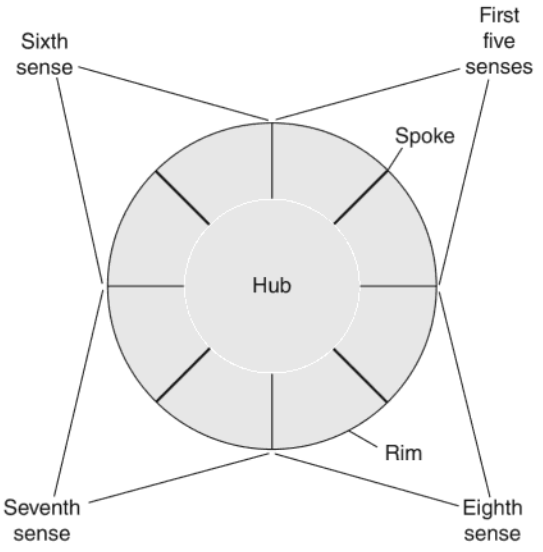

Figure 2.3 The wheel of awareness. The hub represents the experience of knowing within awareness; the spokes are focused attention; the rim is the known of awareness including our sensations and other mental processes. The sectors of the rim are as follows: first five (outer world), sixth (body), seventh (mental activity), and eighth (relationships) senses. Used with permission. Copyright © 2007 by Mind Your Brain, Inc. Daniel J. Siegel, M.D., *The Mindful Brain* (2007).

In creative mindfulness, we can further suggest, presenting educational material with words that have broad rather than highly constrained meaning (Langer, 1989, 1997, and this volume) can be seen to pull the peaks of certain definitions down to plateaus and ultimately into the plane that enables alternative meanings of the word to be considered. In the mind, this would be experienced as a feeling of inner freedom and vitality. In the brain, we can suggest, this might be revealed as more widely distributed neural activation patterns that would deepen memory profiles and make access to encoded experience more robust and connections among learned items more intricate and therefore activating a more widely distributed set of neural representations.

Contemplative mindfulness enables the practitioner to repeatedly enter a state of being aware of awareness. While the wheel of awareness exercise was developed as a technique to integrate consciousness (Siegel, 2007a, 2012b), differentiating the known from the sense of knowing, it also meets the criteria for a mindfulness practice. The visual image of a wheel helps to focus attention as a moving spoke along the rim which represents anything one might be aware of, from sights and sounds to thoughts and feelings (see Figure 2.3). Awareness can be seen as composed of the known (the rim) and the knowing (the hub). Here, the hub represents what it means to "know" within awareness itself. Within the wheel of awareness practice, the subjective texture of pure awareness is experienced directly as a way of sensing the feeling of directing attention to the hub itself. The participant in the exercise does not focus the spoke on

the world. The release from top-down constraints that create anticipatory states of mind based on what has been learned in the past would provide a direct way of "seeing life clearly" by minimizing these automatic restrictions on living.

Second, we've explored the possibility that mindfulness enhances our experiencing circuitry so that we balance our tendency as we age to observe and narrate with a renaissance of our capacity to live life directly. We come to see with child's eyes, making the ordinary once again extraordinary. Mindfulness would not only be about "being in the flow" without narration but also involve a balance in the two and permit choice of which circuits to engage in particular lived moments.

Third, we are suggesting that an integration of the two hemispheres may be how mindfulness creates an openness to both be with and understand experience as the right and left hemispheres come to coordinate and balance their differentiated functions. Such bilateral integration may permit a more flexible and adaptive way of being in the world than either hemisphere alone could create.

Finally, we've stepped gingerly into the world of physics and energy studies to propose that mindfulness strengthens our mental and physiological lives by creating a stronger capacity of the mind to create the openness of possibility contained within mindful awareness. This openness can be seen as the movement of an energy-probability curve from restricted but important zones of certainty and probability down into an "open plane of possibility" in which awareness emerges. Both contemplative and creative approaches to mindfulness may cultivate their health-mediating effects by strengthening the capacity to move more freely among these zones of the probability curve from certainty to openness. In this view, thriving with uncertainty is created by this strengthening of the mind's ability to regulate energy and move it freely into this plane of open possibility.

Mindfulness in its creative and contemplative forms enables us individually to create more vital and open states of mind, ways of being, ways of living. Mindfulness collectively can help us sense the ways in which we are profoundly interconnected to one another, and to our home, this planet we call Earth. By underscoring the ways in which mindfulness enables us to thrive with uncertainty, our hope is that as we approach the uncertainties of life on our planet, we will perhaps become better able to help one another develop the resilience that will support our approaching, rather than withdrawing from, the challenges we face in our very fragile and rapidly changing world.

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3

Eastern and Western Approaches to Mindfulness

Similarities, Differences, and Clinical Implications

James Carmody

As the efficacy of mindfulness training in reducing distress and increasing quality of life (QOL) has been demonstrated through well-controlled trials, an increasing number of mindfulness-based programs have sprung up designed for specific populations and circumstances. Summaries of their positive effects are covered in a number of reviews (Chiesa & Serretti, 2011; Hofmann, Sawyer, Witt, & Oh, 2010; Irving, Dobkin, & Park, 2009). While each of these programs has as its goal the reduction of mental suffering, descriptions of their training protocols reveal important divisions and variations between them in their conceptions of the construct of mindfulness and how it is best learned and taught.

The most widely studied programs are as follows:

1 The Buddhist-derived approach popularized by Kabat-Zinn in which the experience of mindfulness is to be found in the experience of meditation practice. This has found its most popular expression in mindfulness-based stress reduction (MBSR) and mindfulness-based cognitive therapy (MBCT).
2 The conception described by Hayes in acceptance and commitment therapy (ACT) and dialectical behavior therapy (DBT) in which the approach to mindfulness is based upon the psychological processes involved in the domination of the literal and evaluative functions of human language and cognition (Fletcher & Hayes, 2005). These programs also draw upon cognitive behavioral therapy but have removed mindfulness from a meditation foundation and freely adapted their training protocols to suit the circumstances of their clinical populations.
3 The approach described by Langer, which derives from social psychological principles, implicitly draws upon elements of each, but approaches mindfulness as the desired end-result of an open and curious orientation to the environment. Its training protocols, described below, focus directly upon encouraging the cultivation of such a stance to experience.

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The Eastern Conception and Approach to Mindfulness

The Eastern conception of mindfulness emerges out of the primarily introspective approaches to knowledge extant in India at the time of the Buddha that had the goal of reducing mental suffering. In this view, the root problem preventing mental peace is ignorance of the momentary construction of the sense of self and ownership in the mind, and the associated craving and aversion. The term mindfulness has come to be the accepted English translation of the Pali word "sati" (sometimes translated as awareness), which is one of the mental qualities whose cultivation is considered important in a larger systematic path to dispel that ignorance and the development of mental peace. But since Pali is no longer a spoken language, and the teachings have undergone adaptations in each of the countries to which Buddhism spread, there is considerable variation in the ways different traditions approach and understand the construct described in the original texts.

As Eastern mindfulness is once again adapted, this time to Western clinical settings, the definitions and terms used to describe it have been cobbled together from traditional and contemporary constructs (Bishop et al., 2004; Brown & Ryan, 2004). And as might be expected, given its religious roots, there is ongoing debate as to where its "true" understanding is to be found (Grossman, 2011). That the word "mindful" had a pre-existing meaning in English has extended the confusion. Nevertheless, programs such as MBSR and MBCT were developed to reflect a spirit of mindfulness as it is generally taught in traditional Buddhist monastic settings. And even as they vary in detail, most definitions of mindfulness in the clinical literature center around that of Kabat-Zinn of "paying attention in a particular way: on purpose, in the present moment, and nonjudgmentally" (Kabat-Zinn, 1994; Shapiro, Carlson, Astin, & Freedman, 2006). A long list of additional descriptive expressions has also been used such as: beginner's mind, being in the moment, present-centered awareness, embodiment, being rather than doing mode, etc.

Most programs adhering to the Eastern conception first ask the beginner to cultivate the capacity to deliberately redirect attention to an arousal-neutral mind object; most often the sensations associated with breathing. Not only does this exercise develop facility in the use of attention, but directing it to this arousal-neutral object creates a relatively calm mental state that can be accessed anywhere and at all times. This mental calm can be cultivated both as an end in itself and as a mental state conducive to the process of further experiential discovery.

Beginning instruction with the realm of sensation in this way has a couple of other advantages. First, it is the realm of experience most easily recognized and perceptually distinguished from the thoughts and feelings that comprise the two other components of everyday experience (Carmody, 2009). As such, it is readily accessible to the beginner. It is also the realm in which delight is most acutely experienced. Second, it redirects attention away from the ongoing internal monologue with its judgments and their accompanying unpleasant affect and to which attention repeatedly defaults. The capacity to distinguish between sensations and cognitions in this way opens the possibility of being able to remain longer in the sensory realm before attention

is once again overtaken by the cognition-based internal monologue categorizing (even in novel ways), judging and comparing the experience with imagined or remembered others.

These principles are exemplified in the use of the body scan as an initial mindfulness training exercise. Having established some facility in bringing attention to the sensations of the breathing, attention is moved in a systematic way through the entire body with the instruction to notice whatever sensations happen to be present in each part, and noticing the difference between the sensations, their associated feeling tone, and any cognitive commentary that is present. The instructions also ask participants not to try to change the sensation/thought/affect during the exercise, but simply to acknowledge and accept its presence. This process of perceptual differentiation and re-cognition of the components of experience is sometimes further supported by giving cognitive labels to them as they are noticed, such as "this is a thought," "this is a sensation," etc., or "this sensation has an unpleasant feeling associated with it … ," or "this emotion is associated with these sensations, thoughts," etc. As facility develops, recognition of the components as such becomes increasingly immediate, and some psychological distance from the content of cognitions is cultivated.

The Western Conception of Mindfulness

The approach extensively described and studied by Langer is probably the most radical departure from the Eastern approach in that it focuses upon the lived end-point of being more mindful. This is a mode of functioning that actively engages in reconstructing the environment by continually creating new categories or distinctions and thus directing attention to new contextual cues that may be controlled or manipulated as appropriate (Langer & Moldoveanu, 2000). Mindfulness is contrasted with the mindlessness characterized by processing environmental cues in an automatic and inflexible manner, and where cognition relies on preformed environments determined by automatic categories no longer consciously available for consideration. Approaching situations with curiousity and cognitive flexibility, on the other hand, reveals their novelty, keeping us in the present and open to new information. This mindful perspective-taking increases creativity and more fruitful behavioral responses to situations and problems. The whole individual is said to be involved in this process, and the felt sense of this is one of heightened wakefulness (Carson, Shih, & Langer, 2001).

Langer and colleagues have demonstrated that interventions manipulating the environment to increase awareness of these automatic mindsets, and stimulating new more fruitful perspectives (Langer, Bashner, & Chanowitz, 1985) result in remarkable increases in creativity, attending, and learning. In a widely cited study of longevity in nursing-home residents (Alexander, Chandler, Langer, Newman, & Davies, 1989), the mindfulness intervention required them to engage in both a structured word-production task and an unstructured creative mental activity task. Subjects were required to think of a word, take its last letter, and find a new word beginning with that letter. They were not permitted to use any word more than once per session, and the level of demand of the program was continually increased to keep it novel

and so more mindfulness inducing. Subjects were then instructed to produce words relating to specific categories such as animals, springtime, foods, places, etc. This task did not specify rules for thinking or particular target thoughts. Rather, the individual was asked to think about any topic in new and creative ways. Illustrations were provided such as thinking of unusual uses for common objects, or picking a controversial topic and arguing the side contrary to one's established opinion. Subjects were asked not to lapse into daydreaming but to actively direct their thinking during the process. They produced words for approximately 6 min, engaged in creative mental activity for 6 min and closed with another 6 min of word production followed by 2 min of rest.

Commonalities and Differences in These Approaches to Mindfulness

The most readily apparent principle the approaches have in common is the foundational idea that our experience of the world is shaped in large part by the way we perceive it. In the Western understanding of mindfulness, this principle emerges out of ideas from attribution theory in social psychology in which our experience of the world is reconstructed in the mind by attributing to the objects of the world those qualities detected through our senses. But Langer's work challenged the notion that people act only rationally on their beliefs, and are instead often guided by unconsciously processed information. Her mindfulness interventions encourage recognition of unconscious processes shaping inappropriate responding, replacing them with more appropriate ones. In the Eastern conception, the attribution principle is stated explicitly and radically in the Rohitassa sutra, a paraphrase of which reports the Buddha as having said: in this [fathom-long] body, with its senses and intellect, the entire cosmos is created along with the opportunity for its cessation. In this understanding, we are ignorant (unconscious) of the most fundamental processes shaping perception, and the training exercises are geared toward bringing them into awareness.

At this level, then, the two approaches have a good deal in common. In the Western conception, human suffering is created, or at least exacerbated, by people unconsciously employing outdated and inappropriate categories and mindsets in responding to everyday life situations (Langer et al., 1985). This results in lack of spontaneity and reduced awareness of the social and physical world and prevents the possibility of creative change. The training exercises to reduce this mindlessness such as the word "production" exercise or being challenged to think about a topic in a new and creative way by, for example, arguing the side contrary to one's usual opinion on a controversial topic, are designed to counteract this tendency. By intellectually challenging people to develop fresh, creative perspectives and explanations more appropriate to the situation at hand, the exercises make more apparent the automatic/unconscious categories that have been shaping responses. The language of these mindfulness instructions also reveals the influence of the classical Greek method of enquiry that it shares with cognitive therapy where solutions are sought through exposing conceptual flaws, and

knowledge and happiness are furthered by creating a more rational and appropriate path. This is a training that is dynamic and values perspective taking as a way of better understanding the world.

The intellect-centered exercises, such as the word-production challenges, have features in common with exercises used in some Eastern approaches to mindfulness training. For example, one of the functions of the koans, used in some Zen traditions, is to foster curiousity about rational cognitive processes, albeit by frustrating their attempts to find a solution. Challenging the primacy they typically hold on attention exposes the perceptual filtering preventing more immediate experience of the world. The attribution principle is exemplified also in the "nine dots" puzzle, an exercise included in the MBSR class handbook and in management classes, to illustrate how the usual ways of thinking and perceiving can prevent us from recognizing that solutions to some problems emerge only when we "think outside of the box." Many MBSR programs also use the old/young woman trompe l'oeil picture from Gestalt psychology figure/ground experiments as a way of helping participants recognize the unconscious and automatic processes at work in shaping the way we typically perceive the world. Similarly, the compassion generating exercises commonly included in MBSR, MBCT, and DBT (Birnie, Speca, & Carlson, 2010; Shapiro, Brown, & Biegel, 2007; Van Dam, Sheppard, Forsyth, & Earleywine, 2011) are another way of exposing, for some, the unrecognized judgment-related categories and negative affect they may hold toward their own self, or others.

In these ways, then, the training for both approaches can be said to promote a mode of functioning characterized by curiosity, recognition of preformed categories, appreciation of the novelty of every situation, and actively engaging in reconstructing the environment and stimulating new perspectives.

However, while the Western approach is said to involve the whole individual in the process of enquiry, the training focuses primarily on constructions of the intellect; fostering an intellectual curiousity about concepts being used and whether they are appropriate to the situation and challenging trainees to create new ones. The senses are employed in the service of stimulating the intellect. In the Eastern approach, trainees are similarly encouraged to be curious about old habits of attending and aware of the concepts shaping their perception, but the training exercises are more perceptually granular and direct attention to the sensory realm as an end in itself. Cultivating awareness of bodily sensations is foundational in the Eastern approach, including physical sensations unfiltered by conceptual categories. The body scan, for example, directs curiosity and attention toward bodily sensations, as sensations, throughout the body, especially those usually missed because of their subtlety or as a result of inattention to the body parts in which they are occurring. And even though both approaches encourage trainees not to lapse into daydreaming, the Western approach to training does not appear to give particular attention to cultivating awareness of when this has occurred.

Eastern instructions for developing the capacity to become aware of bodily sensations also include facility in redirecting attention to the sensations of breathing as an effective way of reducing arousal. In this respect, it is interesting to note that in the study of the nursing-home population referred to above, no differences were

background of discussions of clinical mindfulness. Cessation is the ultimate goal in the Buddhist system and comes through experiential recognition of the illusion of a permanent and unchanging self—the coalescing of experiential components comprising it are recognized as occurring in a more fundamental and unchanging field. This insight results from adherence to the prescribed eightfold system in which formal mindfulness practice plays an important role linking back to the "clear seeing" referred to in the traditional roots of mindfulness (Thera, 1992).

This cessation is, however, rarely the goal of trainees in clinical settings where mindfulness is introduced. Most patients are more interested in obtaining the situational relief from anxiety and depression that comes with the relatively limited amount of mindfulness practice recommended in the programs. This is illustrated in one of the few MBSR long-term follow-up studies (Kabat-Zinn, Lipworth, Burney, & Sellers, 1987) that found that the majority of participants did not maintain a regular meditation practice; the learned technique they used most frequently and found most helpful was the simple act of redirecting attention to the sensations of breathing at times of stress.

It may be that patients of certain temperaments will find one approach more attractive than the other. No doubt some people experience delight when engaging in challenging mental/conceptual activities characterized by Langer's and colleagues' training exercises, and through them learn to increase the opportunity for greater well-being. Such people may flee from an exercise like the body scan, finding it exquisitely uncomfortable or boring. For others, it is the realm of sensation that holds most delight; a realm that often becomes neglected in the process of socialization. For them, this rediscovery is a revelation and a comfort. They may find conceptualizations boring and diminishing of their delight, and fear becoming "lost in their heads." The different types do not often understand or appreciate the other, and although they can learn to appreciate the other better, and it sometimes becomes a source of enrichment, the fundamental difference remains.

In Conclusion

Eastern and Western approaches to clinical mindfulness programs appear to vary in their understandings of the construct. Training in each, however, results in improvements in well-being. Proponents of the Western approach contend that all mindfulness programs simply employ different means to get to a "there" that is the same for each. But without an agreed-upon criterion reference, the question of the conceptual independence of each, and which is the more "true" understanding of mindfulness, is unlikely to be resolved. The more general and clinically profitable question to ask is what if any are the therapeutic properties they may have in common. And since programs ask participants to attend to their experience in particular ways, this question can be approached by examining the instructions trainees are asked to follow in their everyday lives, delineating the qualities of attending the programs share, and considering the ways each approach can complement the other. This approach can result also in a better understanding of processes that are common across many mind–body training programs.

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4

From Early Buddhist Traditions to Western Psychological Science

Andrew Olendzki

From earliest times, human beings have inhabited two worlds, one external and material, the other internal and experiential. The first is well known, as our capacity for engaging with and changing the material world is everywhere evident, while a good accounting of the evolution of our inward-facing world is less apparent. It is written in the language of the arts: storytelling, poetry, music, dance, drama, myth, and all the many ways people have expressed what they see and think and feel inside. The history of mindfulness is one thread in this account of the human exploration of the subjective and experiential realm. Originating in the distant past as part of the contemplative practices of early Indian religiosity, mindfulness was developed by the Buddha and his followers into an effective tool for accessing, describing, understanding, and ultimately transforming the landscape of inner experience. In recent times it is having a profound impact on an array of modern and postmodern fields of inquiry, and in particular is contributing to a series of innovations in the fields of learning, health, and therapeutic psychology. At a time when our capacity for impacting our outer world is reaching unprecedented heights, mindfulness is emerging as an important tool for exploring our inner life with greater clarity and immediacy.

Ancient Origins

Consciousness itself, the ability to know or be aware of an object, is as old as the hills, in so far as the basic ability to process information can be accomplished by quite simple neural networks. Even relatively small bundles of neurons, connected to rudimentary sense receptors, are capable of "knowing" to avoid an object in one's path, that a particular sound is associated with a predator, or that a certain odor can be followed to locate food. To be conscious of that knowing, however, that is to have a sense of knowing that one knows and being able to take one's own inner experience as

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a deliberate object of awareness, is a matter of much greater complexity and may not have fully developed until the emergence of *Homo sapiens.* All early human cultures may be presumed to have explored deeply the interior dimensions of experience, for all describe rich mythic realms traveled by the shaman to gain knowledge from the inner reaches of the psyche. And while some sort of mental training would have been involved in the mastery of hunting skills, the systematic training of the mind in attention enhancement and concentration seems to have been of particular interest to the early inhabitants of the Indus and Ganges river valleys of North India.

Of the three major early civilizations that flourished 5000 years ago, along the Nile, Tigris/Euphrates, and Indus river systems, the Egyptian culture demonstrates a strong outward-facing focus. The sheer mass of stonework found in monuments, statuary, temples, and tombs is staggering, reflecting an apparent obsession with transforming and leaving a lasting mark upon the material environment. In remarkable contrast to this, the archeological remains of the Harappa civilization of the Indus watershed show very little concern for such outer changes, with uniform, utilitarian brickwork and almost no monumental structures, a corpus of terracotta goddess figurines that appear to be cobbled together for short-term use and then discarded, and an apparent lack of weaponry offset by a preponderance of toys and beads. What might account for such an apparent difference in cultural orientation? Humans appear to be equally capable worldwide, but different cultures define differently what matters are of greatest importance by inclining their attention and energy in particular ways. One hypothesis that can be offered to explain the striking differences between the material remains of these two civilizations is that perhaps early Indian culture was oriented more toward the inner dimension of human experience.

Hints that this might be the case come from both the archeological record and from a study of the unique elements of early Indian religious belief and practice. Small clay seals depict a human form seated in what to a modern observer seems a pose of yogic meditation; a lack of tombs or burial sites is consistent with a view of life recycling rather than of long-term survival after death; and the temporary nature of the goddess figurines suggests an emphasis on the experiential process of ritual rather than upon the sanctity of its representative objects. As we gain access to early Indian thought through the rich oral literature of the sixth and fifth centuries BCE, we find a whole complex of religious ideas and practices that are entirely different from what we are accustomed to seeing in the West, in so far as they emphasize the careful exploration of interior experience rather than populating the cosmos with gods. Consciousness itself is the sacred mystery, as it is directly experienced here and now. It is to be tamed by yogic disciplines, experimented upon using ascetic austerities, and observed empirically with meditation. Since none of these practices appear to have cognates from the same period in the West, it is not unwarranted to surmise they have their origins deep in the pre-Vedic indigenous Indian past (Reat, 1990).

Contemplative Practices

The Buddha, living squarely in the fifth century BCE, was already heir to a long tradition of meditation and mental training. Many of the *Upanishads* predate Buddhism,

and although extant manuscripts of Yoga, Sāmkya, and Jain teachings are later, they clearly have their roots in this earlier era as well. These indigenous traditions all diverge from the Vedic orthodoxy, itself imported from the West with the Aryan migration into North India in the late second millennium BCE, in several important ways. They are more concerned with the exploration of inner landscapes than of outer realms, and thus place greater emphasis on direct experience than on ritual communication with external deities. The stress is on phenomenology rather than ontology, that is to say exploring the textures of "that which appears" in experience is more significant than discerning "the reality" of what lies behind appearances. The goal is not communication with a greater other and transcendence of the human condition but rather the integration and optimization of experience in this world, this body, this moment. The question is not "How can I escape this world for something better?" but rather "How can I attain profound well-being right here and now, regardless of the conditions I encounter in this world?" The approach to religious practice is more empirical and experimental than mythical, and in the earlier stages of all these Indian traditions, there is very little mythical content amid the rich set of experiential practices.

Foundational among these practices was *yoga*, a word meaning "discipline" or the yoking of the mind and body to the will. Quite different from its popular modern forms, early yoga involved an integrated teaching around the purification of the mind from its numerous defilements and toxins. The mind is capable of great clarity and happiness but is occluded by mental and emotional habits that obstruct access to a natural font of well-being. Training involves ethical restraint, physical disciplines such as bodily postures, breath regulation, and bodily purification, and mental disciplines such as control of the senses, the cultivation of contentment, and the development of healthy psychological habits (Eliade, 1958/1990). Pre-eminently, yogic practice involved calming, unifying, and focusing the mind. Related spiritual practices centered on many different forms of asceticism, which were seen as a way of experimenting with consciousness. Activities such as holding the breath, retaining a single posture for great lengths of time, going without food, and even the voluntary exploration of pain all served to enable the first-hand observation of cause and effect. How is the manifestation of consciousness altered in each of these circumstances? What can be learned about the conditions supporting the arising and passing away of pleasure and pain? Just as a material substance can be investigated by heating it in a crucible and observing how it breaks apart into its constituent components, so too can consciousness be empirically investigated by bringing heat (*tapas*—the Sanskrit word for both heat and asceticism) to bear upon the mind and body and watching closely what happens.

Meditation is part of this religious movement, consisting of a disciplined and repeatable protocol for the systematic exploration of consciousness. By removing oneself from the everyday duties of secular life, simplifying the elements of one's daily routine, and sitting quietly in isolation for long periods of time, the ancient yogis (those whose minds are yoked to the examination of experience) learned how to substantially amplify the power of their minds. As we have discovered independently today, by simply keeping the mind focused on a single object, for example by repeating a single word without distraction, for as little as 20 min at a time, one is able to activate the parasympathetic nervous system and elicit a profound mental and physical

delusion were quenched (*nirvāna*) within him, and his mind attained a state of profound peace and well-being that was independent of external conditions. The event is depicted with ever-increasing mythic elaboration as the tradition matures, but underneath all the legendary material the earliest textual strata seems to speak of awakening in more modest terms, as the overcoming of inner obstacles, the purification of the mind from its psychological toxins, the healing of an illness, or the waking (*Buddha*) from slumber. More importantly, this awakening is said to be accessible to anyone in this lifetime who is willing and able to engage with a very demanding path of moral behavior, mental training, and deepening understanding. The Buddha spent the remaining 45 years of his life walking the breadth of the Ganges plain, sharing his understanding of how suffering manifests in human experience, how it may be healed through the cultivation of nonattachment, and inspiring a community of monks, nuns, and laypeople along a path leading to the cessation of suffering.

There are many ways the Buddha innovated the meditation traditions he inherited, and these have much to do with how mindfulness is understood and practiced today. To begin with, he seems to have augmented, if not invented, the meaning of mindfulness (*sati*), to the extent it became the centerpiece of his contemplative training. The term *sati*, which is based on a word for memory, may originally have referred to the state of mind needed to recall from memory vast tracts of oral literature when chanting. The mind must be concentrated, surely, but also open to the flow-through of information. Unlike the one-pointed focus of the earlier yogic meditations, mindfulness meditation involves being attentive to the stream of consciousness as it naturally arises and passes away in the mind. The emphasis shifts from the imperturbable depths of concentration to the agility of attending to one thing after another without getting distracted by, absorbed into, or attached to the objects of experience. While the ancient yogis were trying to attain altered states of mind through the attenuation of consciousness, Buddhist monks and nuns were trying to notice everything that was happening naturally throughout the day with a heightened acuity of awareness. At its root, mindfulness means keeping things in mind, staying present to what is happening, being able to know or be aware of one's experience with great clarity as it is happening. This requires a good deal of concentration but goes further by putting this focus into motion, as it were, to observe everything very carefully as it occurs.

Another way Buddha added to what he received from previous tradition was to situate mental training of all kinds between the pillars of two parallel enterprises: moral integrity on one hand and penetrative wisdom on the other. Meditation, in the Buddha's view, is never meant to be practiced in isolation or as an end in itself, but is imbedded in a foundation of ethical behavior and culminates with insight into knowing and seeing for oneself things as they actually are.

Mindfulness and Integrity

Early contemplative practices investigated the nature of consciousness directly and derived their knowledge primarily from empirical observation. This being the case, it is a remarkable insight that moral integrity is seen to be a natural property of the mind,

mind; and (2) only one state can manifest in the stream of consciousness at a time, so when a wholesome state is present, an unwholesome state is excluded (and vice versa; Ñānamoli & Bodhi, 1995, p. 208). In pointing out this way in which our minds work, the Buddha emphasizes the extent to which we all have a good deal of influence over what sort of person we become, by choosing ethically wholesome options at every opportunity and allowing unwholesome states to atrophy. This, too, is a significant expansion of mindfulness to cover all aspects of daily life, for the householder as well as the monastic.

Mindfulness and Wisdom

Just as mindfulness is rooted in mental integrity, so also it is meant to lead the way to wisdom. While the early yogis aspired to higher states of consciousness, the Buddhist meditator was after seeing directly into (*vipassanā*) the nature of experience and understanding its characteristics. Mindfulness is a tool for seeing things with enhanced presence and steadiness of gaze, but the work done by this tool is gaining insight into the way things are. It was understood that the mind is naturally beset with a distorted view of reality, in so far as meaning is constructed internally from the importation and interpretation of a vast array of data delivered to the mind by the senses, but the elements of the construction process can be seen directly, with wisdom, as they operate. As consciousness cognizes a sensory or mental object, perception interprets it, feeling assigns a corresponding hedonic valance to it, and volitional formations respond emotionally to it based upon existing behavioral traits and learned responses. Since all this happens again and again in moments of cognition that arise and pass away in rapid succession, it is customary and adaptive for the mind to conjure up and project onto experience such things as object constancy, narrative cohesion, and a more or less coherent sense of personal identity. The world of lived experience is a virtual world, in other words, and the early Buddhists recognized this by considering much of what we know to be under the influence of delusion.

Wisdom, which counteracts this delusion, involves overcoming the habitual misinterpretations that get us through the day, allowing our gaze to penetrate constructed appearances and see more subtle truths underlying common assumptions about ourselves and the world we inhabit. The first of these insights is into impermanence, the fact that nothing is stable, and all is fabricated. This is not questioning the stability of the external world, but refers to our own experience of the world. We are accustomed to using the word *world* to refer to what is "really out there," but Buddhists use it in the sense of us all living in the *world* of our own constructed experience, our own virtual reality. It is not an ontological question about what really exists, but an epistemological issue of how our knowledge is synthesized. Through consistent practice of mindfulness meditation, one gets beyond the mere idea that everything changes and gradually develops a direct, visceral appreciation of the radical contingency of all phenomena. This insight into experience, a sort of "phenomenological intelligence," serves to loosen attachment to what is wanted or not wanted and allows the mind to rest with equanimity in awareness of whatever is happening in the moment.

A second major breakthrough in understanding has to do with realizing the nature of suffering. Opening to what is uncomfortable, both physically and mentally, is an important first step away from the natural reflex to resist or ignore what is unpleasant and toward the acceptance without judgment of what is actually occurring in experience. With steady mindfulness, one can discern that all suffering is rooted, not in the nature of the object itself, but in our own response to the object. Just as stress is not an inherent property of anything existing in the outer world but is defined as an unhealthy internal response to an external influence (Kabat-Zinn, 1990), so also the Buddhists discriminate between pain, which is just a sensation of discomfort, and suffering as an emotional reaction to the pain. Suffering is thus something created in the mind and consists of an unskillful craving for pain to cease or for pleasure to persist. When one sees directly in one's own experience the way favoring and opposing all that is happening is itself the cause of suffering, one learns, too, that shifting or recontextualizing one's relationship to the objects of experience can result in the reduction and even cessation of suffering.

The signature Buddhist insight to which mindfulness practice leads is nonself. This is not to say that a self does not exist, but rather that it is as impermanent as everything else in nature and that its construction is rooted in the craving that causes suffering. The doctrine of nonself was a challenge to the Hindu sense of self (*ātman*), which was said to be ultimately real (*sat*), to consist of pure consciousness that needs no object (*cit*), and to be intrinsically blissful (*ānanda*). Each of these characterizations is undermined in the direct experience of moment-to-moment mindful awareness of the stream of consciousness as it unfolds in human experience. First, the substantiality of consciousness is refuted by seeing the relentless rise and fall of one moment of consciousness after another, each involving its own instantaneous birth and death. Permanence and constancy are ideas constructed as mental fictions to help bring some stability to experience, but do not hold up under direct phenomenological observation. Second, similarly, since consciousness is an emergent property dependent upon the senses and their objects rather than an independently existing entity, it is thoroughly contingent. Every moment of consciousness can be seen empirically as an event requiring the interaction of an organ (eye, ear, nose, tongue, body, mind) and a corresponding object (sights, sounds, smells, tastes, touches, thoughts). One is always aware *of* something (an object) *by means of* something (an organ), which renders consciousness itself, the six ways of knowing (seeing, hearing, smelling, tasting, touching, thinking), a naturally caused event rather than a transcendent reality. Third, the final claim of blissfulness is also more an idea than an experience, in so far as the feeling tones of pleasure and pain can be observed to arise dependent on conditions, and cease when those conditions change. When two sticks are rubbed together, heat is produced, but when the contact ceases the corresponding heat no longer occurs (Bodhi, 2000, p. 597). Sustained mindfulness practice will reveal that there is indeed a sense of self produced every moment when craving takes place, such that one has the sense of being a person who likes or does not like what is happening. But that self will vanish as soon as the moment passes away, is conditioned like everything else in the natural world, and will experience pleasure and pain in more or less equal proportions. This is a far cry from the transcendent spiritual essence the self is often assumed to be.

What Is Mindfulness?

Now that we have seen that the Buddha was heir to a rich contemplative tradition extending back centuries, and that he redirected the concentration practices of his era to be rooted in ethical integrity and to lead toward understanding experience in transformative ways, it remains to address the question of mindfulness itself. What exactly is happening in the mind of those meditators sitting immobile with legs crossed, back straight, and eyes hooded, with perhaps the hint of a smile on their faces? The Buddhist tradition possesses a sophisticated model of mind and body, and can actually answer this question with some precision (Olendzki, 2010, 2011). There are five different levels or modes of mental operation, each somewhat more complex than the previous as additional mental functions come in to play.

1 To begin with, all instances of coherent experience involve the interaction of many different systems and processes that co-occur in complex interdependence with one another. This is a model not of interconnected parts but of inter-related events. At its most basic level, all human experience is a flow of occurrences unfolding one after another with such rapidity that we normally engage with it at much higher levels of interpretation. A well-concentrated mind serves as a tool capable of zooming in below the threshold of ordinary awareness to reveal mental functioning more precisely. From this perspective, as we have seen, every moment of consciousness emerges from the interaction of a sense organ and a sense object, and involves an act of interpretive perception, a feeling tone on a spectrum between pleasure and pain, and some form of emotional and volitional response. In its simplest configuration, therefore, experience always consists of a single-pointed focus upon one of the six points of contact (five senses and the mind as sixth), along with the basic and universal mental functions of feeling, perception, intention, and attention. At this most rudimentary level of mental function, one is generally so embedded in experience that there is little or no metacognition. Although we are conscious enough to walk across a room without bumping in to anything, we are not really consciously aware of what we are doing much of the time—we just do it. This characterization of experience may well correlate with what has been identified as the default mode network of the brain (Raichle et al., 2001).
2 The sense of being consciously aware arises when additional mental systems become engaged, such as choosing where attention will be directed (as opposed to it merely responding to environmental stimuli) and choosing to hold the attention on a particular object. The ability to direct and sustain awareness on a chosen object contributes substantially to the sense of agency, and is our primary tool for problem solving and narrative construction. Conscious awareness is also augmented by qualities such as confidence, heightened energy, enthusiasm, and the initiation of bodily, verbal, or mental action. These more intentional mental functions come and go in experience depending on circumstances, interweaving with the less intentional default states, to yield a continuity of consciousness with both active and passive components. The second mode of mental functioning is this more active form when we have the sense of doing what we do deliberately, on purpose, or with conscious attention.

3 All this dynamic mental functioning is ethically neutral, but now moral valence enters the picture. According to Buddhist psychology, these mental factors are regularly augmented and modulated by either wholesome or unwholesome states of mind. When angry, hateful or greedy, for example, consciousness is colored by the additional factors of delusion and restlessness, and its inherent moral compass of conscience and respect for others is inhibited. Similar unwholesome emotional states such as conceit, avarice, envy, and cruelty take over the direction of the basic mental processes, and factors such as intention and attention are put to work causing suffering and creating harmful causes and effects (*karma*). These unhealthy states not only harm others by being enacted in behavior, but also lay down character traits in ourselves that cause difficulties downstream in the stream of consciousness as we inherit their detrimental effects in subsequent mind moments. Much of the difficulty we face as human beings, say the Buddhists, comes from this third mode of mental function, when the mind's activity is hijacked by toxic emotional patterns rooted in greed, hatred, and delusion. This is the cause of all suffering, from minor episodes of individual psychological discomfort to massive collective behaviors that destroy life and the living systems that support it. Although one can still direct attention deliberately, and one is capable of heightened concentration, there can be no true mindfulness when the mind is immersed in unwholesome states.

4 Fortunately, these unhealthy mental events are as episodic as everything else, and every ensuing mind moment holds an opportunity for change. The basic functions of the mind may also be pervaded and guided by wholesome emotional states, foremost of which is mindfulness, but loving kindness, compassion, and empathic joy are also examples of wholesome states. As an object is cognized by consciousness, it may also be regarded mindfully, which brings with it such states as confidence, equanimity, benevolence, and nonattachment, and which also preserves the full engagement with the innate ethical restraints of conscience and respect. Such moments are considered to be healthy, in the sense they contribute to clarity and point away from suffering, and skillful, in so far as they can be practiced and developed. Mindfulness is thus a mental *state* arising in the mind as a volitional attitude toward an object of experience that can be extended into *behavior* through acting, speaking, or thinking with equanimity, and can strengthen and develop as a personality *trait* through systematic practice. The reason mindfulness practice is considered so beneficial is that whenever mindfulness manifests in the mind as a state, unwholesome states are excluded from the mind stream, healthy behaviors are enacted, and wholesome traits are laid down and reinforced. The equanimity inherent in mindfulness avoids the twin errors of either reinforcing unwholesome states by embracing them and acting them out, or suppressing them with an aversive response, which may have a short-term benefit but will result in long-term difficulty. Mindfulness is a wholesome response that simply sees things as they are, without favoring or opposing, which allows for a radical nonattachment to all experience. Since craving and grasping are the primary causes of suffering, in the Buddhist analysis, learning to hold oneself in the midst of all experience with an attitude on nongrasping is inherently healing.

Among the historical factors that helped make meditation practices accessible in the West, in addition to the dislodging of Buddhist teachers from their indigenous settings by war and invasion, were reform movements within Burma, Thailand, and Sri Lanka. In Burma, Mahāsi Sayadaw and U Ba Khin led movements to make intensive meditation retreats, which were largely the province of monks, accessible to lay householders in great numbers. Retreat centers flourished, first in Burma and then in India and other countries, and lay in the path of wandering Western youths who learned the practices of insight meditation in Bodhgaya and elsewhere in Asia and brought them back to their homelands. In Thailand, a forest practice tradition developed alongside the mainstream state religion, and teachers like Ajahn Chah and Buddhadāsa were particularly welcoming of the foreigners who were making the rounds on their spiritual journeys. Sri Lanka became home to a whole generation of British and German scholar monks such as Bhikkhus Ñānamoli and Ñānaponika, and nuns such as Ayya Khema, who turned away from the conflicts of Europe in the middle of the century and found refuge in southern monasteries. So it is that mindfulness, which is present in all Buddhist schools but is most explicitly emphasized in the Theravada Buddhism of these countries, was poised by the end of the twentieth century to have a major impact upon the mainstream cultures of North America, Europe, and Australia.

Throughout its history, as Buddhism moved from country to country, it adapted to local custom in the short run and transformed local culture in the long run. When transferred from a more developed to a less developed civilization, the importation and embrace of the tradition by the receiving culture were near total; such is the case as Buddhism moved into Sri Lanka and Tibet from India and into Korea and Japan from China. When the transition is between more equal partners, as from India to China and, one might argue, from Asia in general to the West in general, it is a more gradual process that takes much longer to have a significant impact. It was centuries before Buddhism was well understood in China, and its influence on the West is only now being strongly felt, 200 years after first significant contact. A tipping point was reached when well-educated native Chinese understood that Buddhism offered something quite different from Taoism and Confucianism, and this is when uniquely Chinese forms such as Ch'an and Pure Land Buddhism emerged and took root. We may be reaching a similar point of quickening influence in the early years of the 21st century, as Buddhism gradually comes into view as preserving a unique and valuable perspective—an inner perspective—that has little counterpart in Indo-European or Judeo-Christian tradition. The emerging global civilization is unlikely to be converted *to* Buddhism, but almost surely will become significantly transformed *by* Buddhism.

While Buddhist ideas encountered and syncretized with Bon in Tibet, Shinto in Japan, and various forms of animism throughout Southeast Asian, the native traditions it engages with in America and the West include such things as science, materialism, psychology, romanticism, commercialism, and New Age thinking. It is inevitable that contemporary Buddhist understanding would be molded by these perspectives and that it would go through various stages of development in the process. Who knows how far along we are on this continuum, but it seems significant that the traditional Buddhist notion of mindfulness is entering mainstream discourse in at least two places. One is among the scientific community, which is engaged in an important new research agenda to study and understand consciousness. The other is among psychologists,

Kabat-Zinn began introducing meditation practices into medical settings in what has come to be known as mindfulness-based stress reduction. In both cases, the calming of the mind could be seen to have a direct influence on calming the body, which measurably increased the effectiveness of the immune system and contributed to other healthy effects. Now, it seems as if there is almost no field of human endeavor that would not benefit from meditation. Mindfulness training is being introduced to a host of secular settings such as hospitals, schools, and prisons, and is being applied to a wide array of activities such as caregiving, recovery, conflict resolution, sports, and performance enhancement generally. Mindfulness also seems to be a key component in the many forms of positive psychology that are steering the field away from its medical roots and extending into an open-ended exploration of human flourishing.

As a tool for psychological healing, mindfulness has been having an impact on a number of new treatment modalities that have emerged in recent decades, such as cognitive-behavioral therapies, acceptance and commitment therapy, dialectical-behavioral therapy, and others (Germer, Siegel, & Fulton, 2005). What these approaches have in common is a tendency to view the mind as a series of interdependent processes rather than as the interaction of structures, and a belief that mental health is augmented by allowing the flow-through of experience rather than trying to inhibit, resist, or mold it in a particular way. Traditional Buddhist insights that stem from mindfulness practice, such as seeing the impermanence, the interdependence, and the impersonality of mental events, can be brought to bear on dysfunctional mental habits and disorders. For example, learning to trust that various mental states will naturally arise under certain conditions, but that they will just as naturally pass away when those conditions change, can be of immense help to those struggling with anxieties, compulsions, addictions, or related uncomfortable and unwelcome mind states. Similarly, learning to see arisen mental states as not belonging to or defining a particular construction of self can help one who is caught in identifying with their depression, is afflicted by past trauma, or is learning to cope with a new disability. Learning to face mindfully the textures of chronic pain or emotional distress rather than avoid them with fear can help one see that while pain might be an inevitable component of human existence, the suffering it gives rise to can be modulated by a range of more skillful emotional responses. In particular, understanding the self to be a contingent fabrication that takes different forms under changing circumstances, rather than being a fixed entity with fixed characteristics, can help anyone gain comfort and empowerment in any difficult situation. Mindfulness helps us release our grasp on conceptual definitions of ourselves that may have been built up over years from habit and conditioning, and open to the freedom of recreating ourselves anew each moment.

With its roots in ancient India and its branches now spreading their leaves throughout our world, it remains to be seen what fruits will ripen on this tree of mindfulness. It is remarkable that we even have access to the contemplative arts of our distant ancestors, and we owe a debt of gratitude to the many generations who have kept this lore alive over so many centuries. The inner knowledge accessed by the investigation of our own experience promises to complete us as human beings, uniting the interior and exterior aspects of our nature in ways that have not been possible until now. Our future well-being may well depend upon our ability to understand and transform ourselves at least as well as we do the world around us.

Mindfulness and Mindlessness

All that has been said so far has focused upon mindfulness as an element of the Buddhist meditation tradition. The term mindfulness has also been applied to a field of psychological and social science research that studies the beneficial effects of attention in general, and to heightened attention in particular, and applies these benefits to fields such as education. Ellen Langer has been a pioneer in this field who began by studying various forms of what she has called mindlessness (Langer, 1989). It was illuminating to reveal the extent to which normal human functioning takes place with little deliberate attention, and how much of what people do each day is governed by unconscious decision-making and the passive response to cues. A considerable body of research has documented the scope of this lack of conscious attention in numerous contexts, and points to its detrimental effects upon a range of endeavors. The reversal of this phenomenon calls for mindfulness, used in this context to indicate a state of greater consciousness, heightened awareness, and more developed powers of attention and creativity. This maps on to the five-part model described above as primarily emphasizing the differences between the first and second level of functioning, namely when we are not paying attention and when we are. When functioning within the rudimentary default mode network, much of what we think is habitual and unexamined, and most of what we do is automatic and reflexive. While calling this mindlessness might be an overstatement, we are certainly working with less than our full complement of mental faculties. When attention is deliberately aroused, directed, placed, and sustained, things are very different, and Langer and colleagues have done much to dramatically demonstrate this contrast and present the benefits of heightened awareness.

Mindfulness as a concept in social psychology differs from Buddhist mindfulness in several ways. One difference is that social scientists stay firmly in the realm of conceptual thinking, using the term mindfulness to refer to ways of sharpening and even augmenting the use of what in Buddhism are called "mental objects," while in more traditional Buddhist practices mindfulness training is more apt to pull attention away from the "mind door" and place it more fully on the data presenting at the "sense doors." While Buddhists are largely trying to neutralize the symbolic narrative of the mind, social scientists are often trying to augment and improve it. Another contrast is the ethically neutral stance of so much scientific inquiry, compared to the fundamental role of ethics in early Buddhist mental training. Mindfulness in Buddhist practice is not meant to increase the efficiency of the mind as much as to help transform its quality, and that quality is measured on a scale of ethical wholesomeness and unwholesomeness. Learning to see how much harm comes from mindless behavior is indeed beneficial, but issues of ethical integrity do not lie at the heart of the social scientific study of mindfulness as they do in the Buddhist tradition.

A third difference between the two uses of the word mindfulness has to do with the role of equanimity. As the term is defined above in the Buddhist context, the presence of equanimity as a mental state in the mind at the moment of cognizing an object is a crucial part of the definition of mindfulness. One is always attentive to something, when consciously directed attention is heightened and intentionally wielded, but it is only when coupled with equanimity—neither favoring nor opposing what one sees, hears, touches, or thinks—that attention evolves into mindfulness. This

distinction is entirely lacking in the social scientific sense of the word, although the benefits of keeping an open mind and the nonattachment to pre-existing views are clearly recognized.

Despite these distinctions, there are also similarities. Both senses of the term share the goal of steering human experience in healthier directions, and both are involved with enhancing bottom-up processing in the brain. Part of what we experience comes into the mind from the senses, but this is heavily mediated and interpreted by top-down processes that impose assumptions upon incoming data and modify experience in ways that are comfortable and familiar. As Langer has demonstrated well, a person's established views and assumptions, called by her their "mindset," impose themselves upon incoming data and greatly narrow the possible range of interpretation and response. Recognizing that this is happening, and working to soften the pre-existing contexts and strengthen the freshness of new information, is something that both forms of mindfulness have in common. Both approaches, too, are working to enhance human flourishing, and thus share a natural affinity. It is likely that the two fields will continue to inform and expand one another as interest in mindfulness continues to grow.

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5

Mindfulness Meditation from the Eastern Inner Science Tradition

Carin Muhr and Lene Handberg

Introduction

Based on the work of Buddhist scholars from Nalanda University such as Vasubandhu (fifth century AD), Kamalaśīla, (c. AD 740–796) and Atiśa (c. AD 982–1054) traditional Mindfulness training is presented herein from the point of view of the interrelatedness of phenomenal reality called Pratītyasamutpāda (Sanskrit), *tendrel* (Tibetan), or "unity in duality" (UD),[1] as taught by the Tibetan scholar, Tarab Tulku (1935–2004).[2] This view examines the interrelated nature of reality using a polar framework of "subject–object," "body–mind," and "energy–matter" that will be expounded below together with an analysis and investigation of perception on gross as well as subtle levels.

Mindfulness, as used above and when capitalized herein, refers to the Nalanda University related traditional Buddhist spiritual discipline of "the four mindfulness meditations"[3] (of body, feeling, mind, and phenomena), which is a meditative investigation into the nature of reality that helps the practitioner to realize the nature of reality and the attainment of spiritual goals. In this work, we briefly explain these traditional practices, aims, and viewpoint, and explore ways in which these methods can be applied in ordinary circumstances to improve psychological and general health.

In the first part of this chapter, we will discuss some of the main theorems underlying Eastern inner science[4] (EIS) and traditional Mindfulness training in particular. We will also define terms and discuss the distinctions made between the gross material body and the subtle body, the body–mind and subject–object poles in the context of traditional Mindfulness meditation and UD. UD, as a term used herein, is synonymous with the term "tendrel," as defined in note 1, and refers to the general view (and established education based on this view) that despite the appearance of separation, all phenomenal existents are interrelated and interdependent, and as such exist in both unity and duality.

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practice of Mindfulness meditation and the contemplation and cultivation of attention on mental and sensory phenomena.

Terms of analysis 1: Subject–object, mind–body, energy–matter Mindfulness practice utilizes a set of representative polar terms with which one can analyze the nature of experience and existence. Three polar terms are employed by Tarab Tulku to help illuminate the nature of our apprehension of reality (Tarab Tulku, 2002, 2006; Tarab Tulku & Handberg, 2005):

1 Subject–object: The subject-pole refers to the mind that perceives, and the object pole refers to the phenomena appearing to the perceiving mind. It is important to note here that the object pole does not refer to an external object but refers only to the phenomena appearing to the mind. The term also refers to the interrelationship between the subject–object poles, as they are mutually dependent and do not actually exist separately. On a deeper level of analysis, the subject refers to the body and mind of the perceiver, and the object is whatever actually exists and is showing properties or characteristics according to the way it is approached or perceived (i.e., through the body and mind). On this level of analysis, we call the object the *referential object* to refer to the nature or characteristic of the reality beyond our perception rather than the discrete object as ordinarily taken to mind through the senses and cognitive faculties. Similarly, we refer to the whole of reality (as it exists beyond our perceptive faculties) as *referential reality*. The subject and "referential object" are also interrelated, although in a different way than in ordinary perception. This idea is further elucidated herein (but briefly, as it is somewhat beyond the scope of this work) and particularly in the sections on the third and fourth mindfulness meditations.
2 Body–mind: Mind and body are interdependent. Without mind, the body does not function, and vice versa. The body, and its senses in particular, limits what and how phenomena can be perceived. In this tradition, a distinction is made regarding the body where it is physical in one aspect and energy in another; for example, the *subtle body* (defined further below), like the body in our dreams, is not a physical body but functions in similar ways.
3 Energy–matter: Energy in this sense refers to the very subtle nature of reality, well beyond the perceptions of ordinary minds, which, according to EIS, is the non-substantial potential field from which reality formation occurs and exists as matter (unfolded nature). Energy is considered as the enfolded order of reality and matter as the unfolded order. EIS holds that energy and matter are interrelated and in a dynamic flux at any given moment. However, although briefly discussed in the sections on the third and fourth mindfulness meditations, this polar relationship and its analytical use for radical transformation are beyond the scope of this chapter.

According to Tarab Tulku, these polarities are mutually dependent and have both dual and unified characteristics (Tarab Tulku, 2006). Because we experience the mind perceiving an object and the object as separate things, we can easily grasp the dual nature of the subject–object poles. Nevertheless, the perceiving mind and the object perceived arise in dependence upon each other and are therefore not separate entities

their subtle body and mind in manifest referential reality. Such experiences are held to be real in the sense that they are not imagined or necessarily private.

Subtle bodies and minds of the sort discussed above are the rare result of extensive spiritually based body–mind training and proceed in stages where the practitioner gains awareness of ever-more subtle aspects of body, mind, and reality. The early stages of such training are focused on balancing and stabilizing the mind in ways and with aims that are different from, but not entirely unlike, those of modern psychology.

UD has adapted these methods of training and applies them to more ordinary aims such as personal development and psychological health. In this regard, we introduce the term *imagery-body*, which is akin to subtle body but at a much less elevated level. At the most basic level, the imagery-body is the same as that used by athletes and artists, for example when a gymnast or musician mentally rehearses the physical movements of their craft. This technique is also used in modern psychotherapy and called by different names such as guided practice, embodied imagination, and so on. But at this level, the imagery-body is still a private experience. At more advanced levels of imagery-body, we can begin to experience the commons of manifest referential reality at more subtle levels than available through the physical senses and ordinary capacities of the sixth mind. These distinctions will become clearer as we proceed.

In the remaining part of this section, we continue to use the term subtle body, but it should be considered that the term imagery-body applies generally and analogously to the discussion as well.

EIS asserts that the mind and body, experienced at any level from the gross physical to very subtle, are mutually dependent, interrelated phenomena and that the mind always has an embodiment of some kind as the basis for experience. EIS further posits the subtle body and mind as real and concurrent with subtle realities. Mindfulness training and UD cultivate awareness based on subtle embodiments, and concurrently develop more subtle mental capacities, albeit at different levels, but in the early stages they are similar. The subtle embodiments allow for a more extensive and less projective (e.g., in the sense of conceptual interpretation) experience of reality.

The ordinary activities of mind arise on a *momentary* basis and operate through the capacities of the five sense minds and/or aspects of the sixth mind[8] (conceptual, feeling, image minds, and subtle body senses). None of these minds can directly experience another mind's domain. Each sense mind's way of experiencing is unique, as are each of the aspects of the sixth mind; for example, the conceptual mind can only experience words and ideas, or *conceptual reality*, which is not accessible by any other types of mind. While functioning uniquely, all of the minds influence experience, particularly that of the three sixth minds, and more so when we are conceptually or emotionally dominated.

Normally, according to EIS, in the waking state we experience sense reality by means of the sense minds. The mind experiences phenomena through the physical body's five senses, becoming the respective five sense minds. According to EIS, no mind is waiting to experience but arises momentarily when the right conditions are present, in this case, when there are functional senses and referential object of the respective sense mind. Also that means that the individual sense mind and the referential sense object arise simultaneously.

The sixth mind has three parts, of which, one, the conceptual mind, operates through means that are *indirect* inasmuch as it abstracts and uses language as the basis for perceiving/cognizing/experiencing the object. The other parts, the feeling and image minds, provide *direct* means to experience phenomena, because they don't use abstraction and language for perception and therefore cannot add or delete anything. These three minds and the subtle bodies are outlined below. The subtle bodies are included here because their nature is not based on the physical body, and they are thus considered part of the sixth mind.

1 Sixth mind: Tarab Tulku explicitly categorizes the sixth mind into three types of mind that are important for explaining the dynamics of mind, and which he holds to be implicit in the Sutras and Tantras.[9]
2 The *conceptual mind*[10] experiences only by means of naming and language, and thereby generates a dynamic, momentary, abstract, and generalized experience of reality.
3 *Image mind* provides the three-dimensional experience of form and space. For example, visual and aural sensory information gives us mental images of the spatial characteristics of phenomena such as distance and dimension, like visual images of objects such as a chair or table, and aural images provide spatial characteristics of place and distance. The image mind operates momentarily through its perceptive capacities, giving us a dynamic field of image reality.
4 The *feeling mind*[11] provides, for instance, the basic evaluative feeling experience as supportive, neutral, or negative regarding the continuation of existence, and on this basis we conceptually make further judgments and evaluations, and take actions accordingly. Feeling in this context does not refer to the language labels we ordinarily apply to our feelings; that is the role of the conceptual mind. The feeling mind, while able to experience qualities of feeling (e.g., intuition, instinct, empathy, emotion, feeling-tone, self-referential feeling, deep meditative states), is not capable of labeling its object. In this sense, the feeling mind is characterized by touching and uniting with its object, subject and object poles being inseparably together (e.g., the feeling of the feeling mind is feeling)—it provides a unified way of experiencing. The feeling mind operates momentarily and is unique because it is the only mind that is naturally unifying.

When conceptually and emotionally dominated, the experience of the image mind is specifically responsive to what the conceptual mind names, and on this basis the feeling mind gives rise to experiences of emotions, happiness, and so on. To a high degree, our normal human experience in modern cultures is based on the perceptions of the conceptual mind, which is dependent on sense minds, which is again dependent upon the physical body's sense organs. Experience is thus strongly connected with the conceptual mind and the physical body.

The conceptual mind is by nature selective in its capacity to render phenomena empirically or experientially. Only that which is named becomes part of the conceptual reality. It is because of the abstraction, generalization, and selectivity of language that the conceptual mind enables us to compare and analyze phenomena, by naming

only particulars of interest to represent the whole of an object (the rest staying conceptually unnoticed). The conceptual cognitive capacity naturally and subconsciously screens out the particulars it doesn't name. It can also add information to the perception of sense reality such as ideas about ownership, intention, causation, quality, value, and so on by force of habit, acculturation, education, and past experience, and so on. The conceptual mind can also recall the past and predict future events. Because the conceptual mind is limited to interpreting the selected sense data, rather than experiencing them directly and completely in their interrelated complexity, it has no inherent capacity to directly experience sense reality or to have any other direct experience of reality.

According to EIS, it is possible to experience phenomena without engaging the conceptual mind, in other words, without naming or thinking about that which we perceive, though this way of experiencing is very different and unconventional compared with normal conceptual experience. Where the experience of conceptual mind is considered a generalization and abstraction of sensory and other experiences, and therefore indirect, the feeling and image categories of sixth mind are seen as direct experience[12] (inasmuch as they do not use language).

The three types of sixth mind represent specific ways in which we experience reality, and two of these correspond with the sense fields. The body sense, and senses of taste and smell (subject and object poles being naturally unified), are in this manner similar to the *feeling* mind, and seeing and hearing (perceiving image, space, and dimension) are similar to the *image* mind of experiencing form and spatial relations.

Because the feeling and image minds perceive directly, their experience is contemporaneous with whatever is presented to them. Nevertheless, while the experience of the feeling and image minds may be direct and in the present moment, it should be noted that we cannot absolutely and directly experience the "referential object" with any type of mind.[13] This is because all minds have limited and specific perceptual faculties, which, in meeting with the referential object, determine the way reality appears. This counts equally for direct and indirect ways of experiencing.

Furthermore, it should be mentioned that the five sense minds (subject poles) and their respective objects (object poles) are seen as being interrelated and separate from each other, with no overlapping perception. The five sense minds and the three sixth minds all independently perceive their object. Each mind has a subject and object pole, as these are inherent in the nature of perception. These minds are interrelated, but there is no overlapping perception or sharing of one mind's object pole with another mind.

For example, the eye sense mind perceives an object, let's say the form and color of a bird, and the hearing mind perceives its object, the sound of a bird's song, at the same time. The ear and the eye senses perceive independently of each other with no overlap. Like the five sense minds, the conceptual, feeling, and image minds are respectively interrelated but with no overlapping perception. All the minds are interrelated, which may lead to the composite experience of a "beautiful singing bird," but this experience is a product of the interrelationship and cooperation of perceived phenomena.

EIS distinguishes different subtleties of body and mind. On the most apparent level, that of conceptual mind and the gross physical body, we have the least subtle and most common and dominant of all body–mind experiences. Through traditional

Mindfulness practices, a subtle body–mind basis for experience is cultivated. The subtle body and mind have the basis of the sixth mind. EIS states that with the subtle mind and body, we have the capacity to experience subtleties of referential reality. The ability to use subtle body and mind requires special training and practice, and, once accomplished, the experience of referential reality becomes deeper and more extensive. An adept experiences reality according to the subtlety of the body and mind they have engaged. Just as in ordinary dreams, although in this case the experience is veridical, the dimensions of time and space may open up (at random or upon mastering this body–mind), and aspects of body and mind such as intuition, perception, and freedom of movement are greatly enhanced.

All of the minds discussed, for those who are mindful of them, give very different experiences of reality. While we conventionally do not pay close attention to anything but the conceptual mind, with greater awareness our experience of reality could be very different and much deeper and broader than ordinarily experienced.

Traditional Mindfulness and UD Mindfulness for Physical and Mental Health and Traditional Mindfulness and UD Mindfulness for Spiritual Ends

The body–mind basis for traditional Mindfulness

The achievement of Śamatha meditation practice is a prerequisite for practice of the four Mindfulness meditations. Śamatha is a type of meditation practice that implies a shift from conceptual dominance to the dominance of the directly perceiving minds, and it also implies a shift to a more subtle body base. The practice and attainments of Śamatha are beyond the scope of this chapter; however the preliminary result of this practice is a stable and calm mind. The practitioner trains to focus on an object without effort or distraction from random thoughts, memories, disturbing emotions, sleepiness, and so on—as long as one wishes. This ability is often referred to as one-pointed concentration.

On the basis of this first part of Śamatha attainment, training in visualizing and mastery of the first level of subtle body–mind and the subtle sight mind in particular can begin. Visualization, which implies the use of the subtle body visual sense mind to see, provides a method for training in using the subtle body, for instance in connection with the Mindfulness investigations, to experiencing the nature of increasingly deeper levels of reality.

In Śamatha attainment:

1 there is the ability in particular to use the first level of the subtle body's eye-sense mind with the same acuity as that of the physical eye-sense mind resulting in very clear visualizations;
2 one-pointed concentration is the ability to stay with the visualization or feeling mind object for as long as one wishes.

These two points make the Traditional Mindfulness Meditations a "high practice."

and the object of investigation using feeling-mind and image-mind on the basis of the imagery-body.

Using direct (nonlanguage) experience and awareness enables one to stay in contact with the causal and ever-changing-phenomenal-nature of reality, beyond language selection and fixation, providing a complete experience with all the particulars available (within the range and limitations of the particular body basis and perceptive faculty used).

Conceptual reality doesn't follow the changing process of the "referential reality"; it is a fixated reality, as its object is of an abstracted and generalized nature. For changing ideas, we conceptually rely on changing the words one by one, making up a different conceptual reality, which again is fixating reality in a new idea—in this way, it can of course address ever-changing reality, but only in general terms. However, rather than being the dominant mode of perception, on the basis of imagery-body and directly perceiving image and feeling realities, the conceptual mind is used in cooperation with the other types of mind and becomes a more subtle[16] and very useful tool for investigation and realization, letting us stay in contact with the direct experience of the object under investigation.

Unity of semi-Śamatha and semi-Vipassanā: UD mindfulness meditation merging with the realization of the object of investigation When, through investigative mindfulness meditation, as described above, we reach a certain level of accomplishment or realization in connection with the nature of the object under investigation, we merge or unite with this realization of the nature of the object of investigation. This is, in a sense, a collapse of the subject–object dichotomy and is accomplished using imagery-body and feeling mind experience. We stay merged with the realization of the object's nature, as long as we wish, assimilating the realization.

The four Mindfulness meditations and UD mindfulness

According to Vasubandhu, the four Mindfulness meditations are as follows:

- Mindfulness of body;[17]
- Mindfulness of feeling-tone;[18]
- Mindfulness of mind;[19]
- Mindfulness of phenomena.[20]

In the text (Abidharmakosabhasyam, 1988), it says: "You have to find the general and special characteristics of 'body,' 'feeling,' 'mind' and 'phenomena'." With "characteristics," they point to the specific nature of the subject-poles, the object-poles, and the referential object. Thus, the investigative field of the four Mindfulness practices encompasses investigation into the nature of all existence, first on the level of the conventional or ordinary experience of reality and then on deeper and more fundamental levels of reality, which is unconventional and extraordinary.

From a UD point of view, for personal growth and therapy, the most important aspects of these investigative methods pertain to developing an understanding of how

experience has the power to counteract the conceptual mind's tendency to grasp and hold its perceptions by making available other particulars from the sense field that were previously excluded from the conceptual reality.

This is particularly important for personal development and psychotherapy. Vulnerable self-references like feelings of persecution, inferiority, or insecurity, and habitual fixations of conceptual reality, such as prejudices, cultural taboos, and phobias, tend to engender distressful mental experiences. These tendencies, helped by the conceptual mind, are normally mildly dissociative in the sense that they represent a disconnection from or loss of direct perception by the senses and are thereby unique to the perceiving individual. They are not generally shared by others, nor are they part of common human experience. These conceptual realities, while they appear real to the perceiver, never become reality for the senses. So, to come back to the sense experience is a great and perhaps necessary means to reconnect to reality and undercut illusory and destructive mental tendencies.

This practice of connecting to the sense minds also helps one to recover from destructive conceptual perceptions of self. Coming back to one's senses, especially at a deeper level, helps to overcome the gap between a grounded sense of self and the conceptual idea of self; it builds a sense of inner strength and self-presence, and undercuts the dissociative tendencies that naturally arise due to domination of the conceptual mind. Without these mitigating factors, the negative tendencies of the conceptual mind would cause or exacerbate stress and stress-related psychosomatic conditions. By practicing this method, one recovers a firm and stable ground of being and an increased sense of self-worth and self-confidence.

All of these mitigating factors help to reduce the experience of existential fear—fear of destruction of that which is conceptually identified as self. Such existential fear is basic to all negative emotions. Cultivating ordinary body sense and imagery-body sense and making this the self-referential basis of experience, rather than just the conceptual idea of oneself, help one to reduce and eventually eliminate the habit of engaging with destructive emotions.[23]

Western culture and philosophy have placed much emphasis on reason, rationality, and logic in investigations of reality, almost exclusively through the use of conceptual thinking and an objective analysis of external phenomena. While this approach has made significant contributions to human understanding, relatively little attention has been focused on the inner nature of mind, body, experience, and the interrelated perception of reality, which is so fundamental to the approach found in EIS and UD and which is much more common in Eastern cultures. In modern times, with the media's relentless cultural dissemination and emphasis on individualism, materialism, and consumption, many people in the West (and increasingly those in the East) have largely lost touch with the body sense as the basis for a common human experience of reality. Due to the dominance of the conceptual mind, its view of reality fails to connect with common human perception of reality or to recognize the interrelatedness of phenomena, especially that of the mind, body, and reality. Because many people in modern cultures are not being united with direct experience of body sensations, they are showing early symptoms of dissociative or more severe disorders, which cause people to become sensitive and easily vulnerable, as supported by current research in this area (D. J. Siegel, 2010a).

Since all human beings have the same kind of senses and therefore sense experience (unless these are impaired), the sense reality is our common ground of reference. Seen from a personal development or psychotherapeutic perspective, it is strongly empowering for the individual to recognize this and to develop a common referential ground using the two levels of body sense and any other type of direct sensing. By developing a stronger connection to direct sense perception, one is better able to intuit the sensations of others and in conversation to better understand what they mean, a condition that would help to prevent many misunderstandings.

In UD, it is recommended that the practice of experiencing and connecting with the ordinary somatic body sense or imagery-body sense be conducted daily through meditation and/or by being generally mindful throughout the day when doing routine activities such as exercising, bathing, martial arts, and so on. Most important is that the mind is brought back into being aware of the body sense experience, preferably many times each day (and ultimately to maintain this awareness throughout the day), which will make one feel grounded, safe, and at home within.

Points of investigation in UD mindfulness meditation on body sense mind/reality:

- Do the sense minds experience past, present, or future?
- Can we have sense experience without using language?
- Do the sense minds pick and choose what they perceive or experience, of what is reflected within their range and respective perceptual fields?
- Do the sense experiences make available a shared, cross-cultural reality?
- Could the body sense counteract dissociative tendencies?
- Can the sense minds, especially body sense, counteract a narrow conceptually named field, especially when we are emotionally distressed or just stressed, and thereby bring us into a less projective and emotionally distressful condition?
- Would grounding by means of body sensing diminish fear?
- Does body sense open intuitive feeling when in contact with others?
- Do we have a deeper level of body sense through which we can contact a deeper inner strength in ourselves?

Special points of investigation—when firmly rooted in body sense mind/reality Normally, we consider sense reality to exist "out there," independent of the senses, but the view of UD, resting on the shoulders of EIS, tells us that this is not so. If our senses were constructed differently, our sense reality would likewise be different, as is the case for other species. On this basis, we can consider the extent to which sense experience is based on the perceptual capacity of our senses, and therefore is internally determined, rather than as a direct experience of phenomena as they conventionally appear to exist "out there."

For spiritual development, the relational nature of the sense field becomes very interesting and necessary to realize in order to go beyond the physical body and the sense realm, and to enter the deeper fields of existence, the spiritual realm.

Therefore, for advanced practitioners, who are firmly rooted in body–mind as the basis for investigation, and *for no one else*, the interrelation between the subject-pole and the object-pole of the sense realm could be investigated to determine whether the object-pole exists in and of itself on the outside.

Advantages found in UD mindfulness meditation on physical body sense mind/reality—on the basis of achieved equality between body sensing and conceptual perception:

- concordance with the common human basis (sense minds) of reality;
- connecting directly to the body sense brings awareness into the present and relieves stress;
- enhancing one's ability for clear, nonprojective communication;
- increased intuitive ability with self and others;
- decreased restlessness and existential fear;
- greater ability to deal more appropriately with difficult situations;
- reduced dissociative tendencies and related stress;
- reduction of habitual engagement with destructive emotions (fear, etc.) and related stress;
- supporting greater self-confidence and self-worth;
- increased capability for natural somatic healing.

Second Mindfulness: UD mindfulness on "feeling-tone" and corresponding "phenomena"

The next Mindfulness Meditation deals with feeling-tone.[24] According to UD, any living entity in existence has basic evaluative feeling-tone[25]—not just humans and animals, even plants—based on attraction to that which feels as though it is sustaining the continuation of the entity's existence and rejection or avoidance of that which feels that it could hinder continuation. Evaluative feeling-tone is the initial stage of our actions in life—the feeling-tone is fundamental to action. Without evaluative feeling-tone or feeling in general, there would be no incentive to act.

According to EIS, the subtle, evaluative feeling-tone is always present with any mental experience. Connecting to the feeling-tone of mind means to connect with the sixth mind on a deeper and quieter level with an expanded feeling of oneself. Through this experience, it's possible to have a basic and united feeling of body and mind as well as of subject and object and at the same time a feeling of not being so separate from others.

Based on the sensations of the body and bringing awareness to the feeling-tone of mind helps to overcome the gap between the conceptual ideas of self and simply feeling oneself from inside. There are many levels of this unification, each level bringing one into deeper and stronger contact with one's inner feeling of being present.

Points of investigation in UD mindfulness meditation on feeling-tone/reality:

- Is there something that could be recognized as feeling-tone?
- Do we have evaluative feeling-tone in connection with any perception by either of the five sense minds and sixth minds?
- Is feeling-tone basic to what we choose to name conceptually and does it therefore become an important determining factor for our formation of reality and action?

- Does contacting basic feeling-tone one-pointedly counteract fear?
- Does contacting feeling tone counteract feelings of isolation and loneliness?

Advantages found in UD mindfulness meditation on feeling-tone/phenomena Reuniting through feeling-tone with oneself and others, counteracting the gap between the conceptual ideas of self and simply feeling oneself from inside:

- gives the individual a way to feel "at home" and safe;
- counteracts disassociation;
- gives a feeling of expansion, incorporating others, and counteracts feelings of loneliness, separation, and isolation;
- increases confidence about one's feelings making one less vulnerable to doubt and manipulation;
- counteracts the gap between the conceptual ideas of self and simply feeling oneself from inside.

Third Mindfulness: UD mindfulness of "mind"[26] and corresponding "phenomena"

In EIS, mind is categorized into the five sense minds and the sixth mind, as already mentioned. The sense minds have been discussed, so here we have three types of sixth mind according to Tarab Tulku's tripartation into conceptual mind, image mind, and feeling mind.

UD mindfulness investigation on mind—in regard to conceptual mind and corresponding conceptual phenomena/conceptual reality

EIS philosophers, realizing the interrelated nature of phenomena,[27] have not investigated mind (subject-pole) without also investigating its object (object-pole) and vice versa. And because realization of these interrelationships is valuable for health and relations with others, these are investigated here, too.

Dignaga (AD 480–540) and Dharmakirti (AD 650), the latter presenting Dignaga's Pramãña work in a more understandable way, was the first to comprise and systematize Buddhist logic, rejecting the prevailing theory by claiming that the conceptual mind cannot directly perceive sense-reality. The conceptual mind can only perceive indirectly by means of the nonaffirmative generalization,[28] literally translated as "exclusion from the other." In other words, the conceptual mind perceives by means of a "general differentiation of similars and dissimilars in one go," mirroring the naturally inherent differentiation of similars and dissimilars[29] in regard to the sense object. This means that the conceptual mind's object-pole is based only on the labels projected onto the object in question, giving an affirmative perception and thus achieving the abstraction and isolation of the perceived object. This way of perceiving is very different from that of the senses.

A consequence of the conceptual mind's unconscious screening out of everything except that which is selected and named, thereby isolating its object, is great flexibility

"complete idea" based on other chosen and named points of reference. In other words, this recognition leaves us with the great prospect of a highly flexible mind that is able to counteract the closed mindedness inherent with an overly dominant conceptual mind. This knowledge is already being used to a certain degree within counseling and psychotherapy today, as within the different types of therapeutic mindfulness practices. It should be further emphasized that, in accordance with EIS and UD, the conceptual mind has no direct[31] means to distinguish between the conceptual reality and the sense reality, as the sense reality is not within its field of experience.

When the conceptual field overly dominates our sense field and thereby limits our ability to differentiate and generate a complete experience, our capacity for reality determination is severely narrowed, and this can have other important implications for how our reality formations are determined. For example, such limitation makes us much more easily manipulated, giving unnecessary influence to television, newspapers, the advertising industry, or our own preconceived ideas about who we are and what we can and cannot do, or to such vulnerable notions that other people are in some unrealistic way against us. An overly dominant conceptual mind narrows and limits our ability to perceive reality and gives too much access and power to these and other forms of reality determination.

But most importantly, while we often believe that we are using the sense minds, we are usually relying on conceptually and selectively formed descriptions of what has appeared to the senses. We thereby impair our natural ability to get our feet on the ground, to counteract or compensate the conceptual mind's natural selectivity, when things are "getting out of hand" or "driving us out of our minds," especially under emotional or mentally disturbed conditions. This is in accord with what Steven C. Hayes says in connection with training clients "not to take the map for the territory": "The point is to begin to learn how to look at thoughts rather than looking at the world through thoughts, and to learn how to detect the difference" (Hayes, Follette, & Linehan, 2004).

For better or worse, people are free to choose what the conceptual mind names and therefore what becomes the basis for a given perception of reality. Nevertheless, people have a tendency to become habituated to certain perceptions of reality and are therefore conceptually dominated in ways that are certainly selective and may appear biased or even intentional, and this can occur at various levels of human interaction.

Everyone adopts culture in a particular way according to the specific environment in which one is raised. People assimilate cultural norms and social values into a uniquely conceived and conceptually based view of reality. On this basis, we can understand some of the fundamental reasons behind misunderstandings and clashes between cultures. Language, which is foundational to culture, also carries such biases and selectiveness even within the same or similar types of cultures. At the group, family, and individual levels, various and more idiosyncratic conceptual realities will form on a wider continuum between so-called normal and pathologically structured views of reality. For those who are conceptually dominated, it is very difficult to realize that none of these conceptual realities exist by themselves but are continuously reproduced through language, which is the basis of all conceptual thinking. At an individual level, due to different experiences in life, we create different self-referential imprints,[32] for example

- reduce the stress inflicted by believing in such fixations as "being difficult," "impossible," "against me," "sick," and so on;
- change the determining effect conceptual reality has on image and feeling realities, diminishing its otherwise independent role of establishing reality.

UD mindfulness investigation on mind—regarding mental-image mind and corresponding image phenomena

The image mind provides us with a sense of space, dimensionality, and form that gives us an overall sense of place and solidness in reality. We have discussed how the senses of seeing and hearing help to provide an experience of distance between subject and object, and the image mind has similar capabilities. For instance, descriptions are usually accompanied by the experience of mental images, as when reading a book and the imagination provides dimensionality to the scenes being described.

In the waking state, when mentally created images become vividly clear and dominant, overruling the sense experiences, they are imagination, visions, visualizations, hallucinations, or images accompanying conceptual description specifically in relation with emotions. The apparitions connected with emotions and hallucinations appear with such clarity, as if one had seen them by using the physical eyes. However, they are seen only by the sixth mind's eyes.

The images experienced in dreams are of the sixth mind. According to UD, the reason these images are formed is that we have mental and self-referential imprints and imprinted mental patterns, and even collective and universal imprints. The dream images can be good, bad, or neutral, and they arise in connection with particular self-referential feelings. When a self-reference is negative, we can have mental images rising in the form of nightmares, where secondary causes such as events that have occurred during the day trigger underlying self-referential imprints to arise as dreams—for example, specific fears relating to our vulnerabilities.

People in the waking state, when emotionally or mentally unbalanced and even when they are not, can see things that other people don't see. These images are also not sense images, even if we mistake them to be, but rather sixth-mind images. When people want to convince you, they often say, "I have seen it with my own eyes." Actually, we have this problem more often than we are aware. We just think we have seen it with our physical sense minds, but very often it is not true, a fact well known to police investigators when eye-witnesses report very different things, even though they all saw the exact same events. In this way, we actually see with our mental image mind, or the sixth sense eyes, more often than commonly believed.

Points of investigation in mindfulness meditation—regarding image mind and corresponding phenomena:

- Do we and other people have different types of image realities in connection with everyday experiences, such as daydreaming, imagination, and night dreams, and even extraordinary experiences, such as visions and hallucinations?
- Do these realities exist "out there" in and of themselves or are all these mental reality appearances interrelated with "image mind"?

- Are there specific embodiments as a base for these different image experiences like daydream, imagination, night dream, and so on, or do they all rely on the physical body or no embodiment?
- Could there be something to the saying that "we learn to see," so there would be cultural, social, and individual aspects to the appearances we "see" mentally?
- Are these mental "image" realities influenced by what is named, that is, conceptual reality?
- Would that mean that I could have a say in the way reality appears to me?
- Could self-references influence the way image reality appears, and if so, would that be all the time or under specific conditions?

Advantages found in UD mindfulness meditation—regarding image mind and corresponding phenomena, on realizing that mental-image reality doesn't exist "out there" in and of itself, and that it is not sense mind appearances:

- can provide important insight into the say one has over the appearance of reality, in terms of being less determined by conceptually dominated perception and therefore giving more determinative power on the subject-side;
- helps one to break the habits of conceptually dominated perception based on vulnerable self-references that otherwise could result in feelings of depression, paranoia, and victimization.

UD mindfulness investigation on mind—regarding feeling mind and corresponding phenomena

The many types and levels of feeling range from the deepest, totally uniting third meditation state, which is the deepest meditation state,[33] to the subtlety of shifting moods or the most expressive and violent emotions. However, in UD, we are mainly concerned in this context with the feeling mind (subject-pole) and the more or less normal feelings (object-pole) that we all experience in our daily lives.

We saw under "feeling-tone" that according to EIS, feeling at this level is the initial state of action, but feeling is also the result of action, and apart from that, in accordance with UD, feelings also provide deep and necessary nourishment for the body and mind. Below, we will discuss the most important aspects of the feeling mind and feeling-based reality for everyday life: *the self-referential feeling and emotions*. With the latter, we will touch upon the dynamic of mind and emotions expressed in the interrelation of conceptual mind, image mind, and feeling mind—and their corresponding realities—in the construction of the individual person's general experience of reality, as seen from the UD point of view.

UD investigation into interrelated nature of self-referential feeling and corresponding phenomena

According to Tarab Rinpoche, the self-referential feeling[34] refers to the existential center of experience. With any experience, we naturally have a self-referential feeling.

This should not be seen as a contradiction to the common notion in Eastern philosophy of "selflessness,"[35] a term often used in Buddhist literature. Selflessness, in Buddhism, actually refers to the negation of an independently existing self-entity or the independent existence of other persons or things. People normally perceive themselves as separate and apart from the phenomena they experience. In Buddhist philosophy, everything, including the self, only exists relationally or in dependence on other things, and therefore nothing has an independent existence. In Western literature, the term "selflessness" is often misleadingly interpreted as the negation of a self, giving rise to many misunderstandings, and perhaps this translation is not well chosen. Self-references exist, albeit relationally, and forms the existential core of our experience, which is often determined by our self-referential imprints.[36]

In spiritual practice, the goal is to transcend the different levels of self-reference and ultimately even any sort of self entity existence. However, this is not the goal of personal development and psychotherapy where one does not try to get rid of the experiential center of oneself, what Jung referred to as "ego." In UD, the immediate goal is to change and transform inadequate, disturbing, and rough layers of self-reference, in order to become more flexible and develop more balanced and nuanced ways of experiencing reality and also to diminish existential fear for developing a basis for a more loving and compassionate attitude.

According to UD, all beings, and especially humans, right from the time of conception have a strong drive to uphold their existence. From this early stage of life, beings form self-referential feelings and conceptual habits by continuously assimilating and accumulating what is needed, while rejecting and fighting against what seems to hinder development into a more fully formed human being. This process doesn't stop with becoming a teenager or adult, but becomes more sophisticated throughout life, developing and settling into different types of self-referential feelings and conceptual identifications. People, particularly when they are conceptually dominated, always have both of these as the central self-referential core, accompanied by certain behavioral patterns to counteract fear and gain stability.

Although people share the common capacity for self-reference at different levels in an interrelated reality, we actually create much more unique matrices of self-reference throughout our development than is commonly realized, in accordance with our personal experience. Throughout our development, such personal experiences create imprints or predispositions regarding our self-referential perceptions, which are continuously reinforced and sometimes modified through subsequent activation and experience, resulting in an increasingly complex and interrelated reality formation. It is important to note that such formations of self-referential feeling, however dynamic, are automatically predisposed and based upon existing imprints without the freedom of choice one would have if this process was not operating under the habits of a dominant conceptual mind.

With the development of language, which is inherently conceptual, we gain the capacity to have conceptually based self-referential identities. From the time of linguistic development, we have the possibility to establish an outer conceptual relation to ourselves, in other words, to cultivate the ways in which we see ourselves and are seen in the world. These sorts of outer conceptual relations are dependent on specific conventional support. For instance, the self-identification of having a certain position

in society needs support from that society, and when that falls away, the status, position, and especially the identity upheld by such support fall away, too. Therefore, when people are strongly conceptual and thus have little or no direct contact with a genuine self-referential feeling based in the common ground of sensory experience, the loss of such support can easily result in a crisis of identity.

Also, if and when a person doesn't get the love and support needed during the time of their development, there is a greater possibility for establishing vulnerable self-references. Obviously, the earlier and more severe these experiences are, the more likely it becomes that vulnerable self-references may develop and impact the person's experience of reality and self. However, one cannot tell how a particular situation will affect a given person, as there is some variation from person to person in how and when a lack of support is experienced, and therefore how and when the person establishes a vulnerable self-reference. Some people even establish very good and supportive self-references under difficult circumstances. Also, one would have to take into account how many times a vulnerable self-reference has been activated due to circumstances and caused more imprints. Only the behavior of the individual in everyday life and their innate dispositions will determine the result of the circumstances under which their development is influenced.

We should also mention that an underlying UD view in connection with established vulnerable self-references is that because one has created these, they can also be undone. If recognizing that these are self-established, and if one is not satisfied with the easy "solution" of blaming others, circumstances, and so on (even though "others" and "circumstances" are always and undeniably involved), the vulnerable self-references and corresponding reality experiences can be transformed.

UD investigation into the dynamics of emotional feeling mind and corresponding phenomena

Emotional feelings are an important area of investigation because of their influence on experience and their relationship with self-referential feelings. We have already mentioned that our overall experience of a given situation is entwined with the cultural, linguistic, and individual ways of conceptually selecting and naming specific aspects of sense experience. We have also highlighted the different ways and levels at which habitually established self-references continue to develop and influence the selective process and impact the corresponding reality formations of the image and feeling minds. The momentarily active self-reference influences the conceptual experience (of self, a person, and/or a situation) by pushing through a *specific selective process*. When the conceptual mind predominates, the basis of reality formation is removed from the direct nature of the sense minds and depends largely on the predispositions of the conceptual, feeling, and image minds. The central self-referential feeling, especially in the context of conceptual domination, has a strong impact on our emotional experience of reality.

When a vulnerable self-reference is activated, we are often out of touch with direct sense experience. In other words we have a diminished or nonfunctioning compensatory mechanism that would, under different conditions, allow us to use the sense

by connecting with physical or more subtle sensory embodiments, one is stuck in this unpleasant and often increasingly vulnerable self-referential feeling.

In this way, UD suggests that it is possible to take care and gain control over the self-referential feeling, putting us in command of ourselves and our reality. To take care of one's own self-referential feeling doesn't imply that we do not see what is happening on the outside and become passive, but rather the opposite: if I manage not to get into an emotional reaction—which is always connected with the condition of my present self-referential feeling either being supported or being threatened—and change the vulnerable self-referential feeling, I would not get entangled with the happenings on the outside and would be able to act appropriately in the given situation.

It should be clear from this short presentation, in accordance with UD and based on EIS, that when one is conceptually dominated, the resulting conceptual reality formation is sensitive to the self-referential feeling with which one presently identifies. It should also be clear that with further habitual description of the situation experienced, one is reinforcing and even deepening the imprinted negative self-referential patterns, making them more likely to appear again and determine future conceptual realities. Above all, it should be clear that these habits can be changed, resulting in an expanded, more positive, and balanced grasp of reality.

Points of investigation in UD mindfulness meditation in regard to ordinary feeling mind and corresponding phenomena, when joining the feeling-tone and/or deep body sensation (as dealt with above under first and second mindfulness meditations) investigate:

- whether the feeling comes from outside or is interrelated with feeling mind;
- whether the object-pole of feeling is also feeling or something else;
- the role of feeling in the way one directs one's life;
- whether we have more than one self-referential feeling;
- whether it makes sense that the self-referential feeling (subject-pole) is the primary cause of action/Karma, and that what we experience happening outside (object pole) is a secondary cause—the primary cause being essential;
- the extent to which the self-referential feeling influence conceptualization, mental-image experience, feeling, and actions/Karma;
- whether the self-referential feeling changes due to changes in external circumstances (referential object) alone, or whether the self-referential feeling changes mainly due to my specific experiences (object pole) of the outer circumstances (referential object);
- whether it is possible to gain command over the self-referential feeling (by changing or transforming it) and, in this way, gain command of how reality is perceived/experienced.

Advantages UD mindfulness meditation on mind—in regard to ordinary feeling mind and corresponding phenomena:

- realizing that feeling doesn't come from the outside, naturally diminishing outer determination and opens for possibilities to change;

In the previous investigative meditations, the practitioner engages with different types of disturbing self-references in connection with investigating the nature of conceptual mind and reality formation, through the nonconceptual nature of feeling and image minds and corresponding phenomena, realizing their interrelated natures; and into the complexly interrelated self-referential matrices of identity based on the habits, predispositions, or imprints, acting as a supporter basis to the conceptual, image, and feeling realities and vice versa, in the dynamic play of the minds and their unfoldment of reality.

In the final investigative and merging meditations on feeling mind, one naturally begins to experience the dissolution of the subject–object dichotomy, because in these subtle body–mind states, there is no longer ordinary conceptual mind activity and no image reality, that is, there is only the feeling mind/unified experience left.

Implicit with this investigative meditation on the deep level of feeling mind is the aim to attain a state of awareness that is beyond the ordinary subject–object polarity of experience inherent in the sense minds and the three categories of the sixth mind. In essence, these final meditations are directed at an experience of mind that is beyond the categorizations and framework of sense minds and normal sixth mind subject and object poles/reality formation, normal levels of self-reference, and so on that have been used to arrive at this point.

The Earlier Buddhist Schools[37] spoke about this very fundamental phenomenon of mind as "a light in a pot with holes," the holes referring to the sense minds and the different types of sixth mind; and the light in the pot referring to the most subtle nature of mind, *the mind principle,* which is the potential of the sense and sixth minds.

Mindfulness of this deeper state of feeling mind is one of the higher meditations and is related to the meditation traditions of *Mahamudra*, *Dzogchen, Nature of Mind, and Void*.[38] In the early stages of this practice, the practitioner may glimpse the "light in the pot," but maintaining such an unusually subtle and practically nonself referential awareness for more than a fraction of a second is quite difficult. The accomplishment of this stage of meditation is attained when the practitioner can maintain a "one-pointed" feeling awareness of uniting with the light in the pot/nature of mind/void nature/*rigpa* nature/"clear light"[39] at will for as long as desired. This type of experiential condition is only possible on the basis of the absolute, most direct, and subtle form of self-referential embodiment and awareness:

> In this most subtle state called *lungsem*, where *sem* relates to the most subtle self-referential mind nature and *lung* to movements/vibrations, the most subtle trace of body, it no longer makes sense to differentiate body and mind—they are said to be inseparable. (Tarab Tulku & Handberg, 2005)

In this way, in accordance with the EIS Tradition, the practitioner can eventually reach a "clear and uniting quality of mind and phenomena," a mind that proceeds to unify the subject and referential object (and not just the subject-pole and object-pole). This basic or fundamental mind nature or mind principle is thus necessarily both a "personal" and a "universal" phenomenon and, in accordance with Tarab Tulku,[40] reaches even a primordial level of existence.

The second objective (which is simultaneous with the former) is to gradually merge with these increasingly subtle levels of self-referential feeling and awareness, progressing to a state of universal nondual body–mind awareness with only the absolute subtlest form of embodiment that is with only a trace of self-reference and experience of subject and object unity, and even beyond that. Practitioners who have achieved this stage of meditative accomplishment have done so through either a gradual process of the meditation stages or a more direct path, both through the practice of stages of Śamatha and Vipassanā meditations and accomplishment of more and more subtle embodiments and refined sixth mind.

Even if one can intellectually understand these stages of practice, there really is no diving into the light in the pot/nature of mind/void nature/*rigpa* nature/clear light, since, without training and accomplishment, one would simply, on the basis of creating a conceptual idea about it, be imagining such direct contact with the fundamental nature of mind. In these unknown territories, it is therefore necessary to proceed with proper guidance.

Those who achieve the final or resultant stage of this meditation (sometimes referred to as the state of fearlessness) are beyond self-interest, not needing anything to uphold identity. This condition is the right and only true basis for the most appropriate action with regard to benefiting others, unconditioned compassion, action based on unconditioned love, the actual goal of all spiritual traditions. It is all in accordance with the deepening of body–mind and self-referential feeling that it is possible to approach genuine unconditional love and compassion in the first place.

Fourth Mindfulness: Mindfulness investigative meditation of phenomena[41]—merging with a deep level of referential phenomena—traditional Mindfulness and UD mindfulness for spiritual ends

The last part of the fourth Mindfulness Meditation is also a very deep and subtle investigation corresponding with the deepest level of the third Mindfulness Meditation, focusing on the nature of phenomena itself. This cursory treatment can hardly do justice to the topic, but hopefully it will shed some light on the direction and outcome of this meditative investigation. The bases for this practice are traditionally the accomplishments of Śamatha, that is, usage of subtle body beyond the imagery body, and Vipassanā and the previous mindfulness meditations. We have already been dealing with part of the nature of phenomena in connection with the mindfulness of "body" and the different types of sixth minds as the distinct object poles. These are the objects we have in our experience, whether they represent the object poles of the senses or that of the conceptual, feeling, and image minds.

While we can easily understand the interrelated nature of external things such as the causes and conditions of an ever-changing array of phenomena, it is slightly more challenging to see that all phenomena, as we experience them, are inherently interrelated with the minds, and moreover that the conceptual reality we form has its own and sometimes very personal way of experiencing—as we have already discussed above.

Even if we were adepts and had the capability to experience directly, without using the ordinary level of conceptual mind, we still would have only an experience of what the minds can provide, which is limited to a particular range of perception. The important implication of this is that because of such limitations, we do not have any truly direct means of experiencing the full nature of referential phenomena through our senses or any of our other minds. The object poles we experience, which include oneself, are as much a product of our minds as they are a mere reflection of the entire phenomenal world, referential reality.

In the previous meditations, we took phenomena as object poles in a more discrete manner than we do in the present investigative and merging meditation. Now, we investigate phenomena inclusively. In this manner, the practitioner is able to get closer to distinguish the rules of referential reality's nature.

Nevertheless, when we continuously are anchored in body sense or even cultivate subtler energy embodiments, the conceptual mind calms down, and it no longer dominates over the other sixth minds. The real challenge here—as above—is that we have to work with the conceptual mind on an increasingly subtle body basis while all the time staying in direct contact with the object under investigation through feeling and image minds.

Staying in direct and one-pointed contact with referential reality with that to which the words refer, seeing with the mind eyes and hearing with the mind ears—Śamatha attainment—and using Vipassanā as an investigative means, we can gain much more precise access to the rules of referential reality—all in accordance with the subtlety of the body–mind interrelationship we use.

In this meditation, the objective is to investigate the nature and workings of referential phenomena, that is, to discover its nature and rules. Traditionally this investigation has several parts: investigation into referential phenomena to determine whether or not anything exists in and of itself in regard to "oneself"; whether or not anything exists in and of itself in regard to "other"—everything else other than one self; whether or not referential phenomena are subjected to causal nature, moment-to-moment changing nature and composite nature as well as to interrelated natures and how these interrelations determine referential reality's unfoldment in duality.

These investigations on referential phenomena start with the investigation of conceptual reality realizing its nature, the way it functions, and its limitations and capabilities in order to let the nature and rules of the phenomenal world or referential phenomena stand out more clearly. Tarab Tulku said:

> The first part of the fourth practice of mindfulness in regard to phenomena is again connected to the conceptual reality.[42] This type of object is functional, so it exists. We can describe and work with it, and yet it's nothing solid, nothing tangible. In the exercise one should try and get an experience and realization of the particular nature of the conceptual reality. This investigation follows what in Inner Science is called "interrelated nature" and what in *Boddhisattvayana*[43] is meant by "everything is an illusion." The conceptual reality exists but there is nothing solid upholding it. When realizing the nature of conceptual reality, it's like a fantastic painting in the air one can walk straight through.[44]

Here, Tarab Tulku is talking about the nature of how the "referential object" appears to the conceptual mind, but similar investigations are carried out in relation to the other minds. In this way, we realize that everything we experience is like an apparition; it is at best only a reflection of the "referential reality" (actual reality), not the object itself, and it appears as thoughts, images, sensations, and feelings—none of these are solid things; they are all the object-poles of mind.

The second part of the Mindfulness Investigations of referential phenomena takes us into the study of the phenomena of "oneself." Traditionally, this investigation is connected with the five *Skandhas* or Heaps: body, feeling-tone, discrimination, other mental functions, and the basic nature of the mind-principle. The outcome of the investigation might be (like in EIS) the realization that there is no independent existence of oneself on the outside of the composition of the "five heaps"/five Skandhas; oneself has a compounded nature that changes from moment to moment, and none of the Skandhas exist in and of themselves either.

A further level of investigation would be to detect rules of the "referential reality" in terms of "ourselves" and "everything else." We investigate the causal, composite, and ever-changing nature of reality, as well as Nagarjuna's[45] eight interrelationships/*tendrels*: becoming and cessation, the finite and the infinite, localization, and de-localization, part and whole, which has been arranged in pairs by Tsongkhapa[46] in accordance with the nature of "individual identity," "time," "extension in space," and "conjunct nature."[47] Investigative questions could be: Are these interrelations essential or not, and why? Why are they placed in pairs and why do they relate to "individual identity," "time," etc.? Are these actual rules of the unfoldment of referential reality? Could we find any other essential rules?

A possible continuation of this investigation would be to investigate the matter–energy (potential field) interrelationship that Tarab Tulku and Handberg (2005) pointed to as essential to referential phenomena, too. Everything we experience with our senses is of "form" or matter nature.[48] However, when we go deeper into the nature of mind and phenomena, EIS holds that oneself and everything have the nature of energy, and on a deeper level, we partake in the potential field or even in unity nature of subject and referential object.

Thus, the practitioner could achieve the realization or at least get a glimpse of the emptiness or void nature of the "referential object," that is, the realization that even the referential object, all the way into its energy or even potential field, is of relational nature, devoid of inherent characteristics. These kinds of realizations are the most efficient means to undercut the attachment to self- and other-identification, that is, the fixation of self and other, which is the main hindrance for attending a deeper level of oneself and phenomena, for finally merging with the unity of both. These fixations are said to be the root cause of duality.

It is important to note that none of this is meant to say that we do not exist; it is only an investigation into how we actually exist. Tarab Rinpoche with Candrakirti (650 AD) stressed that, even though everything exists in a relational way, in a causal and moment-to-moment way, and that nothing exists in and of itself, everything still exists. Realizing this leads to the experience of "void nature" or "emptiness" of phenomenal existence, which is the way we actually exist in accordance with EIS.

still, but everything is changing momentarily. Langer also states, with respect to this same reason, that research can only yield probabilities but is often taken for facts. This demonstrates the importance of an awareness of interrelated nature of reality—nothing existing in and of itself, but everything is by nature relational.

EDA The concept of the "interrelated nature of reality" is prevalent in most of the work on mindfulness, and it seems that the more Buddhist-inspired mindfulness that is applied, the more the interrelated nature is emphasized. It seems clear that most researchers/practitioners share a similar perspective that the individual makes a personal interpretation of their experiences in order to construct reality and thus is responsible for creating the personal experience of reality. This interrelatedness is also described to exist on a much larger scale inasmuch as we are all interconnected and part of a larger whole. However, it is not often discussed to what degree a person can reach the "true nature" of the referenced reality. It sometimes appears like this referenced reality is described as existing "out there" in a way that is actually similar to how it is experienced and that it is possible to reach and describe reality on this basis in a more or less objective and accurate way. Also, the transitory nature of all things is often presented and discussed but with varying emphasis and views.

Comments to "Interrelated nature of reality" In both SPC and EDA, the similarities to UD are many, although it seems, as in UD, that there is more absolute emphasis on the "interrelated nature of reality" in every experienced situation, in particular in regard to each type of mind (subject-pole) and corresponding object-pole—clearly differentiated from the referential object.

The different minds and different levels of the minds

UD The specification of the five sense minds and the sixth mind and the latter's different aspects, and in particular the role of the conceptual mind and the different more subtle minds, is basic to understanding that the reality experienced appears according to which mind and degree of subtlety of the mind are engaged.

SPC Dr. Langer writes that words are only concepts, that these concepts limit our thinking and our way of looking at things, that our mindset holds them still, and that we cannot even consider change until we become more flexible with regard to our conceptual structures.

EDA The five sense minds are described, and there seems to be some agreement about the importance of using all these sense minds to enhance awareness and be in the present. The different mindfulness practices train the person to gain a deep and direct contact with the different sense minds. The sixth mind and the conceptual mind in particular are discussed in most practices, advising the practitioner to calm down the conceptual mind and not follow the thoughts that arise. However, very often, the conceptual mind and the sense minds are not separated out clearly. But mostly, the practices emphasize how different an experience will be depending on which sense

the most important issue is to reflect and take into account what role the "mind" might have in the specific situation, which certainly is not always the case in science and health care. However, one difficulty in comparing different theories is that the same term could refer to different entities or aspects of mind. For example, the modern term "sixth somatic sense," also described as a "non-worded world of sensation," is used in the West to represent body sense, but according to traditional Mindfulness and UD, body sense belongs to the five senses and is separate from the sixth sense. Also, the terms "body and mind," "body–mind," and "subtle body" are used with different meanings, for UD terminology—see section "Terms of analysis 2: Types of mind and body."

"TM: Accomplishment of the deep level of mind," would be comparable to a stage described in the section "Mindfulness investigative meditation of mind—finding and merging with a deep level of feeling mind and corresponding phenomena—traditional Mindfulness and UD mindfulness for spiritual ends" and is related to by UD and EIS as "a final level of meditation," and "mindfulness of phenomena," seems to correspond to what is described in TM as the state of a purely content-free, silent state of awareness. In accordance with UD, it becomes clear that there are many levels of the deep feeling mind or "void" nature (in some schools, they discuss 16 levels of void), beyond the sense field and conceptual field, and even beyond any image appearance, that is, reality of form manifestation.

Being in the now—in the present with acceptance and practices thereof

UD UD asserts that the mind and body are mutually dependent and interrelated phenomena, and that any type of mind always has an embodiment of some kind. Mindfulness practice cultivates awareness based on the subtle body sensing, and concurrently develops more subtle mental capacities. UD holds that there is a broader and subtler range of perception available to human experience that is achieved through the manifold practices as a prerequisite of Traditional Mindfulness meditation and the contemplation and cultivation of attention on mental and sensory phenomena.

SPC Dr. Langer states that, "A mindful approach to any activity has three characteristics: the continuous creation of new categories; openness to new information; and an implicit awareness to more than one perspective"; furthermore, that mindfulness is to notice new things, be in charge and be attentive and actively make choices. Langer uses the expression mindlessness as the opposite of mindfulness, and mindlessness is governed by the "autopilot." Langer says about being present that "if you are not there, there is no possibility to know that you are not there." Instead of specially assigned practices, Langer advocates a continued attitude with awareness, like a beginner's mind, a mindful curiosity, and to always be attentive and see alternatives and actively make choices, which will put you in the present; also, to always realize and have the awareness that there is never one but many perspectives in every situation and that nothing is static. To realize and maintain awareness that there are many possible perspectives relates to what is included in the UD definition of mindfulness as "investigation into the nature of reality" but in Langer's mindfulness, without meditation.

There is also a form of acceptance to this situation with the awareness that there are many possible perspectives.

EDA All mindful practice includes being in the present. This is basic to training in mindfulness and includes bringing one's complete attention to the present experience on a moment-to-moment basis with awareness of one's own inner emotions and reactions, and remaining nonjudgmental. This involves awareness of the five sense minds and focusing on what experiences can be felt through them, as well as letting thoughts (conceptual mind) come and go without placing any particular attention on them. Furthermore, the attitude towards what happens should include acceptance of the experiences; one should not try to change them. If guided, the person will be told to "be in the experience/feeling" and not just to think about being there but actually be in the body, thereby having a more direct, sense-based experience. Focusing on the breathing is often used as a means to get into body sense. Many of the practices include some form of focused attention on the different parts of the body similar to what Jon Kabat-Zinn (2003) describes as a "body scan." Typically these practices start with focusing on breathing and systematically go through the different parts of the body to get in contact with the physical senses and whatever can be experienced. There is also more formal meditation like sitting meditation with more analytical aspects to it and with the use of visualization. Most of the different kinds of sitting meditations include calming down the conceptual mind and just letting thoughts come and go without thinking about what has been going on in the past or what might happen in the future (Kornfield, 2008).

Usually, it is advisable to set aside a special time for these practices daily. The aim is that the person should remain mindful as much as possible. Different short practices are also presented in order to include the practice into daily life situations and to simplify and find time for the practice, such as "red light practice," checking one's breathing at regular intervals, mindful eating, mindful walking, and so on.

Furthermore, moving meditations like Yoga, Tai chi, Chi Gong, and similar training forms, which all can support developing a body sense, are often included in contemporary mindfulness practices. There are many workbooks with practical hands on instruction on how to apply mindfulness in everyday life.

Comments to being in the now—in the present with acceptance and practices thereof
From a UD point of view, these Mindfulness practices would bring one into the present, undercutting stress, and so on, and are very useful for their compensatory effect to the conceptual mind's unconsciously screening out what it doesn't name. And the deeper the body basis for these practices, the better, as this generates the possibility for one to realize the interrelated nature of subject-poles and object-poles, and therefore see one's own influence on the perception of reality that would otherwise be accepted as existing—objectively, as it occurs to the conceptual mind.

However, according to Traditional Mindfulness, this would be considered true mindfulness only if the investigations were done on the basis of a meditative state of mind, that is, from a subtle body base, which would give an even deeper realization of the interrelated nature of reality and the possibility for going beyond that which we ordinarily take to exist objectively.

Body–mind interrelation and health perspectives

UD Well-being is a major goal of all activities in Buddhist traditions, as it is in UD, and not just for the individual but also from a much wider perspective. UD confirms that it is possible for the mind to influence human physiology and bodily functions, an assertion that is well confirmed by modern research. In UD, training personal development is a major aim, the latter part of which is specifically directed to the Art-of-Relating and Psychotherapy with direct therapeutic applications.

While UD primarily provides a basis for personal development and psychotherapy, it holds that there is an even broader and subtler range of perception available to human experience that is achieved through the manifold practices leading up to and including the Traditional Mindfulness meditations (see section "The four Mindfulness meditations and UD Mindfulness").

Regarding mindfulness of the body, and other embodiments, the more subtle the body the more subtle the sense capacities and the more the space and time dimensions open up.

SPC Dr. Langer states that mind and body are "just concepts" and that mind and body are not separate but belong together; the mindset will decide what happens in the body as the mind–body is one. This is the main focus of the fascinating research by Dr. Langer, as reported in her book "Counter clockwise": "Where the mind is, the body will be." The majority of Dr. Langer's research studies clearly demonstrate how mindfulness exerts a dramatic effect on health and prolongs life (Langer, 1979, 1989, 1997, 2009; Langer & Benevento, 1978).

EDA Mindfulness is based on an awareness of the interrelation of body and mind. It is well accepted that the mindset will change and have an effect on the physiology of the body as well as the function of the brain. Body–mind clinics focusing on this close interrelation are also gaining greater acceptance in health care. Neuroscience research has demonstrated that neuroplasticity is enhanced as a result of mindfulness practice, which again emphasizes the interconnection between the body and the mind. Mindfulness practice furthermore stimulates neural integration of different essential parts of the brain, including the middle prefrontal cortex, the region for the executive functions of the brain, that are of major importance for mental health and in turn for general well-being. Moreover, Mindsight, as defined by D. Siegel (2010b) "to see the mind—the inner world in ourselves—and shape it towards health," is one further essential step to developing the vast capacity of the "mind." This is also in line with the theory that of what all takes place in the mind, the subjective experiences are correlated with neural firing and vice versa, which is verified by research on neuroplasticity. Thus, our brain is shaped by our experiences. In connection to this, Dr. Siegel further describes a triangle of well-being and resilience that consists of the brain, the mind, and relationships. Thus, there is a structural and functional base in the brain that, in combination with the mind and relationships, can be developed to support well-being and health.

Mindfulness has most extensively been used to achieve stress reduction through the establishment of the Mindfulness Based Stress Reduction (MBSR) program at the

University of Massachusetts Medical Center by Dr. Jon Kabat-Zinn (2003) and has proven to be very effective. Mindfulness practice, on both a short- and long-term basis, has been extensively researched and shown to be effective in treating a large number of diseases, mental as well as somatic and to increase neural integration, which is considered essential for a well-functioning brain and mental health, and even to have a positive effect on the telomeres and slow down the aging process, and also to enhance empathy (Carlson, Speca, Faris, & Patel, 2007; Davidson et al., 2003; Doidge, 2007; Epstein, 1999; Goldstein, 2012; Hanson, 2009; Hölzel et al., 2011; Jacobs et al., 2011; Kabat-Zinn, 2003; Krasner et al., 2009; Lazar et al., 2000, 2005; Rakel et al., 2009; Schwartz & Begley, 2002; Segal, Williams, & Teasdale, 2002; Shealy, 2011).

Comments on body–mind interrelation and health perspectives Body–mind and health aspects might be where the similarities are the greatest between the different approaches, perhaps because the prerequisites to realize the potential health aspects are based on a deep understanding of the interrelatedness of mind and body. The mind's ability to alter brain function and cause neuroplastic changes, which has been demonstrated through advanced scientific research, will most likely lead to increased awareness and insight in medical and other healing professions.

Concluding Remarks

It appears that, as a whole, there are many similarities between mindfulness as approached by UD, the SPC by Langer, and the EDA, all of which share the goal to increase health and well-being, and use mindfulness as a method. However, some major differences appear with regard to the differentiation of minds in UD, the different levels at which the analysis of reality takes place. Also distinct in UD is the differentiation between direct and indirect means of perception pertaining to sense minds, and feeling and image minds (direct) versus the conceptual mind (indirect) and the claim that the sense, image, and feeling minds don't use language as the basis for perception. Recent research in neuroscience and other areas has clearly demonstrated positive structural and functional effects on the brain, neuroplastic changes, and dramatic positive health effects in persons with regard to applying mindfulness as described by SPC, EDA, and UD-Buddhist approaches. Medical health care would certainly benefit by taking mindfulness into account with respect to the well-being of both patients/clients and healthcare professionals. Furthermore, research studies on epigenetics have underlined the significance of our mindset demonstrating a direct health effect by influencing the genes (Lipton, 2005).

Dr. Langer demonstrates in her research the very significant and impressive effects of being aware of one's mindset and emphasizes that there is more than one perspective in any given situation, which, when taken into consideration by the person, can have a major impact on health and well-being. Dr. Kabat-Zinn has successfully pioneered the use of mindfulness in medical practice through his MBSR program (Kabat-Zinn, 2003). Dr. D. Siegel states that "Mindsight enables us to sense and shape energy and information flow. Mindsight takes away the superficial boundaries that separate us

6. In ordinary perception, there is always self and an object. This is what is meant by self-referential nature of experience.
7. In Tibetan, the subtle bodies are called Yid-lus, phon. *yilü* = "(sixth-)mind-bodies."
8. In accordance with EIS, any aspect of mind that is not directly related to the senses is placed in the category of sixth mind, but the important point is that all minds are momentary and arise simultaneously with the phenomena perceived.
9. The Buddhist literature is categorized under either the Sutras or Tantras.
10. Tib. Yid-kyi rtog-pa'i rnam-shes (Phon. *yikyi togpe namshe*).
11. Tib. Yid-kyi myung-wa'i rnam-shes (Phon. *yikyi nyongwe namshe*).
12. Tib. Ngönsum (Phon. *mNgon-sum*).
13. By the later Inner Science Schools (Yogacara and Madhyamaka), it is questioned whether its possible to pinpoint anything, as nothing has characteristics that exist independently, such characteristics only exist relationally.
14. We use the term "other," implying others and everything else—except oneself. So, oneself and other comprise everything within a certain perceptive field.
15. There are different types of vipassana meditation; some are more analytical, and some are less, but in accordance with Tarab Rinpoche, all vipassana meditation uses some measure of notifying mind (i.e., conceptual mind) for its attainment.
16. In Tibetan, this subtler conceptual mind type is called Shes-rab (Phon. *sherab*).
17. Tib. Lus (Phon. *lü*).
18. Tib. Tshor-ba (Phon. *tshorwa*).
19. Tib. rNam-shes (Phon. *namshe*).
20. Tib. Chos (Phon. *chö*). Skr. *Dharma*.
21. Tib. Lus dren-pa nyer-bzhag (Phon. *lü dren pa nyershag*) relating to the first *skandha*.
22. Modern scientists have identified as many as 15 additional senses with unique sense organs buried deep within the tissues of the body called proprioceptors. There is scientific evidence that the basic senses such as sight and smell also function on subconscious levels providing very subtle levels of sensation.
23. Destructive emotions are those that have a destructive effect on oneself and others. Constructive emotions are not a problem for personal development and one's mental and somatic health—just the contrary.
24. Tib. Tshor-ba (Phon.) *tshorwa*.
25. The evaluative feeling-tone is related to the second psycho- and physical constituent, *skandha*.
26. Tib. Sems dran-pa nyer-bzhag (Phon. *sem drenpa nyerchag*).
27. Tib. rTen-drel (Phon. *tendrel*).
28. Skr. Nivirtti, Tib. lDog-pa (Phon. *dogpa*).
29. Tib. Log-pa (Phon. *logpa*).
30. See below under "Mindfulness of feeling-mind."
31. "Direct" here only implies "without use of language."
32. Tib. dBag-chags (Phon. *bagcha*). Skr. Vasana (English). These are sedimental imprints or impressions. Our experiences create "energy" imprints, which at a later time, under specific secondary conditions, can become activated and, for instance, give rise to a specific "self-reference."
33. This is a state of mind that, as is said in the Tantras, we naturally attend to in the final stages of death as well as in the deepest state of dreamless sleep—but generally unconsciously.
34. Tib. bDag-'dzin (Phon. *dagdzin*). Skt. *atmagraha*.
35. Tib. bDag-med (Phon. *dagme*). Skt. *anatman*.
36. Sanskr. Vasana; Tib. dBag-chags (Phon. *bagcha*). Skt. *vasana*.
37. Vaibhasika and Sautrantika.

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6

Exemplifying a Shift of Paradigm

Exploring the Psychology of Possibility and Embracing the Instability of Knowing

Sayyed Mohsen Fatemi

The Role of Perspectives and Paradigms in Psychology

At the center of psychological research and studies, there lies an underlying choice of perspectives in which knowing and its modes are defined. The studies, therefore, are essentially tied to their original source in that one cannot expect to see results and findings that are not compatible with their leading perspective. For instance, a Freudian perspective cannot give rise to findings that question the fundamental assumptions of Freud's views on human nature. Similarly, a humanistic psychological perspective would espouse practices and approaches that ultimately explain their sensibility within their original source. Also, a behaviorist perspective based on Skinner's law of positive reinforcement would, inevitably, search for outcomes and consequences that follow behaviors and that subsequently lead to an increase in the frequency of those behaviors.

The notions of paradigms can be explored within a perspective in that a perspective or world view can entail a series of assumptions and beliefs that tend to explain ontological and epistemological relationships: they would represent how things are, how understanding takes place, how the relationships among things are established, what knowing is all about, how we discover relationships among phenomena, etc.

Kuhn (1962) critiques the cumulative process of facts and their implications for scientific progress and questions the dependency of the scientific progress on the steady accumulation of facts indicating that the progress happens only when there is a shift in paradigm. Paradigms, Kuhn (1962) argues, can narrow one's perspective too much and prevent scientists from observing realities that fall outside of the paradigm. As Kuhn (1962) indicated, the real breakthroughs happen during paradigm shifts, when a new way of thinking replaces an older model. A new paradigm does not comply with the old one not only because the presuppositions have changed in the new paradigm but also because the entire scientific field and its relevant problems have been redefined in light of the new paradigm. Therefore, what may be considered a problem may no

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longer be a problem in view of the new paradigm, and what made sense within the old paradigm may be totally nonsensical in view of the new paradigm. For example, Fischer (2006) argued that psychological textbooks in the 1960s and 1970s defined psychology as the science that predicted and controlled behavior, and he provides a recount of the pervasive research methods based on the domination of the paradigm and indicates that

> By now, with psychology having been established as a rigorous empirical discipline, most psychologists no longer accept the "control and predict" definition and no longer cite logical positivism and related philosophical foundations, but often do count on accepted experimental procedures and statistical analysis as adequate to continue building a body of knowledge. Psychology textbooks most often define psychology as the study of human and animal behavior. (p. xx)

New paradigms are not warmly received, as they shatter the taken-for-grated assumptions. The emergence of the new paradigms is often associated with skepticism, mistrust, and disbelief: the new paradigms are unsettling, as they perturb the longstanding mindset that has already developed familiarity, comfort, and accessibility of the truth. To exemplify, those who have been recursively and extensively exposed to the hegemony of natural science as the leading master of inquiry for social science and psychology find it ineluctably hard to receive a perspective that questions the tyranny of the rational empiricism or logical positivism namely questioning the applicability and plausibility of natural science paradigms in the realm of psychology.

According to Kuhn (1962):

> The physical referents of these Einsteinian concepts [space, time, and mass] are by no means identical with those of the Newtonian concepts that bear the same name. (Newtonian mass is conserved; Einsteinian is convertible with energy. Only at low relative velocities may the two be measured in the same way, and even then they must not be conceived to be the same.) (p. 101)

Deep down a psychological perspective, one may discern an orientation that not only suggests a way of looking at the world but also highlights what is important to know. Within an August Comte's orientation, for example, one may see the emphasis on the so-called facts and causes of behavior. The assumptions within a paradigmatic analysis would espouse a set of beliefs that demonstrate how knowing is possible. Once the paradigms are recursively established, they become almost unquestionable, since they tend to show the right way of knowing, acting, and thinking. Questioning the paradigms would then require disobedience from the structurally established sovereignty of the operating set of beliefs. This would lead to exclusion from the domain of the ruling paradigm with its own practical consequences.

Describing the practical consequences of a leap beyond the established paradigms, Scileppi, Teed, & Torres (2000) indicate that

> University dissertation committees and journal editors more readily accept research supporting the dominant paradigm, and foundations and government agencies are more

knowing would hamper the exploration of an expansive array of epistemologies and locks the search for knowing in a predetermined point. The questionable knowing has its roots in positivism and enlightenment whereby rationality is defined through an access to restricted avenues of awareness mainly embodied through the linear and analytical forms of thinking. Langerian mindfulness opens up the horizon for revisiting the well-established epistemologies and argues that as much as they have contributed to expansion of our understanding, they have contained our ways of thinking. Through her research on the implications of mindlessness and mindfulness, Langer (2009) highlights the significance of the contextual components including cultural, social, economic, and political contexts, and indicates how the hegemony of positivism and its aspirations to make broad comparisons have contributed to the promotion of insensitivity towards contexts thus fostering mindlessness. Her delineation of this mindlessness would purport how the emphasis on uniformity of positivist driven methods such as questionnaire boils down to the marginalization of the contexts. In line with Bruner's (1986) distinction between the paradigmatic mode, namely the logicoscientific mode and the narrative mode, Langer (1989) recognizes narratives and presents them as an independent mode of cognition while demonstrating psychology's incarceration within natural science (logicoscientific mode) as a form of mindlessness.

Langer's work has already been inspiring in micro levels in that it has encouraged, promoted, and induced research findings and studies that demonstrate the impact and implications of mindfulness for numerous areas including health, education performance, learning, and creativity. Nonetheless, the field of psychology may prosper from a shift of paradigm through Langerian mindfulness as one may also attribute the trend of some of the already-ongoing developments in psychology to an explicit or implicit inspiration from such mindfulness. This shift is inviting, as it calls upon the exploration of a wide variety of epistemologies and even ontologies that may have been concealed to oblivion due to the hegemony of discursive manifestations of the positivist-driven paradigm.

Psychology and Acting From a Single Perspective

Mindfulness, according to Langer (2009), consists in a series of transformations in *being, thinking, feeling,* and *living.* It liberates us from getting incarcerated in the persistence of acting "from a single perspective."

An example of this persistence can be found in the positivist psychology that claims full accessibility of reality and its apprehensibility: reality can be fully understood, as it is driven by universal laws. The reality, therefore, can be defined, described, explained, predicted, and controlled.

Positivist psychology driven by logical positivism posits that empirically verified observations are the only valid data. This perspective, which goes back to 19th century, has been influenced by bigger underlying perspectives, including rationalist philosophers such as Descartes, the British empiricist philosophers such as Loke, and positivist philosophers of science like Popper.

Positivist psychology, due to its focus from a single perspective, has been mindless about the research subjects' sense of research setting. It is in line with this parochialism

observer as their observation would finally represent the amount of certainty taken from the dynamics of observation. This, in a more practical sense, would allow the observer to legitimize the responses that need to be taken vis-à-vis the observation. One may look at the mainstream positivist research or positivist therapeutic measures within psychology, for example, to see how the researcher or therapist would embark on creating a view based on their assumptions that can justify both the interpretation and the action.

Langer's (2009) work on mindfulness can be seen as a pivotal source of awareness for exploring the relationship between the underlying perspective of an observer in a psychological research and the power of the perspective in leading the direction that he/she takes in dealing with the psychological phenomena. Langer's presentation of mindfulness allows us to understand how the context that plays a huge role in the interpretive process is itself created by the one who is subsequently bound by the context. The context thus is, on the one hand, the creator of the perspective from which the action seeks its justification and, on the other hand, created by the one who opens up the relationship between the context and himself/herself. Through a mindful exploration of the Prince and the Pauper, Langerian understanding of mindfulness pinpoints how an understanding of the perspective of the other may lead us to a faulty understanding of both the context and the perspective if it is superficially taken as an experience of another perspective while essentially remaining in one's own perspective. In other words, if a researcher or a therapist pretends to be in the shoes of the client (the patient) while knowing that this being in the shoes of the client (patient) would soon be replaced by being in their own shoes as a researcher or a therapist, this not only means a distorted understanding of the perspective but also develops more gaps between the perceiver and the experience as a result of which the experience is still unknown to the pretentious knower of the experience. Conversely, the researcher or the therapist may not claim that she/he has understood the other's perspective, yet she/he can acknowledge openness towards the existence of the other perspective.

How can the researcher understand the perspective of the other if they are afraid of losing control of their own perspective in the process of the research or therapy? How can the researcher understand the perspective of the participant or the subject of the research if the researcher is recursively stalled in the language induced by their perspective?

Langerian mindfulness is not just a focus on the cognition; it is a shift of understanding: a shift from epistemology to ontology. Langerian mindfulness, in this sense, requires a change of being and not just knowing. It calls for a nonalgorithmic understanding of the perspective of the other and sensitivity to the incessantly on going process of genuine novelties that unfold themselves beyond the established contingencies. Langerian mindfulness (Langer, 1997, p. 124) reiterates that "a mindful approach does not favor the observer's over the actor's perspective."

One may see another example of psychology's mindlessness and its concentration from a single perspective in psychology's infatuation with the illness model. Psychology, one may argue, has been so mindless about the possibilities right from the beginning. It has acted in the language of Langer (1989, 1997) "from a single perspective" and has been oblivious of any shift of attention. The negative psychology itself is a

salient example of mindlessness where the windows towards any opening have been fully blocked with an emphasis on negativity.

Elaborating on this negative orientation of psychology, Fineburg (2004) cites numerous examples and indicates that

> VanderStoep, Fagerlin, and Feenstra (2000) surveyed introductory psychology students to see what concepts were recalled most after taking the course. The concepts most often recalled were overwhelmingly related to negative psychology and the illness model. Students most often remembered learning about Phineas Gage and his brain injury, systematic desensitization, narcolepsy, Milgram's obedience study, attitudes influencing behavior (presented through a "controversial issue" debate), and two disorders—dissociative identity disorder and schizophrenia. The other ideas recalled—"psychic" powers, altered visual perception, neuron firing, and classical conditioning—could be considered neutral, but not specifically positive. Many introductory psychology students do not continue to higher levels of psychology, so their overall perceptions of psychology center around the disease and illness model that has dominated for the past half century. (p. 198)

In pursuit of the monolithic perspective with a concentration on negativity, psychology seems to have mostly generated a flux to corroborate the categorization of the illness model in various arenas. One may track down the ubiquitousness of this trend in plethora of research from personality to happiness where the impossibility of increasing one's happiness and the inevitability of a real transformation would call for a quintessential applicability and plausibility (see Allport, 1955; Lykken & Tellegen, 1996; McCrae & Costa, 1990; Suh, Diener, & Fujita, 1996).

Acting from a single perspective and its consequential mindlessness has been a driving force so dominantly that it has affected thinking about wellness and health. It is, then, not surprising that our understanding of wellness has been mainly embedded within an illness orientation. There seems to be scant research that has examined the concept of being well as an independent state of being without a focus on the illness models (see Medich, Stuart, & Chase, 1997; Paul & Weinert, 1999).

A Langerian perspective with mindfulness would illustrate how psychology's entrenchment within the pillars of stabilized definitions and their urge for constancy has deprived us from looking outside the preestablished borders. In identifying the underlying elements of the cling to such mindlessness and getting encapsulated in one single perspective, Horwitz (2002) writes:

> The emergence and persistence of an overly expansive disease model of mental illness was not accidental or arbitrary. The widespread creation of distinct mental diseased developed in specific historical circumstances and because of the interests of specific social groups … By the time the DSM-III was developed in 1980, thinking of mental illness as discrete disease entities … offered mental health professionals many social, economic and political advantages. In addition, applying disease frameworks to a wide variety of behaviors and to a large number of people benefitted a number of specific special social groups including not only clinicians but also research scientists, advocacy groups, and pharmaceutical companies, among others. The disease entities of diagnostic psychiatry arose because they were useful for the social practices of various groups, not because they provided a more accurate way of viewing mental disorders. (p. 16)

Elucidating the perniciously embedded mindlessness within the medical-oriented psychology as an example of acting from a single perspective, Langer (2009) argued that

> We can become effective health learners only by questioning the traditional ways we respond to medical information. We will be ready to seek a new way if we recognize that doctors can only know so much, that medicine is not an accumulation of absolute truths, that incurable really means indeterminate, and that our beliefs and most of the relevant external world are social constructions. (p. 29)

Langerian mindfulness, thus, highlights how the perspective can be limited and limiting and how the containment of the perspective may develop the illusion of mastery without allowing a search for alternative ways of exploring the unresolved mysteries.

It may be in line with the achievement of such a mindfulness and understanding the tyrannical subjugation of psychology's longstanding mindlessness that Seligman and Csikszentmihalyi (2000) revisit the sovereignty of medical-oriented psychology and its pervasive attachment to the illness model. They question the pathology, faults, and dysfunctions as the bare-bone essentials of human conception. The whole enterprise of positive psychology, one may suggest, demonstrates an implicit flight from mindlessness to mindfulness where, in the language of Langer (1997), "the value of uncertainty" is celebrated, as it allows one to mindfully deconstruct the assumptions that may have been considered as ineluctably solid due to their frequent and extensive exposure. Seligman (2002, p. 211) appears to be, for instance, mindful of Langerian alternative ways of looking when he indicates that "current dogma may say that negative motivation is fundamental to human nature and positive motivation merely derives from it, but I have not seen a shred of evidence that compels us to believe this." Positive psychology, albeit away from the flurry of negativity and its connectedness to psychology's main subject matter, is still steeped within the discourse of the mainstream positivist psychology with that being presented as a laudable sign of superiority to others including humanistic psychology. This might as well demonstrate how the hegemony of a paradigm would have an influence on those who even oppose the implications of the paradigms and yet reside within the same route of thinking.

Psychology seems to have been mindlessly preoccupied with acting from a single perspective that strongly stresses a focus on the illness, disorder, diagnosis, problems, and malfunction. This preoccupation has resulted in producing other perspectives that have tightened the examination of a search beyond the discourse of negativity. Maddux, Snyder, and Lopez (2004) appear to highlight the dangers of such mindlessness as they reveal a connection between the illness ideology and psychology.

They deconstruct the underlying elements of such mindlessness that has imposed its heavy implications on psychology and indicate:

> The discipline is still steeped not only in an *illness metaphor* but also an *illness ideology*—as evidenced by the fact that the language of clinical psychology remains the language of medicine and pathology. Terms such as *symptom, disorder, pathology, illness, diagnosis, treatment, doctor, patient, clinic, clinical, and clinicians* are all consistent with the ancient assumptions captured in the term *clinical psychology* and with an ideology of illness and