Book Reviews

***The Extended Mind*. Menary, Richard. Ed. (Cambridge, Massachusetts: MIT Press,2010). 382 pp. Paperback, ISBN-10: 0262014033.**

"WHERE DOES the mind stop and the rest of the world begin?" In their 1998 paper Andy Clark and David Chalmers raised this question and answered it provocatively: A cognitive system isn't just the brain and sometimes it is extended to include environmental entities; cognitive processes aren't all in the head and sometimes they are extended into the environment. Their argument has since excited a vigorous debate among philosophers and cognitive scientists. *The Extended Mind*, an anthology of 15 essays, presents a comprehensive analysis of, and the best responses to, Clark and Chalmers' hypothesis that if a cognitive system is extended to include environmental entities then the relevant cognitive processes are extended into the environment. Some of these essays clarify this hypothesis by offering further explications; others sharpen the issues involved in the hypothesis by providing the most recent criticisms; and still others attempt to develop the hypothesis by moving the debate in new directions. *The Extended Mind* is an overview of the latest research in the studies of the extended cognition. It serves as an introduction for those who are not familiar with the theory of the extended mind, as a valuable collection for those who are actively doing research on the extended mind, and as a thought provoking text for a graduate seminar in philosophy and cognitive science.

The study of extended mind is one of the main currents in the presently fashionable "4E+S" movement in cognitive science and philosophy of mind, where 4E+S refers to the embodied mind, the enacted mind, the extended mind, the embedded mind, and the situated mind. The 4E+S movement has grown strong enough to stand in sharp contrast to the reigning model of cognitive studies based on the computational theory of cognition. The anthology *Extended Mind* is a valuable contribution because it highlights two features of this intellectual movement: (1) functionalism is a philosophical foundation of the 4E+S conception, and (2) the enactive approach plays a pivotal role in 4E+S theorizing. Failure in recognizing or appreciating these two features often lead to misinterpretations and/or misunderstanding of the extended mind hypothesis and the failure have occurred in both pros and cons in the debate about the extended mind.

As the *Extended Mind* demonstrates, the debate revolves around Clark and Chalmers' main argument for the extended mind hypothesis that runs roughly as follows (chapter 2): If an organism and an environmental entity are coupled through their interaction to the effect that (1) the expected behavior would unlikely occur if the environmental entity were removed just as it would if part of the organism's brain were removed, and (2) that the environmental entity functions as a part which would be cognitive were it a part of the brain, then the coupled system is a cognitive system and the processes this system endures are cognitive ones. Most criticisms against the extended mind hypothesis target at the *coupling* principle and the *parity* principle apparently employed in this argument. Fred Adams and Ken Aizawa's essay (chapter

4) contends that Clark and Chalmers's argument commit to the so-called coupling-constitution fallacy to the effect that if an environmental entity is coupled with a cognitive agent then it constitutes a part of the agent's cognitive system. Robert D. Rupert's essay (chapter 14) employs something similar to Leibniz law of indiscernibility of 'identicals' and argues that neuronal processes and non-neuronal processes are not on a par because they are not sufficiently similar to be of the same kind—cognitive kind. In response to the criticisms both Clark (chapters 3 and 5) and Menary (chapters 1 and 10) accentuate and clarify the central commitment to functionalism of the extended mind hypothesis. The aim of the extended mind is to explain why some neuronal processes and some non-neuronal processes are so coordinated through their enacted interaction that they together function as a cognitive system. It is functionality and not location that matters when determining whether or not a process is cognitive. If a coupled process has a cognitive function then it does not matter where it is located—whether it is partly, or even mostly, located in the environment. A functionalist interpretation of the extended mind is the focus of Michael Wheeler's essay (chapter 11), where he argues that the extended mind is a kind of extended functionalism that takes non-neuronal entities and processes as constitutive of cognitive processes.

However, what makes the model of the extended mind an alternative to the reigning model of cognitive science is the enactive approach rather than the extended functionalism as the extended functionalism alone would be an extension of, rather than a competitor for, the standard cognitive science. Several contributors of the *Extended Mind* attempt to develop the extended mind hypothesis in the enactive direction. The key to the coupling of systems or the mechanism that creates a coupled system that constitutes a cognitive system in its own right is what Clark and Chalmers call "a two-way interaction" between human organism and the environmental entities. The two-way interactive link is cognitive because it is enactive in character. Epistemic actions enact the environment by making it aid and augment cognitive processes. Consequently, the environment is invited to play an active role in driving cognition. In other words, the environment is not simply waiting there to be cognized; rather, it can be enacted to participate in the process of cognizing. Robert A. Wilson (chapter 8) calls for the shift of focus from representations to activities of representing. John Sutton (chapter 9) suggests the complementarity principle that reconciles internalism and externalism and argues that internal memories and external memories can make complementary contributions to cognitive processes. Mark Rowlands (chapter 12) gives an account of extended consciousness on the basis of his notion of intentionality as a form of revealing activity that run through neural, bodily, and environmental processes. Since the enactive approach to cognition and mind seems a key to understanding of extended mind, an account of enaction is demanded. Such an account, however, is absent in the *Extended Mind*. The required account would have to articulate two crucial aspects of enaction: (1) to enact the environment for cognition is to make it continuously act/react on the organism and (2) to enact the environment for cognition is to establish some lawful relationships between the organism and its environment pertaining to cognition.

The idea of cognitive system as a coupled system enabled by enacted interactive link between the organism and the environment has two revolutionary implications for cognitive science and philosophy of mind. First, it makes claim about the elasticity of the mind—that the mind is no more permanent than waters; the mind is fleeting and portable or "ephemeral" as Robert Rupert describes it (chapter 14). The mind may be expanding and contracting alternately. It may expand, as in the case of perceiving, beyond the brain and beyond the body; and it may shrink, as in the case of self-reflecting, into the brain; all depend on the cognitive task and the system requirements it demands. This elasticity implication appears inconsistent with the received, reigning notion of the mind as an individual with stable, persisting, and long-standing properties and capacities (Rupert, chapter 14). In response to this problem, Clark (chapter 3) argues that the coupled system, though portable, is nonetheless reliable, while Menary (chapters 1 and 10) suggest a distinction between long-standing dispositional capacities and exercising of those capacities on various occasions. Both have the faith in Parmenides sitting behind Heraclitus; but this faith seems to impede any revolutionary move.

The faith in permanence embraces the belief in enduring subject. Who is the cognizer in the case of cognitive process performed by a coupled system built on enacted interactive link between the organism and the environment? For John Preston (chapter 15), this is the issue of first-person authority. If a coupled system consisting of Lu's brain, body, and an environmental entity makes a cognitive achievement, then according to Preston, it is Lu, the person, who makes the achievement and hence it is the person who should be given the epistemic credit for the achievement. Extended mind theorists split on this issue; some (e.g., Rowlands) agree with Preston while others (e.g., Clark and Chalmers) attribute the cognitive achievement to the coupled system. The latter is making a revolutionary move by pushing in the direction of abolishing traditionally established conceptual distinctions between the mental and the physical, between subject and object, and so on. Not only is the mind elastic, but the self/person is also elastic. Thus, the coupled system is the person at the point of coupling. There isn't such thing as a persistent mind or self-existing as a bare substratum. Moving from elastic cognition to elastic mind and to elastic self is not easy; *The Extended Mind* is instrumental in helping the reader make these moves smoothly.

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