

# Autopoiesis, enactivism, and the extended mind

Michael Wheeler

Department of Philosophy, University of Stirling  
m.w.wheeler@stir.ac.uk

Two strands of recent embodied theorizing about cognition that are commonly held to be in harmony are actually in tension. This tension arises, in part, from the different ways in which the two positions in question — the extended mind hypothesis (EMH) and enactivism — conceive of the relationship between life and mind.

The history of enactivist ideas, plus a recent presentation of the view by one of its architects, Evan Thompson, suggest that the autopoietic theory of Maturana and Varela is a non-negotiable component of enactivism. An autopoietic system is a self-organizing autonomous system that, through its own endogenous activity, produces and maintains a physical boundary that distinguishes that system as a material unity in the space in which it exists. According to Maturana and Varela: (i) any living system is an autopoietic system; (ii) any autopoietic system is a living system; (iii) cognition is viability-maintaining activity in a domain of interactions defined by an autopoietic system's organization; (iv) enaction is the process by which significance is brought forth through the viable structural coupling of an autopoietic system with its environment.

Against this background, one striking claim made by autopoiesis theorists is that living is cognition. A natural way of hearing this claim (one that Maturana and Varela themselves often seem to recommend) is as asserting that the living system is identical with the cognitive system. If we add to this identity assertion the independently plausible thought that the living system (the organism) will be bounded by its skin, the implication is that, for the enactivist, the cognitive system is bounded by the skin. However, according to EMH it is possible for things and processes located beyond the skin sometimes to count as the proper parts of a cognitive system, which means that the boundary of the cognitive system may sometimes extend beyond the skin. So, it seems, the enactivist cannot endorse EMH.

The enactivist might reply that I have painted an impoverished picture of the relationship between life and cognition, as she understands it. Varela, in later work, depicted cognition as a process of sense-making. Di Paolo has argued that to explain sense-making, raw autopoiesis (autopoiesis as described above) must be supplemented with a capacity for adaptivity, itself established on the basis of an autopoietic organization. As I understand him, Di Paolo holds that being a raw autopoietic system is necessary but not sufficient for being a cognitive system (for realizing sense-making). However, since being a raw autopoietic system remains necessary and sufficient for being a living system, being a cognitive system remains sufficient for being a living system. So if our reconstructed enactivist did try to sanction EMH, she would be claiming (a) that an extended cognitive system is an autopoietic system, and (b) that an extended cognitive system is itself (it does not merely contain) a living system. Claim (a) is debatable and claim (b) violates our highly plausible thought that living systems don't extend. The enactivist still cannot endorse EMH. Enacted minds are not extended minds.