

BOOK REVIEW

Quantum Mind – The Edge Between Physics and Psychology

Arnold Mindell, Portland: Lao Tse Press, 2000. 595 pages. (ISBN 1-887078-64-9)

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In a single volume, Arnold Mindell brings together psychology, physics, math, myth, and shamanism – not only mapping the way for next-generation science but also applying this wisdom to personal growth, group dynamics, social and political processes, and environmental issues. Beginning with a discussion of cultural impacts on mathematics, he presents esoteric but plausible interpretations of imaginary numbers and the quantum wavefunction. In this context he discusses dreams, psychology, illness, shape-shifting (moving among realities), and the self-reflecting Universe – bringing in not only shamanism but also the Aboriginal, Greek, and Hindu myths and even sacred geometry from the Masonic orders and the Native Americans. The book is enriched by several psychological exercises that enable the reader to subjectively experience mathematics (counting, discounting, squaring, complex conjugating), physics (parallel worlds, time travel), and shamanism (shape-shifting).

Much of the book is a journey through non-consensus reality (NCR) – the world of imaginary numbers, complex wave functions, virtual particles, and individual subjective experiences such as dreams, feelings, emotions, telepathy, fleeting thoughts, fantasies, sudden intuitions, and near-death experiences (all termed “dreams” in Mindell’s parlance). In various cultures, the NCR experience has been associated with the etheric or astral body, the shadow reality, the dance, the Ka. It is in NCR that ghosts, virtual particles, or anything else can exist, since nobody can disprove them, and space and time are experienced nonlinearly (“time flies” or “time is dragging”). In contrast, consensus reality (CR) is based on collective agreement and scientific authority.

From several vantage points, Mindell makes the case that CR is not the only reality. First, he notes the profound roles that culture play in mathematics and thus in physics – specifically, in the aggregate that one perceives. With powerful examples including cultures that value sons more than daughters, he presents the concept of “discounting” or marginalizing. Proposing that numbers represent only an interaction between the counter and a CR, he also suggests that simply choosing a physics experiment helps determine the outcome. Thus, our counting co-creates the “objective” (CR) Universe. As Mindell contends, however, reality is CR plus NCR, that which we count plus that which we marginalize. Citing Gödel’s proof that no axiomatic mathematical system can prove its own consistency and completeness through (CR) deductive reasoning – and its implications for physics – Mindell bolsters his case for a reality greater than CR alone. Examples pervasive throughout the book associate imaginary numbers with NCR and complex numbers with a CR + NCR awareness field.

Mindell further observes that scientific theories themselves are not totally objective but are based on CR terms and concepts, can be CR verified (by experiment), are consistent with other (CR) known laws of physics, and marginalize phenomena that we are not ready to observe. Echoing the anthropic principle, he notes that the physical universe can never be known

independently of human measurements and choices of what to measure. Recognizing that in times past, ghosts were more CR-accepted than were particles, he even argues that the views of nature also change with changes in CR. Today, virtual particles are “acceptable ghosts.”

Turning to psychology, Mindell notes that contemporary practice often takes only the “real part” of an experience, its CR attributes that can be verbalized and thus shared with others. Other parts are marginalized – somewhat in analogy with the double slit experiment, in which observation of the electron in transit collapses its wavefunction into an “awakened” or localized particle, thereby marginalizing its wavelike behavior and its other possibilities for manifestation. In Mindell’s view, the NCR part of a dream, in analogy with the imaginary part of a complex wavefunction, can have observable consequences. Extending the concept further, he suggests that reality itself has a hidden, dreaming background.

Mindell extends the concept of “virtual particles” to psychology, to include the shadow, the self, the parent, and the inner child, together with the thoughts entering and leaving one’s head and the fuzzy, unclear signals (gestures) that circulate around the intended signals. People rarely notice these signals unless they “energize” them with awareness. In analogy with physics, the auras from people’s signals bump into one another and provide a basis for interpersonal attraction and repulsion. Even if “virtual particles” (CR terms for entities that are not well understood) don’t really exist in psychology and physics, they explain things – and as NCR entities cannot be disproven.

Quantum Mind presents additional analogies. Mathematical addition is amplifying an experience. “Squaring” amplifies an experience or a number according to its own nature. For example, moods become better or worse in a self-generating way. Calculus is immersion in the flow with an awareness only of the moment, outside of CR time and beyond measurement. Complex numbers symbolize higher symmetries in the universe, and their own mirror image symmetries are depicted in Navajo and (Native American) Delaware sacred symbols. Comatose states and certain psychological disorders are compared to black holes and their event horizons.

Additional central themes of *Quantum Mind* are nonlocality and the unbroken wholeness. In shamanic or traditional wisdom, everything was interconnected and part of one family. The sky was “grandfather,” the sea was “grandmother,” the earth was “mother,” and everything was a part of “me.” Mindell notes that in modern times, Bell’s experiment has corroborated this interconnectedness by demonstrating quantum entanglement of photons. An additional consequence is nonlocality, in which a system’s subtle properties depend on the whole and cannot be analyzed in terms of components (particles). Extending these concepts to psychology, Mindell notes that people are also interconnected and seem to know about one another at some level, irrespective of distance. One’s identity influences and is influenced by those around him or her, and personal development is connected with global transformation. Mindell further develops a quantum mechanical view of group dynamics and even politics – specifically, that opposites between people such as moods or viewpoints provide balance by resulting in a total “spin” of zero.

It is partly in this context of non-separability that Mindell challenges the CR concept of reality. He notes that in NCR, there is no consensus regarding temporal order of events (as when

two people communicate nonphysically) and that time itself is a CR idea for which some peoples such as the Hopi have no word. He further asks whether one first observes a tree or counts an electron or whether the tree or electron first asks to “catch one’s attention” – and whether the latter possibility might account for the relationship between the choice of an experiment and its outcome. Attempts to measure the signals destroy the “dreamtime” in which they are experienced. Synchronicities, or “quantum flirts” experienced as coincidences, are relative – functions of one’s NCR framework, with one or more events not experienced in some frameworks. This “relativity,” Mindell contends – together with the limiting speed of CR signals – accounts for some of the difficulty in proving parapsychological phenomena. He further suggests that this network of NCR signal exchanges is as “real” as are objects and people and that the sentient roots of consciousness may lie within this network of relationships between the observer and the observed. Everything is alive through “quantum flirts” with everything else – a point with which indigenous peoples might agree, since in their view, everything is a living being with an awareness process similar to that of humans. One can see only because one is seen.

Creation myths are discussed from the standpoint of the Big Bang and NCR. Considering the possibility that the Big Bang happened in imaginary spacetime (the existence of which cannot be disproven in CR), as Stephen Hawking has proposed, Mindell suggests that the Big Bang can be experienced in NCR and that Dante, the Egyptians, and others envisioned creation in this manner. The distant past and far future, including one’s other incarnations, have an NCR-like character. Thus, Hawking’s view can be understood as the Universe beginning with dreams, with imaginary time, and with it reflecting upon itself to create “reality.” Similarly, in one’s personal life, dreams and curiosity precede moments of creativity.

In Mindell’s view, a crucial aspect of individual and group work, and of shamanism, is role-switching – a shape-shifting in which one discovers the aspects of oneself that he or she has marginalized. Personal identity in CR arises from marginalizing one’s sense of interconnectedness, that “enchanted state.” While separation facilitates knowledge through detail, the marginalization that occurs in CR can also lead to discrimination and struggle. Furthermore, dreams are potentials that go beyond one’s CR identity, and marginalizing an experience at variance with this identity is akin to disregarding “out-lier” data points. Conversely, people are identical in NCR, and any one person is too whole to be only one role. People are reflections of one another and need to experience themselves as the other. Furthermore, through the Universal Mind, one has equal access to all of his or her aspects in time and manifests tendencies toward completeness. Mindell suggests that history will change when people have awareness of both interconnectedness and social issues, of diversity and sameness. This awareness that marginalizes no one can be developed only with the help of the entire community and does not occur in a life of solitude.

Mindell sees beyond conventional CR paradigms in medicine, psychotherapy, and physics. It is in these CR paradigms that NCR experiences are marginalized (often limiting the effectiveness of conventional medicine against chronic problems), patients are diagnosed in terms that are causal and reductionistic (to be treated by localized interventions), therapists remain detached from the emotions that connect them with their clients (whom they attempt to return to linear spacetime), and physicists treat themselves as detached recording instruments. In

place of these paradigms – and “alternative medicine,” as we know it – Mindell proposes a non-dualistic, experience based approach, in which a practitioner sees an aspect of himself/herself mirrored in the patient. The shaman represents this kind of observer.

Building on the visions of Wolfgang Pauli, Carl Jung, and David Bohm, Mindell speculates on exciting new directions for psychology and physics, with profound implications for epistemology and ontology. In his view, the next level of understanding will be based on nonlocality and unbroken wholeness at the outset. Dreaming will be seen as the Universe’s background process, more fundamental than elementary particles, ego, or self. Next-generation mathematics, physics, and psychology will be based on the nonlocal sentient awareness itself as the fundamental “reality.” They will encompass the experienced world as well as the measured world – and matter will have attributes of consciousness or at least non-measurable attributes, as perhaps hinted by Galileo, Leibniz, and some neurophysiologists.

In next-generation physics, symmetry principles and uncertainty principles may be more fundamental than CR space and time, and symmetry principles in turn may have their origins in self-reflection. Mindell even suggests extensions to both physics and psychology that are based on higher symmetries, for example, between “me” and “not me,” “observer” and “observed,” or even CR and NCR. Similarly, the new medicine and psychology might incorporate its own relativity, in which one might have a physical or mental “illness” in CR but not in the NCR framework. In social and political matters, Mindell predicts a new kind of social awareness that will result from a dual (CR+ NCR) awareness and shape-shifting. As physics, psychology, medicine, and even politics go over the edge that split material reality from the quantum mind, people will be freer to be their whole selves – real and imaginary.

Quantum Mind is at the forefront of a paradigm shift that may be unprecedented in scope. In large measure, the book was possible because of Mindell’s brilliant insights and his rare capability to identify relationships among several areas of knowledge – relationships that escape notice (in CR) by many others. He communicates concepts from diverse fields in an effective, exciting, and reader-friendly way. For example, he uses metaphors that will help some readers appreciate nature more – Alice in Wonderland to compare CR with NCR, a juggler to illustrate shuffling symmetry, highway speeding to illustrate the uncertainty principle, and athletic fields to explain mathematical fields. One chapter even presents a historical perspective, discussing the marginalization of the spirit during the Renaissance, in which “objective science” replaced Church dogma as the repressor of personal experience. Nuggets of perennial wisdom, familiar to many people on paths of self-development, come alive as *Quantum Mind* relates them to mathematical and scientific principles. The book is a must-read, not only for those exploring the exciting new possibilities in the physical, medical, and behavioral sciences but also for anyone on a path of self-development – as is everyone, in a sense. Complete with its practical exercises, this book is not only read but also experienced.

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