Mindful Practice in Action (I): Technical Competence, Evidence-Based Medicine, and Relationship-Centered Care

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In this first of a 2-part series of articles, mindfulness is defined as a purposeful, non-anxious, reflective presence that can be applied to any aspect of practice. More than an occasional flash of insight, mindfulness is a state of mind that permits insight, presence, and reflection. Mindfulness applies equally to cognitive, technical, and interpersonal aspects of medicine, and invites a deeper examination of the process of care. Mindful practice includes core features: attentive observation, critical curiosity, "beginner's mind," and presence. Mindfulness can be recognized, and requires practice to become habitual. Although mindfulness is not taught explicitly in medical training, it is often invoked through clinical stories and by observing exemplary practitioners. Levels of mindfulness extend from mindless imitation to embodied presence, and are described in the text.

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My interest in mindfulness began over 25 years ago during my work as a performing musician, a practitioner of Buddhist meditation, and more recently as a practitioner of traditional Chinese medicine and "mainstream" family practice. I have come to believe that medicine has much to learn from the complex integration of knowledge, technique, and judgment that characterizes good musical performance, the stillness and silence that one experiences during meditation, and the integrative thinking characteristic of Chinese medical theory. However, one need not have a background in music, meditation, or Chinese medicine to understand, use, and cultivate mindfulness in practice. In all disciplines, from playing tennis to practicing medicine, mindfulness can be recognized, cultivated, practiced, and embodied. Although mindfulness is often not taught explicitly in medical training, it is often invoked through clinical stories and by observing exemplary practitioners.

Mindfulness is a purposeful, non-anxious, reflective presence that can be applied to any aspect of practice (Epstein, 1999). It involves "paying attention, on purpose, to one's own mental and physical processes during everyday tasks to act

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with clarity and insight," and "... leads the mind back from theories, attitudes and abstractions to the experience itself" (Varela, Thompson, & Rosch, 1991, p. 22), When practicing mindfully, clinicians approach their everyday tasks with critical curiosity. They are present in the moment, seemingly undistracted, able to listen before expressing an opinion, and able to be calm even if they are doing several things at once. These qualities are considered by many to be prerequisite for compassionate care (Candib, 1995; Goldstein, 1994; Noddings, 1984).

Mindfulness includes qualities that patients value in their medical practitioners, such as attentiveness, interest in the clinical problem, interest in the patient-as-person, clinical judgment, compassion, and presence. In contrast to the more easily measured aspects of healthcare, these attributes are more elusive. But as time constraints, financial issues, and administrative burdens have shifted clinicians' focus from healing of patients to the mechanics of healthcare, many practitioners have been searching to reacquaint themselves with the qualities that form the heart of medical practice.

Mindfulness is a concept borrowed from Buddhist psychology, first described 2500 years ago (De Bary, 1972; Kabat-Zinn, 1994). The concept of *mindful practice* also draws on diverse philosophical traditions (Dewey, 1958; James, 1975; Polanyi, 1974), as well as more contemporary formulations of the structure of professional knowledge (Eraut, 1994; Friere, 1998), learning (Schön, 1983, 1987), development (Gilligan, 1993), and intelligence (Gardner, 1993), which I described in a previous article (Epstein, 1999). More than an occasional flash of insight (Balint, 1957), or a structured reflective activity, mindfulness is a state of mind that *permits* insight, presence, and reflection, and also a habit of relating to the world. Mindfulness is not restricted to the socioemotional sphere; one can practice surgery, read a radiograph, and examine a skin lesion mindfully. I believe that mindfulness is a state that many good clinicians experience on a daily basis, but often they do not have words to describe it.

This article, and the inquiry about mindful practice in general, reflect my own curiosity about what I do when I am practicing at my best. I attempt to describe the habits of mind that accompany good clinical practice—habits that foster physicians' self-examination of their own motor, cognitive, and emotional processes. Means of cultivating mindfulness can be found in the literature on psychotherapy (Freud's free-floating attention [Freud, 1961] and Rogers' unconditional positive regard [Rogers, 1958]), studies of cognitive biases in medical decision-making (Feinstein, 1994) and some reports in the medical ethics literature (Quill, 1991). It involves a simultaneous engrossment in a task or a person (Noddings, 1984) as well as a recognition of one's own perspective. The habits of mind of skilled surgeons, perceptive psychotherapists, and exemplary diagnosticians have in common several core features, and by encouraging their development, several ends could be achieved including improved clinical outcomes, and a more conscious and personally satisfying way of practicing (Epstein, 2001).

Studying mindfulness in medicine involves describing subjective experience. So, in addition to reading descriptions of exemplary practice in order to examine further the process of mindful practice, I began by examining closely my own practice on two levels. First, I observed, as dispassionately as possible, my own actions, thought processes, and emotions in a similar way to observing the arising and dissipating of thoughts during meditation practice, or the kind of self-observation that one tries to achieve while practicing a musical instrument. The second part of the process was equally important. During everyday medical practice, I tried to take moments

to be aware of my own expectations, judgments, and categorizations.

In discussions with colleagues about mindfulness, many of them reported ways in which they had developed mindfulness in practice, and wanted to know more about how to cultivate mindfulness in themselves and others. In this article, I explore these habits of mind that are often quietly learned by those regarded as exemplary practitioners. I present several examples of where the lack of mindfulness, accompanied by self-deception or delusion, lead to medical errors or poor outcomes. Then I describe how characteristics of mindfulness can form a common foundation for relationship-centered care and evidence-based medicine. The second article will present ways in which mindful practice can be taught. I will draw upon my personal experiences, as well as the literature on cognitive science, education, and meditation.

MINDFULNESS AND DELUSION IN CLINICAL PRACTICE

In the Buddhist view, the opposite of mindfulness is delusion: "the tendency of the mind to seek premature closure...that quality of mind that imposes a definition on things and then mistakes the definition for the actual experience" (Epstein, 1998, p.126). Delusion leads to inattention to the obvious, over-concreteness, the misapplication of categories, and lack of presence. Consider the following situation:

Joanne Freese, a 44-year-old otherwise healthy woman with a long history of medically unexplained symptoms, mild depression, and childhood emotional abuse, presents with symptoms of fatigue and shortness of breath. The physician experiences a feeling of familiarity about the situation, and an embedded expectation that, again, the physical examination and diagnostic tests will show no abnormalities. This is a moment of risk of being inattentive, even to obvious physical findings by confusing the category (somatizer) with the experience (a person in distress). A curious practitioner might notice that something seems different about her, though. Sometimes this "something different" is difficult to describe; it belongs more to the realm of tacit personal knowledge than to explicit public knowledge. I am not sure if another physician, who knew her less well, would notice. The curiosity prompted closer observation that revealed that her breath sounds were diminished in both bases. The physician then had to think "outside the box" and develop a "beginner's mind" to solve the clinical problem. After all, she was defying the definition of "somatizer" by presenting a worrisome physical finding.

A few days later, after a chest X-ray showed fluid and an abdominal CT scan showed a large tumor, the diagnosis was clear: stage IV ovarian cancer. Preparing for a difficult session, the physician told Ms. Freese the "bad news" only to witness her expression of relief. She said, "Finally I understand why I have been feeling sick all these years." Notwithstanding that the physician knew that ovarian cancer could not possibly be the explanation for 20 years of symptoms, the difficult adaptation was changing a perception from a woman who would likely be devastated by "bad news" to someone who had been liberated by an explanation. In this circumstance, an unexpected patient response led the physician to open up rather than shut down, and to remove categories ("bad news") rather than enforcing them. Facing both diagnostic and interpersonal challenges, this physician's competence was defined by his ability to be mindful and to avoid delusion.

The concepts of mindfulness and delusion can be applied equally to evidence-based medical decision-making (Sackett, 1997), technical skills, medical ethics, and the patient-physician relationship (Candib, 1995; Tizon, 1988; Tresolini & Pew-Fetzer Task Froce, 1994). In all of these domains, professional competence depends on

being able to be curious and attentive during everyday practice. Evidence-Based Medicine describes a process of critical inquiry by applying data from studies involving groups of patients to the care of the individual patient. The inquiry begins with organized curiosity to formulate an important answerable clinical question, finding appropriate sources of information, evaluating the quality of that information, and then bringing the information back to the bedside to inform clinical actions. Although the method of refining and answering questions has been described in detail (Sackett, 1997), there has been little attention to the habits of mind (or biases) that lead an astute clinician to formulate a question in the first place.

Patient-centered Care (PCC) emphasizes understanding the patient as a person and encouraging a more participatory patient-physician relationship. PCC also starts with a process of critical inquiry, but in a different sphere: the interpersonal, social, and psychological dimensions. It, too, requires organized curiosity—about the physician's emotions and culture, for example.

The mindful practitioner acts *in* the world, not apart from it. Thus, even non-cognitive technical skills require mindfulness. Philosophers of education, such as Friere (1998) and Eraut (1994), emphasize how insights about oneself or about clinically-relevant evidence do not constitute professional competence until they are incorporated into daily practice. The tacit knowledge of being able to ride a bicycle, play rapid sequences on a piano, or tie surgical knots with precision depend on automating complex motor sequences. However, to teach and learn these sequences, astute self-observation and presence are required. Recent research in cognitive science indicates that all cognitive activity and technical tasks require involvement of the emotions (Damasio, 1994; Varela et al., 1991) on several levels. Emotions condition perceptions, rational decisions, and actions; patients whose emotional self-regulation is impaired because of neurological disorders also have disordered reasoning. It also appears that these task-related emotional-somatic interactions create the sense of an enduring Self, not the reverse. Thus, it would be more correct to say that mindfulness *is* enacted knowledge.

Ethical behavior depends on mindfulness. The small moments of everyday practice involve ethical decisions, such as deciding when to return a patient's phone call, or intentionally smiling at a new patient to show that he, and whatever problems he brings, are welcome (Borrelli Carrio, 2000; Drane, 1995; Epstein, 1999). Awareness of the tacit ethics of the moment allows the clinician to make those decisions more consciously, and conscientiously.

REFLECTION, KNOWLEDGE, AND MINDFULNESS

Reflective practitioners examine the schisms between what they think they do and what they actually do. Although sometimes these schisms represent simple self-deception, more often they represent dichotomies between *knowing in action* (Argyris & Schön, 1974; Schön, 1983), a body of personal knowledge based on experience, often tacit, and *espoused knowledge,* the explicit public knowledge that we *believe* to be the basis for our actions. For example, when I was a medical student, a neurologist teacher of mine emphasized the importance of doing a complete neurological exam (espoused knowledge). But then I noted that when he was seeing a patient for the first time across a crowded waiting room, he commented that this patient most likely had Parkinson's disease before speaking with or examining him (knowledge in action). Similarly, a clinician might suspect that a patient is depressed before gathering the data to support it. These "shortcuts," rather than signs of laziness,

might actually be efficient and effective means of focusing attention on clinically relevant data. However, these same clinicians were often unable to articulate *how* they knew what they knew. Their actions were informed by knowledge that was tacit and personal.

Lack of mindfulness in clinical practice can be perilous. Three examples illustrate this point. The first involves a physician who was unable to examine the lack of connection between her espoused values and her actions.

Bartz (1999) describes a clinician who understood and could articulate the principles of the biopsychosocial model. She chose to work with an underserved Native American population. She was aware of sociocultural influences on health and her patients' psychological well-being. But when she was invited to critically review audiotapes of a series of her encounters with a particular patient, another picture emerged. The physician seemed unable to appreciate the patient as a person, and the very accurately described biopsychosocial insights did not inform technically competent and compassionate care. Rather, she seemed cold, distant, and uncaring, and surprisingly oblivious to the effects of her actions. She knew *about* an approach to care, but did not know *how* to do it. The patient's experience of illness remained unknown to the physician, despite espousing a biopsychosocial model of practice.

The second example is of "multitasking" in an attempt to be efficient. Multitasking implies that there are two unconnected tasks that can be performed simultaneously. While folding laundry and talking on the telephone rarely would have negative consequences, when the two tasks are complex, multitasking may result in inadequate performance of either or both tasks. The inefficiency of multitasking is supported by recent neuroimaging studies that demonstrated that performing two unrelated simultaneous tasks lead to diminished, not enhanced brain activity (Just, Carpenter, Keller, et al., 2001).

During an annual physical examination, a physician began a sexual history while he was putting on gloves to do a testicular exam. The patient was standing, with his boxer shorts at his ankles, perched on the edge of the step on the end of the examination table, while the physician asked, "Do you have any concerns about AIDS or sexually transmitted diseases?" This was an experienced physician, and a good one. He did the testicular exam correctly, and was not making a bad start at a sexual history. But, he did not see the whole picture. Rather, the complex picture of the interaction was divided in his mind into two separate categories: the history category, which was learned in an interviewing course, and performed well; and the physical exam category, also done well. While he thought that he was multitasking, he was unable to appreciate the obvious connection between the two activities. Without the flexibility of mind to be able to suspend categorization of his work into two compartments, he could not see the absurdity of trying to elicit sensitive information at the moment when the patient was the most vulnerable.

The following example shows how inattention can result from over-concreteness and lack of curiosity.

A patient with a kidney infection was seen by an infectious disease fellow, who, on the basis of increased skin pigmentation, suspected adrenal insufficiency. The patient also had low blood pressure and fatigue, two other common symptoms of adrenal insufficiency. The attending physician agreed with the probable diagnosis and suggested the appropriate testing. However, neither lifted the patient's sleeve to note that the hyperpigmentation ended at mid-upper arm (she loved to spend time in her garden), and neither asked whether the patient chronically had low blood pressure (which she did). Simple errors such as these

are common, but both the attending and the fellow suggested further diagnostic testing even after their reason for pursuing the diagnosis had been disconfirmed.

The otherwise excellent physicians were unwilling to permit the patient to exit the category to which they had assigned her.

DISCOVERY AND BIAS

Philosophy of science and cognitive studies of emotion and memory have described several aspects of scientific generativity (Ciompi, 1991; Polanyi, 1974). First, creative science involves *tacit, personal* knowledge as well as book knowledge. Second, creative scientists are able to maintain a state of subsidiary awareness–a kind of peripheral vision–that enables them to use their tacit, personal knowledge when it might be useful. Third, the emotions are essential to learning; disruption of emotion-processing neural pathways hinders the use of acquired knowledge.

An example of the conscious use of subsidiary awareness is provided by Rudebeck, a Swedish family physician, who took on the task of understanding more about the essentials of the daily work of the general practitioner (Rudebeck, 1992). By doing a detailed study of his own practice, he noted that when patients reported symptoms, he responded not only verbally, but with his body. He would touch his own head when a patient reported a headache, for example. He "discovered" that he had been expressing *bodily empathy*. No one had previously used that word to describe the phenomenon, but when one looks at videotapes of clinical encounters with exemplary practitioners, examples of bodily empathy are common. It just took someone with curiosity and self-observation to discover an important element of clinical practice. It also required the examination and willing suspension of the mind's tendency toward categorizing before understanding.

Schön's model of reflective practice (Schön, 1993, 1987) describes how expertise is challenged when the practitioner encounters an unexpected outcome. According to Schön, this "surprise" prompts the reflective practitioner to stop, think, experiment, and then reflect. Then, a new approach informed by experience either produces more surprises, or changes the nature of the practitioner's tacit personal knowledge.

However, these surprises do not just happen. The obvious is too often ignored, or denied. The physician's emotions, biases, and premature categorizations lead to inaccurate assessments and errors even in excellent clinicians (Dimsdale, 1984; Mengel, 1987). Thus, identifying surprises depends on a method for cultivating habits of mind, for example, the habit of maintaining moment-to-moment awareness, and the ability and willingness to regard oneself as an object for study and reflection. These habits of mind should expand the clinician's tolerance of the unexpected and willingness to invite reflection, whether it is while performing surgical procedures or psychotherapy, and while engaging in evidence-based or ethical decision-making.

Discovery depends on the recognition of and accommodation to bias. Data is always filtered. As in the example of "adrenal insufficiency," observations can be interpreted as either irrelevant or essential depending on one's own perspective. Because bias is inevitable, (it is impossible not to have a point of view!), part of the problem of ignoring the obvious may be in the attempt to eliminate bias, rather than understand it. In that sense, being "nonjudgmental" is not the elimination of biases, opinions, and perspectives. Rather, it starts with an attitude of mind that allows the practitioner to consider and question multiple possibilities simultaneously (James, 1975), and progresses to a state wherein the observer includes self-observation as a component of every perception. Thus, a practitioner can develop curiosity about his or her biases rather than attempt to discard them.

HABITS OF MINDFULNESS

Attentiveness is on purpose, and not by chance. Seeing a crying child, a novice practitioner might attend to the child's distress, whereas an experienced clinician might empathize and also note the lack of tears—a sign of dehydration. This perceptual awareness can be cultivated.

Mindfulness is characterized by four habits that can be taught. First is *attentive observation* of oneself, the patient, and the problem. Observation includes looking for the unexpected as much as for the familiar. Attentiveness applies to central as well as peripheral vision. It involves observation of oneself to be aware of one's own filtering of perceptions. The habit of observing oneself allows examination of and adjustment to one's own perspectives and biases. It requires access to the "pre-attentive processing" (Polanyi, 1974) that allows us to form initial reactions; the same processing also is involved in the choice whether to place new information in the foreground or relegate it to the background.

The second habit, *critical curiosity*, is more than the curiosity of a child. Applying critical curiosity to oneself requires courage, because seeing the world as it is means not seeing the world as one would like it to be. This includes tolerating awareness of one's own areas of incompetence, and inviting doubt. For example, when a patient hesitates while answering a question, how often do we ask it again to make sure that we are not just getting the answer the patient thinks we want to hear?

The third habit is *"beginner's mind,"* an ability to see a situation freshly, with a willingness to set aside categories that had previously been created. It can be thought of as a state of "could-be," where doubt and uncertainty serve to maintain openness. Clearly, tolerating doubt and uncertainty requires effective management of anxiety. Beginner's mind is a "cultivated naïveté" (Dewey, 1958) that requires "taking off" of "intellectual habits"…that allows the clinician to inspect continually some of his or her own habits of mind. It is the creative ability to "hold contradictory ideas simultaneously" (James, 1975).

Finally, *presence* implies a connection between the knower and the known, undistracted attention on the task and the person, and compassion based on insight rather than sympathy. McPhee, in an address, *The Practice of Presence* (McPhee, 1997), describes presence as "something that reveals itself immediately in a look, a smile, an intonation, or a handshake;"…. "it reveals me to myself [and] makes me more fully myself ...."

LEVELS OF MINDFULNESS

The following Table lists some levels of mindfulness.

Table
Levels of mindfulness

Level 0:	Denial and externalization
Level 1:	Imitation
Level 2:	Curiosity and reflection (cognitive)
Level 3:	Curiosity and reflection (emotional)
Level 4:	Insight
Level 5:	Generalization, incorporation, and presence

Although limited empirical support links self-awareness to the acquisition of patient-physician communication skills (Smith, Dorsey, Lyles, & Frankel, 1999), these levels are presented as a "fragile theory" (James, 1975); if over-concretized, the construct may lose the flexibility that makes it useful. Mindfulness is more a recursive than linear, goal-directed process. While it would be convenient to present these as a hierarchy of "good" and "bad" behaviors, they might be better viewed as a typical developmental sequence

(but certainly not the only sequence) that ultimately changes perspectives and actions. Consider the following personal narrative.

When I was a medical student, I had the privilege of working with an excellent teacher of psychotherapy. I was soon aware of his use of facilitating gestures, expressive grunts, mm-hmms, and facial expressions that help patients disclose their concerns and feel heard. Initially, I tried to imitate his gestures and grunts (level 1). But at a certain point, I became aware that, although I was imitating a technique, sometimes I really did not understand the patient or why I was grunting. In its extreme, this behavior could become a tool that might give the illusion of understanding the patient, rather than knowing the patient in greater depth. The result would be paradoxical—distancing rather than encouraging presence with the patient. Later, curiosity and reflection initiated a process wherein I could critically examine my own non-verbal expressions and judge which were authentic and helpful (levels 2 & 3). Then began a process of experimentation and reflection (level 4) followed by incorporation of gestures that were neither his nor mine, until they are part of my own natural self-expression (level 5).

The sequence of imitation, curiosity, insight, incorporation, and presence applies equally to cognitive and interpersonal spheres of practice. "Connected knowing" (Belenky, Clinchy, Goldgerger, & Tarule, 1997), in which the knower applies both personal knowledge and affect to the process of intellectual development can apply equally to a connection with another person or to one's thinking processes.

CONCLUSIONS

The psychological insights of early Buddhist thought and the Western elaborations of these concepts can be readily applied to cognitive and emotional challenges of clinical practice. In this article, I have outlined some qualities of mindfulness that can be recognized, cultivated, and taught. In addition to providing the means to become more effective clinicians, mindfulness also has the potential to deepen physicians' satisfaction with practice (Epstein, 2001; Zoppi & Epstein, 2002). Physicians whose relationships with patients are more satisfying are also more professionally satisfied (Suchman, Roter, Green, & Lipkin, Jr., 1993). Similarly, physicians who have a method for deeper engagement in the cognitive and technical aspects of care will likely derive more satisfaction from their work. Steps for clinicians to become mindful in clinical practice are discussed in the accompanying article.

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