

FEATURE

AWARE

THE SCIENCE & PRACTICE OF PRESENCE

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ILLUSTRATIONS BY
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Science is now illuminating some of the ways in which we can see how cultivating our capacity to be aware enhances our health and relationships, transforming the molecules of our bodies and the quality of our meaningful connections with each other and the world around us. In this overview, we'll explore a number of foundational concepts inspired by weaving together a wide range of disciplines that reveals how the way we develop three aspects of our mental lives—attention, intention, and awareness—actually changes the anatomic, biochemical, and physiological components of bodily health, mental flourishing, and relational well-being. Here I offer these findings, which are summarized in my book, *Aware* (TarcherPerigee, 2018), and will share these ideas and their illustrations (created by my daughter Madeleine Siegel) in a way that will be an invitation into this exciting new way of understanding our minds.

PILLARS OF MIND TRAINING

Studies conducted over the last two decades have reached a maturation point where we can identify at least three pillars of mind training—sometimes called reflective practice, meditation, or mindful awareness practices (MAPs)—that are pivotal in cultivating well-being. These facets of training the mind include learning to focus attention, foster open awareness, and cultivate kind intention.

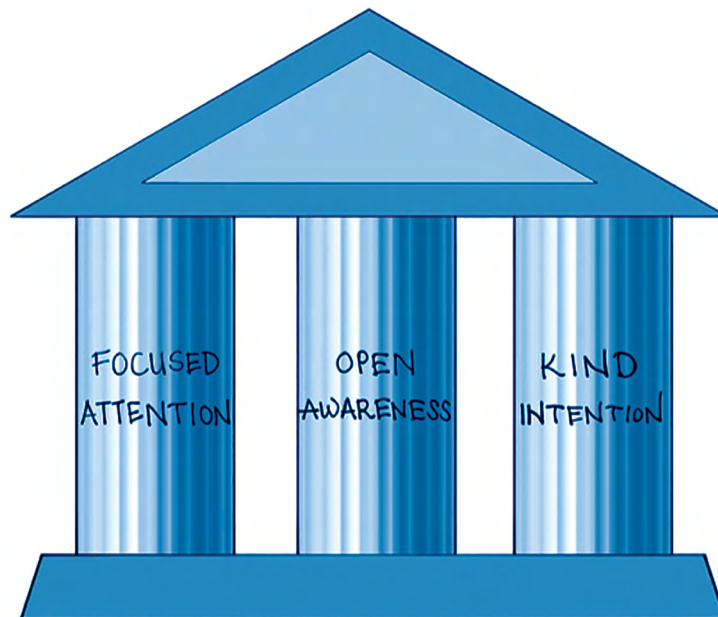
In the field of interpersonal neurobiology in which we find the *consilient* or common-ground findings of usually independent disciplines—such as from mathematics, physics, chemistry, biology, psychology, linguistics, sociology, and anthropology,

along with other fields in the arts and humanities—we view the mind as an emergent phenomenon of energy and information flow. When we train the mental process of attention, for example, we learn to strengthen how to direct the flow of energy and information. Much like a light focusing on a particular aspect of our experience, this ability illuminates and stabilizes what is being perceived so that we sense with more focus, depth, and detail.

FOUR FACETS OF MIND

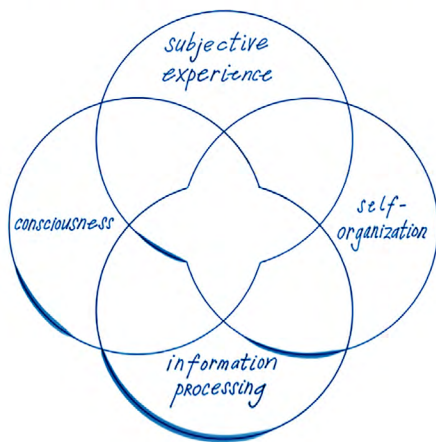
Cultivating this ability to focus attention (our first pillar) would then be a starting place for how to strengthen the mind itself. Although the term *mind* is rarely defined, we

Three Pillars of Mind Training



can at least describe the mind as having four facets, or aspects, that although they may be related to brain function, are not the same as neural firing. These four facets can be summarized this way:

FOUR FACETS of MIND



Each of these facets may be emergent properties of the system of mind that can be viewed as energy and information flow that happens inside the body (including the brain in the head), as well as between the body as a whole and the entities outside the body (such as in our connections with other people or nature). This relational aspect of mind can be simply viewed as our interconnections with people and the planet. What is being connected? Energy and information flow is being shared as the fundamental nature of our relationships. In this way, we can see that we have an “inter-mind”, the mind that

emerges in the betweenness of our relational lives; and we have an “inner mind” emerging from bodily energy and information flow—and this is what happens not just in the brain in the head, but as a flow that is fully embodied. In this way, we see the mind as both relational and embodied.

Beyond the wondrous ability to be aware (consciousness), and to then have a subjective felt sense within that consciousness (subjective experience), we also have the third facet of information processing that happens with or without consciousness. Much of our thinking, for example, is not within awareness. Four E’s are sometimes used to describe this process of information flow, sometimes called “cognition”, identifying it as embodied, enacted, extended (beyond the body), and embedded (in our relational communication with others in the culture in which we are immersed).

Our fourth facet of mind may actually serve as a definition that helps us to identify what a “healthy mind” might actually be. When we define this fourth facet as *the emergent, self-organizing, embodied and relational process that regulates the flow of energy and information*, we can then ask: “What conditions enable optimal self-organization to arise?” Self-organization is a mathematical concept of complexity theory, a view from the probability exploration of systems that has the three features of being open, chaos-capable, and, most importantly, non-linear, in which small initial inputs to the system have large

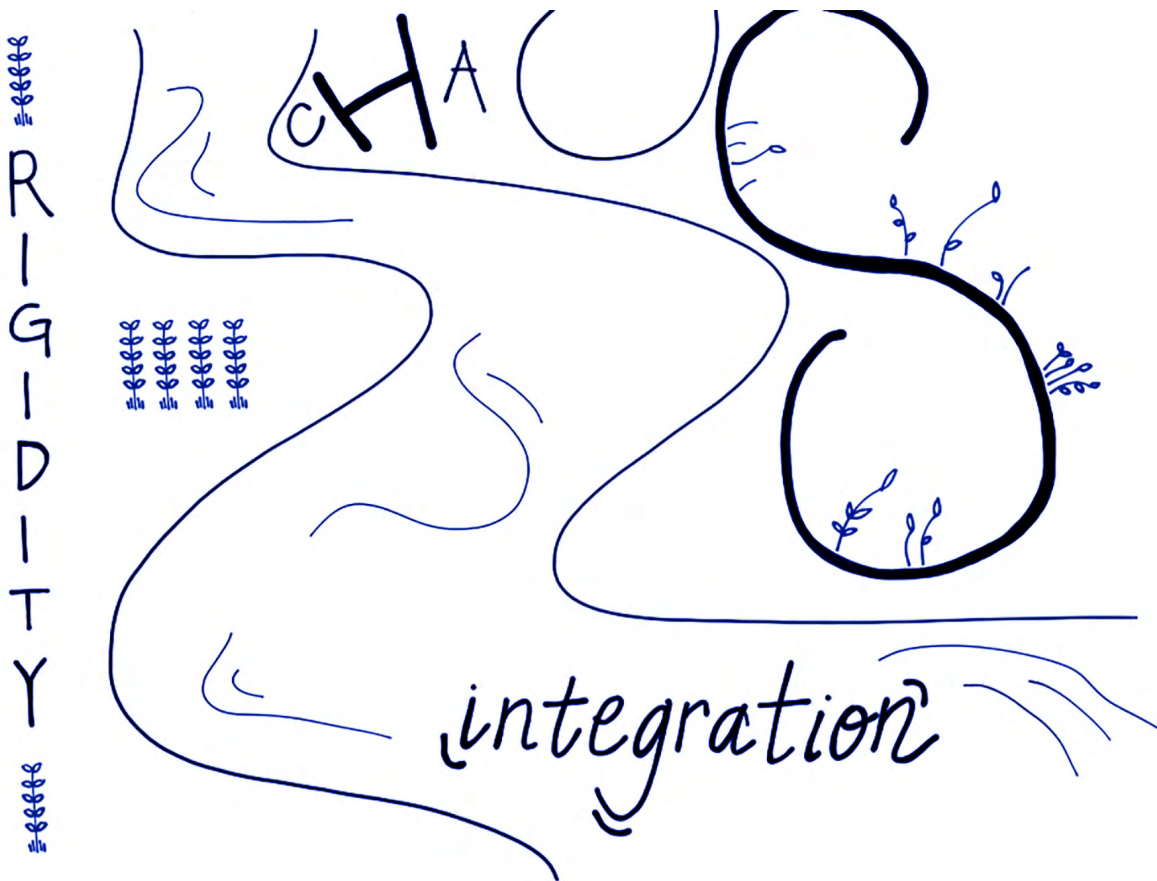
and, on the surface, difficult-to-predict results. Complex systems have emergent properties arising from the interaction of the fundamental elements of the system. In the case of our lives, we are proposing that the system of mind is energy flow, and at times a subset of energy flow has symbolic value, something we call “information”. Information is really “energy-in-formation” that stands for something other than itself.

INTEGRATION

Self-organization, mathematics suggests, is optimized to create harmony by having a balance of two disparate processes: one is *differentiation*, or things being unique and specialized; the other is *linkage*. We can use the term integration in our own differentiated

way to name this balance. Integration, as we are using the term here, is composed of the linkage of differentiated parts. When integration arises, a synergy emerges in which the whole is greater than the simple sum of its parts. Integration optimizes self-organizational complexity. When integration is impaired by blocking either linkage or differentiation, or both, the system moves toward chaos or rigidity, or both.

This concept can be viewed as a “river of integration”, in which the distinguishing features of the flow of integrative harmony are flexible, adaptive, coherent, energized, and stable (represented by the acronym FACES). Here is what that flow looks like on an image of a river:



Of note is that mental disturbance seems to fit into this pattern of chaos or rigidity which are the characteristics of what are called “symptoms” of the various psychiatric syndromes. At this moment, every study of individuals suffering a mental disorder has revealed impaired integration in the brain. Likewise, the best predictor of well-being across a range of measures is how well-integrated the brain is—as measured, for example, by the Human Connectome (<https://www.neuroscienceblueprint.nih.gov/connectome/>). The many differentiated areas of the brain and their linkages can be assessed in both functional and structural terms. A highly interconnected connectome indicates an integrated brain and is the best neural predictor of health. Such a pattern

makes sense if we see the mind in optimal functioning as emerging from optimal self-organization.

As a regulatory process, this fourth facet of self-organization suggests that the mind can be seen to have two functions, both of which can be strengthened. Mind training essentially teaches us how to stabilize monitoring and then learn to modify energy and information flow toward integration.

Meditation practices that have the three pillars of learning to focus attention, foster open awareness, and cultivate kind intention teach us how to strengthen monitoring and modifying and, in this fundamental way, strengthen our lives. When we see this as a way to enhance integration in our lives, we can understand how such mind training

monitoring
+ MODIFYING

REGULATING

can optimize self-organization and cultivate well-being.

THE WHEEL OF AWARENESS

A simple example of one practice that engages all three pillars is a meditation practice I developed years ago called the “Wheel of Awareness” (http://www.drdansiegel.com/resources/wheel_of_awareness/). I’ve offered this practice to many people, and from a study of ten thousand individuals in workshops around the world have found that their reflections on the practice reveal some fascinating insights into the nature of the mind, not only how we can cultivate awareness but also possible clues as to what consciousness may be all about. Here I will offer you some exciting possibilities, ones that may be on the right track or that may be wrong, but ones that might be worth considering in your own life and seeing how they might support your own growth toward enhanced well-being. These ideas are built from the careful accumulation of responses from this wide range of participants in the Wheel practice, a set of findings that arise no matter an individual’s history of meditation, cultural background, or educational training. Once these subjective reports were obtained, based on the common Wheel of Awareness experience, then a search for a possible consistent perspective on what the science might be to explain the subjective sensations was searched for and formulated. This proposal should be

considered with a skeptic’s eye, but so far, it seems to both fit the data and resonate with a wide range of experiences, from first-person immersions in a range of meditative practices to the wisdom of poets and philosophers from across the ages. Nevertheless, fitting with findings does not make an idea true; it just makes it something to keep on exploring for its accuracy and potential to help support our own understanding and growth. In the long run, I suggest you try out the Wheel as a practice yourself and see from a first-person experience what it is like. In that way, you’ll be able to dive into an immersion in awareness and assess whether the scientific proposal matches your actual experience. You are welcome to try out the Wheel practice at the website above.

The Wheel was created with two simple notions in mind that came from a long line of scientific and clinical reasoning: (1) integration is the basis of well-being, and (2) consciousness is needed for intentional change. Then the question naturally arose: “Could we integrate consciousness?” Around a table in my office that has a central glass area surrounded by a wooden outer rim, I would bring my patients up off their chair or the couch, and we’d imagine that the hub of this “wheel” was where we could place the *knowing* of being aware, and on the rim we’d place the *knowns* of consciousness—what we are aware of. Integration involves the differentiation of elements of a system and then their linkage. To integrate consciousness,

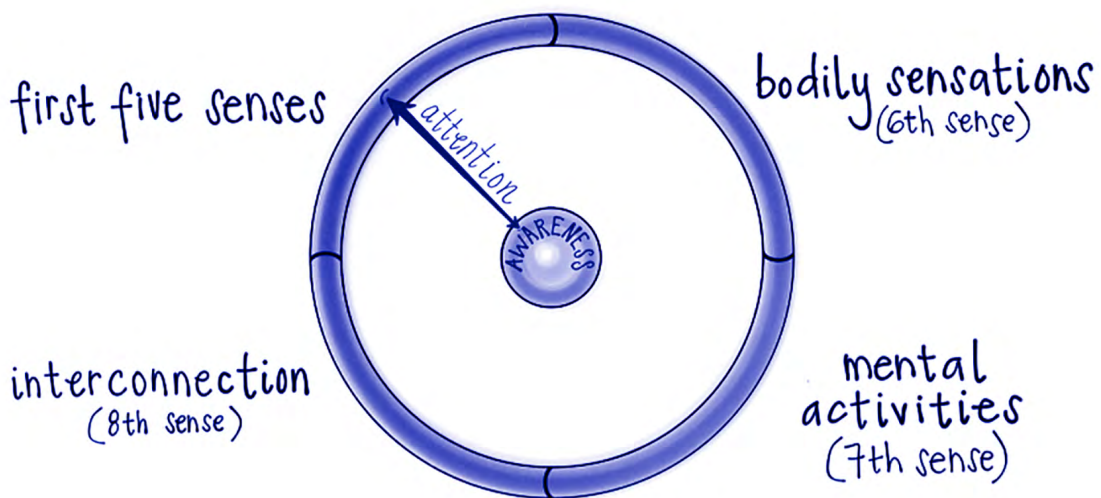
we'd systematically move a singular spoke of attention from the differentiated hub of knowing to the rim of the knowns. With this simple process, anxiety and mild to moderate depression would be reduced, and certain issues related to unresolved trauma would be more readily resolved.

Over time, this improvement with my patients' chaos or rigidity in their lives would be sustained, especially if they practiced the Wheel on a regular basis. They seemed to be integrating consciousness and cultivating a sense of harmony in their inner and interpersonal lives. The dissolution of chaos and rigidity seemed to fit with the notion that they would now have a more integrative flow

of energy and information in their lives. This fascinating pattern kept on emerging and motivated me to offer the Wheel practice to a larger audience than my individual patients. When my students (psychotherapists from many different schools of therapy) also found this practice helpful, both for themselves and their clients, I felt motivated to then try out the Wheel in workshops around the world, leading to the ten-thousand-person study. While every person is unique, there were common findings across the cultures and professional backgrounds of the individual participants that gave a sense of a universal window into the nature of the mind.

I took these results with me as I wandered

WHEEL OF AWARENESS



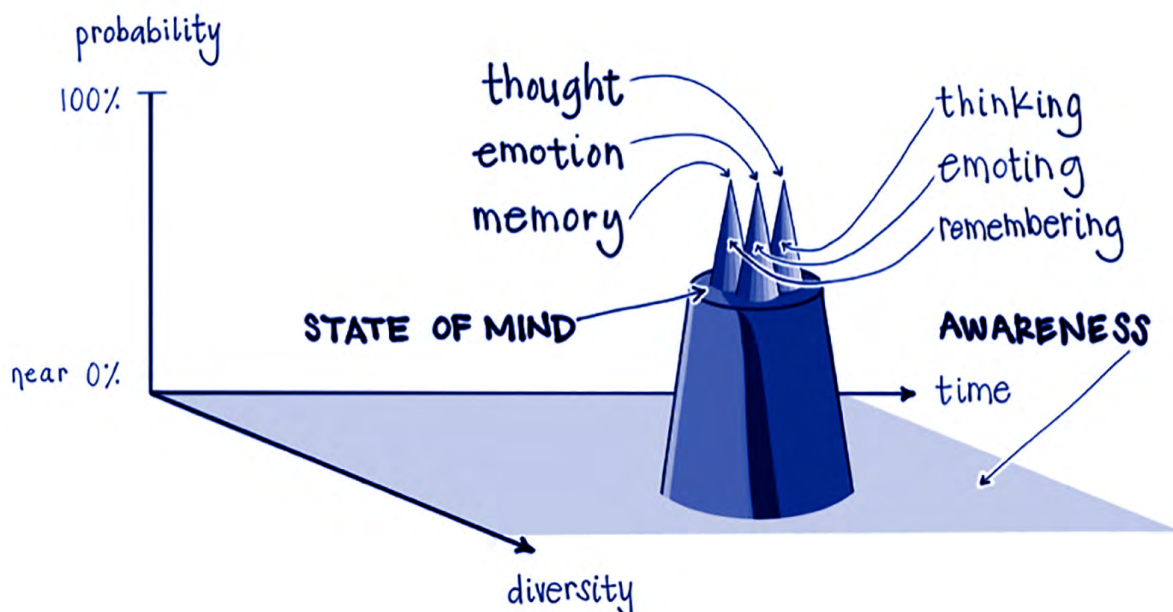
and wondered about how the proposal from decades ago—that the mind might be an emergent property of energy flow—could somehow relate to what the reports from the study were saying. I was offered the opportunity to spend quite a bit of time with experts in energy, in the field of physics, and from those discussions was able to discover from these scientists some fundamental notions of what energy is. Many of them said that *energy is the movement from possibility to actuality*. That mind-opening view of energy could then be carefully mapped out in a way that would illustrate this mathematical notion of movement—of something moving across a “probability distribution curve” that would reveal a span extending between near-zero probability at the bottom of the axis to one

hundred percent at the top. In workshops and in the book, *Aware*, I slowly build this graph so that for someone who may be considering this perspective for the first time, this often-abstract notion is gradually unpacked.

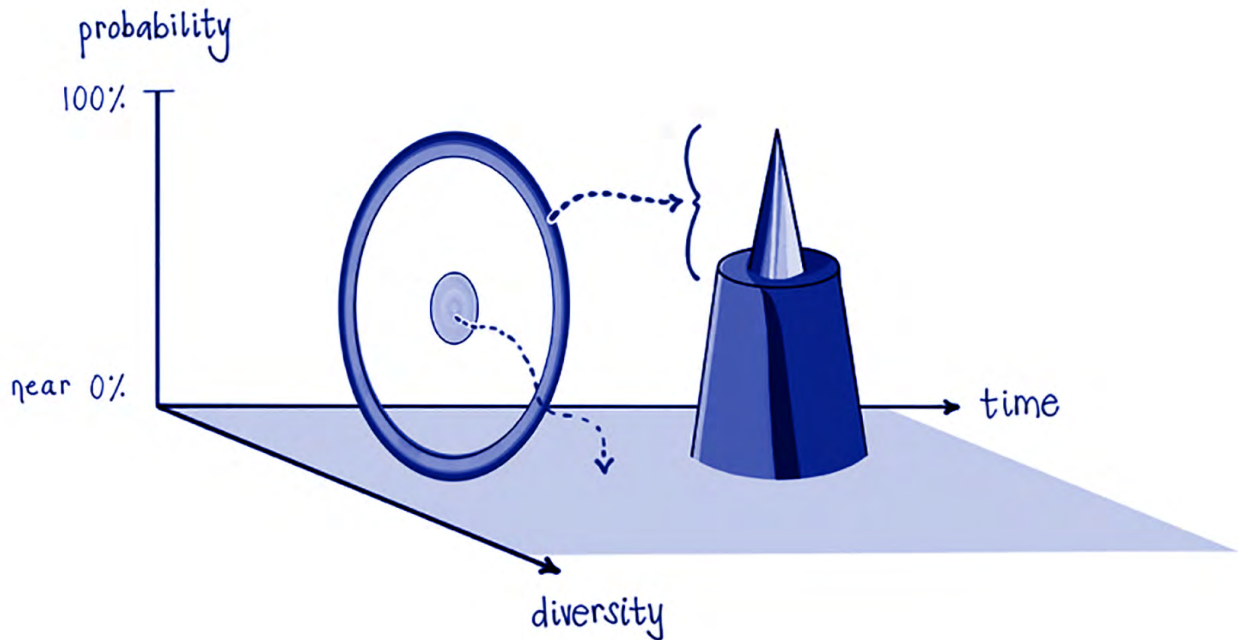
A summary depiction of the graph is illustrated below.

It is called a “3-P graph” as it contains a Peak of activation, such as a thought or memory, a Plateau of raised probability, such as a state of mind or intention, and a Plane of possibility, which may correlate with pure awareness. The 3-P graph of a potential mechanism of mind matches with the Wheel of Awareness meditative practice and visual metaphor shown on the next page.

3-P Diagram with State of Mind



3-P Diagram Meets the Wheel of Awareness



This mapping of mind onto notions of energy arising from a “sea of potential”, or *quantum vacuum*, that corresponds to this plane of possibility is consistent with quantum physics, though not stated by it. The quantum physicists I have presented this to, including Arthur Zajonc who is a former president of the Mind and Life Institute (<https://www.mindandlife.org/>) that studies meditative practices and the brain, are very enthusiastic about how this proposal might help us illuminate the nature of mental reality within the larger domain of universal reality in which we all live.

Some of the exciting implications of this proposal include the possibilities that the mechanism of being aware—this plane of possibility—is both the source of the knowing of consciousness (how and why, we don’t know) as well as the source of all options to arise. This plane is the formless mathematical space where all potential forms rest. In the book, I am able to present a deeper discussion of this place from which all energy patterns are thought to arise. We explore how issues of microstates and their lack of an arrow of time (or directionality of change) as well as their having features of probability found in

quantum physics rather than the certainty of Newtonian or classical physics. Even though you may not yet appreciate all these concepts, something extraordinary recently transpired. Someone who experienced the Wheel in a workshop actually brought me to Sir Isaac Newton's birthplace to offer the Wheel of Awareness to dozens of meditators around the apple tree where Newton had imagined the notion of gravity. Wild!

These deep dives into the probability nature of energy might help us understand a number of first-person, subjective reports of pure awareness—experienced in the “hub-in-hub” part of the practice when the spoke is bent around or retracted so that one experiences awareness of awareness itself—as having these commonly stated qualities of being: both empty and full; as wide as the sky; peaceful; infinite; love; god; eternal; timeless; joy; and filled with awe. Often there is the initial statement offered that no words can really describe what the hub “feels like”; then, with some hesitation and courage, these common descriptive words emerge. Some of my students who have attended many workshops remark that no one will believe that these statements, often with identical wordings, are repeatedly offered.

PRESENCE

It is an exciting time to link this new perspective on the nature of our minds, and in particular, on what consciousness

might be. From the point of view of healthy relationships and healthy mental lives, the metaphor of the hub of the Wheel with its corresponding potential mechanism, the plane of possibility, may illuminate the nature of what we can simply call “presence.” When we are present in life, we cultivate well-being in our lives. In many ways, the infinity of your plane, of your hub, is the same infinity as my plane. We find each other through accessing this hub of the wheel, of learning to live from the plane of possibility. Presence in relationships means being open to connecting with the differentiated nature of others—essentially our plateaus and peaks, the energy positions of our rims—and creating compassionate and respectful communication in linking to one another yet maintaining a differentiated sense of an inner self. In this important way, integration is more like a fruit salad than a smoothie: we maintain our differentiated nature and link; we do not become homogenized.

If you try out the Wheel, you'll find at the end the taking in of these differentiated perspectives on who we are. We conclude the Wheel practice with an invitation to consider what an integrated identity might be. We have an inner mind as an “I” or “me”; we have an inter mind as an “us” or “we”. But the way we integrate our identity is to differentiate and link these important aspects of the who, what, why, where, when, and how of our identity: me plus we equals “MWe”. MWe can create a more integrated way for each

of “MWus” to live together. Presence is the portal through which such integrative ways of living may arise. Presence arises from the plane of possibility.

Presence refers to our inner lives as well, as we are open and receptive to whatever arises. In Wheel terms, we can rest in the hub and essentially say “bring it on” to whatever might arise from the rim. Research suggests that when we live with such presence, we

- optimize our telomerase levels so that we repair and maintain the ends of our chromosomes;
- improve our cardiovascular risk factors;
- reduce inflammation by altering epigenetic regulation of the inflammatory response;
- reduce the stress response;
- enhance our immune function; and
- cultivate more integration in the brain yielding more functional regulation of such processes as emotion, attention, and behavior.

Not bad for training the mind with focused attention, open awareness, and kind intention!

FINAL THOUGHTS

As research unfolds, we may find more pillars to add to our training of the mind and see how they may fit into the fundamental notion of integration as the core mechanism of well-being. When we learn to access the hub of the Wheel of Awareness, we are diving into the integration of consciousness that can bring deep and lasting well-being into our embodied and relational lives.

Try it out, and let me know how it goes for you!

For more in-depth discussions and instructions, please see our website offerings on *Aware* at DrDanSiegel.com/Aware.