

Reply to a Reply:

Ogi and Gaddam's reply to my review of their book *Journey of the Mind* covers a lot of ground. Little of it, alas, deals with the issues I raised. It is largely an expansion of Steven Grossberg's "Resonance" theory which, of course, played a prominent role in the book. I have no problems with Grossberg's model. It is an interesting, influential, quantitative approach to human cognitive functioning that uses neural nets to capture the operations of "modules." But it's not going to result in an understanding of the origins of minds. It also, as noted in my review, seriously lacking in key features such as embodiment, movement, affect, development, aging, and socialization.

It is not the complete theory of the human mind that Ogi and Gaddam appear to believe it is. For one, it does not "enable theorists to discard conjectured mental entities ... such as ... conscious cells." The sentient cell is a central feature of my CBC theory. It is also a fundamental element in a variety of approaches to cell biology and, as argued in a variety of recent publications and books, a necessary feature of the first unicellular species. Without sentience the original prokaryotes would have been Darwinian dead-ends. Without valenced perceptions and directed, volitional movement they could not have survived the tumultuous environment they emerged into.

But the book has "Journey" in the title and my problem was with the nature of the trip they took us on. The early sections are, as noted, "muddled" when it comes to the functions of species that lack nervous systems. The material on cell biology is wrong in many places. The "emergentist's dilemma" is not even acknowledged. They claim that species without nervous systems cannot have an existential consciousness but provide no reason why this should be true. Did things change when neurons evolved? Of course. But things changed many times over geological time: eukaryotic species, multicellularity, photosynthesis, oxygen-production, warm-blooded metabolism, legs, etc.

I appreciate that Ogi and Gaddam " ... wrote *Journey of the Mind* to present accessible versions of URT's key ideas to a popular audience." But they didn't do that until the second half. And, when they made this move to Grossberg's theory, the sole focus was on human cognitive functions not the earlier evolutionary mechanisms that preceded the emergence of *Homo sapient* minds.

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