

Book Review

A review of *The Embodied Mind: Cognitive Science and Human Experience*, by Francisco J. Varela, Evan Thompson, and Eleanor Rosch, 1991. Cambridge, MA: The MIT Press, 308pp. ISBN 0262720213. \$30.00 USD.

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Cognitive scientist Francisco J. Varela, philosopher Evan Thompson, and psychologist Eleanor Rosch in their book *The Embodied Mind: Cognitive science and human experience* seek to reconcile traditional understandings of the self as a grounded and unified subject with cognitive science that posits a more fragmented and situated view of the self. The authors base their radical conceptualization within phenomenology and Buddhist philosophy. Though the focus is on cognitive science, the authors' criticism of the mechanistic and representational assumptions in early cognitive science formulations as well as their emphasis on emergence are in line with recent approaches taken in complexity theory.¹

Several authors have studied the field of cognitive science from different perspectives. One notable example is Hayles' (1999) discussion of cybernetics and artificial intelligence. Despite the growing complexity-related literature base, *The Embodied Mind*, although written in 1991, still moves beyond many contemporary theoretical approaches and draws on mindfulness/awareness meditation to resolve the dissonance between science and personal experience. In a recent study, Auyang (2000) explores similar issues when she addresses the "binding problem" of cognitive scientists through an investigation into everyday experience. While fundamental concepts like consciousness or life itself have been the subject of investigation,²

Varela and his coauthors question the self by plunging into “the I of the storm” (p. 59).

Varela et al. begin their arguments by invoking “a fundamental circularity” of being in an apparently pre-given world that is, however, “not separate from us” (p. 3). They point out that Merleau-Ponty recognized this circularity and attempted to use his phenomenological perspectives to reveal a middle way or an *entre-deux* between science / experience, inner / outer, or self / world binaries. However, the authors maintain that Merleau-Ponty’s as well as Husserl’s and Heidegger’s phenomenological formulations break down because they remain abstract disembodied theories. Instead, the authors posit that what is required is “embodied (mindful), open-ended reflection” that relates directly to experience (p. 27). Thus they present Buddhist philosopher Nagarjuna’s mindfulness meditation to help address what they identify as a notable absence in traditional theoretical perspectives.

The authors’ text progresses as they discuss developments in cognitive science starting with cognitivism where cognition involves the representation of an outside independent world. According to them, in this mechanistic information-processing model of the mind, the focus on computational processes that the cognizing subject is not and cannot be aware of implies a fragmented consciousness, which is contrary to our experience. Next they examine connectionism or what they refer to as *emergence*. This alternative moves away from representation to emphasize self-organizational and emergent properties of cognitive processes that are context-dependent, which show close correspondence with the emergence of mental factors in Buddhist psychology. They claim that both Buddhism and connectionism address the question of how “phenomena usually attributed to a self could arise without an actual self,” which can lead us to the realization of the groundlessness of the self (p. xix). However, they contend a more radical approach is needed, as connectionism does not take the further step of interrogating the stability of “not-self” or the world.

To address this noted absence the authors introduce a theory of *enaction* based on the philosophical concept of hermeneutics, which implies “the *enactment* or *bringing forth* of meaning from a background of understanding” (p. 149). The concept of enaction integrates the Cartesian divide through interdependence of the perceiver and the environment. As we enact a world, we are necessarily also embodied in it: knowledge involves creative cognition arising from the interconnections between our bodies, language, society, and the world. By *embodied* the authors refer to the necessity of a physical body whose sensory-motor experiences result in cognition.

The authors draw upon the concept of “natural drift” to counter the argument that the kind of structural coupling between an organism and its surroundings that is evident in enaction can be explained by the theory of

“optimal fit” in evolution. The authors point out that within the field of evolution, alternative views exist that refute the optimal fit argument. Natural drift is one of these alternative perspectives, which posits the particular evolutionary path followed by organisms as one path that exists among many possibilities. The path chosen in turn determines the lived history and ultimately cognition as embodied action of the cognizing subjects. Thus, there is no predetermined path or ultimate ground, and this causes the authors to explore Buddhist meditative practices to address the philosophical issue of groundlessness. Delving into mindfulness/awareness meditation, the authors discover an illusion: they find ego to be a construction of our consciousness that serves to shield us from the fear of *sunyata* or emptiness—the lack of essential self or ground. In conclusion, Varela and his co-authors state that such meditative practice is important because

[t]aking groundlessness as negative, as a loss, leads to a sense of alienation, despair, loss of heart, nihilism. The cure that is generally espoused in our [Western] culture is to find a new grounding... In Buddhism, we have a case study showing that when groundlessness is embraced and followed through to its ultimate conclusions, the outcome is an unconditional sense of intrinsic goodness that manifests itself in the world as spontaneous compassion. (p. 253)

In other words, they observe that ego grasping is a human tendency as the absence of any ground or reference point can be deemed threatening. Within Buddhist philosophy such a vision is transformative, as mindfulness/awareness meditation makes the habitual ego-clinging nature give way to compassion.

Thus, through a conversation between Eastern philosophy and Western thought, the authors claim to resolve the conflict between human experience and cognitive science. The author’s endeavor to integrate these discourses is commendable and the various issues are well discussed. However, in attempting to address several audiences, their argumentation does not always remain rigorous and at times falls into a circularity and the mixing of metaphors from different discourses that may be incompatible. While frequently referring to Buddhist meditation practice as the only systematic inquiry into these issues, they acknowledge that Lacanian analysis is an exception, but surprisingly do not discuss it any further. At the same time, the book is interspersed with passages from a wide variety of discourses like neuroscience, linguistics, psychology and artificial intelligence, whose inclusion appears at times to be a digression rather than an informative addition to their arguments.

At a more fundamental level, the problem that Varela and his coauthors seem to have is that though science denies a fixed self, it has not explained the phenomenon of ego-grasping. Moreover, the authors argue that science

needs to be cognizant of “the idea that the experience of mind... without ego-self, can be profoundly transformative” (p. 81). Despite this key belief, it is doubtful that inner experience can ever be the topic of scientific inquiry. One possible reason is that it cannot satisfy the criteria of falsifiability as put forward by Popper (1968).

Thus, although the book examines cognitive science from an innovative and fresh perspective by introducing the concepts of embodiment and enaction, for most skilled readers *The Embodied Mind* would remain a collection of abstract ideas from meditation and cognitive science. A further notable absence entails the authors’ failure to discuss the limitations of their proposed solutions that they borrow from esoteric practices. For example, for educationists wanting to apply these insights in a pedagogical setting there may arise religious, moral, and cultural impediments. Such practices as advocated by Varela et al. might remain remote and inaccessible.

Endnotes

1. For a discussion of emergence in complexity, see Cilliers, 1998, Davis, et. al., 2003, and Fleener, forthcoming. In particular, Cilliers (1998) identifies connectionism as an example of complexity.
2. For example, Damasio (1999) explores consciousness through the connection between body and emotions. Capra (1996) asks “what is life?” drawing on complexity theories and cognitive science.

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