



Reply to Ghin: Self-Sustainment on the Level of Global Availability

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Of all the current philosophical attempts to rescue the concept of “self” by working out a weaker version, one that does not imply an ontological substance or an individual in the metaphysical sense, Marcello Ghin’s is clearly my favorite. His reconstruction of the original theory is absolutely accurate and without any major misunderstandings. Enriching the concept of a “SMT-system” with the notions of “autocatalysis” and “self-sustainment,” and adding the intriguing idea that we are systems reflecting these processes on a new level of complexity, namely with the help of an integrated PSM on the level of conscious experience, seems the way to go if one wants to keep the concept of “self.” I have great difficulties in writing a reply to Ghin’s commentary, simply because I agree with so much in it. Let us see where his approach leads us.

In a recent paper, Jordan and Ghin flesh out the idea further: they envision consciousness as a “contextually-emergent” property of self-sustaining systems (Jordan and Ghin, in press). While I have serious doubts about their careless use of the concept of “emergence” (which in the end is not compatible with a naturalist world-view), I am intrigued by the way in which the PSM could be linked to a more comprehensive theory about the recursive scaling-up of self-sustaining, energy-transformation systems. In particular, Jordan and Ghin analyze self-sustaining systems as “embodying” the contingent contexts that initially made their emergence necessary. In searching for a notion of embodiment that is independent of the concept of autopoiesis, they end up with the concepts of *strong metabolism* as proposed by Boden (1999) and the notion of *autocatalysis* as proposed by Kauffman (1995). The idea seems to be that self-organizing systems evolved the additional capacity for self-regulation and thereby turned into self-sustaining systems. By internally representing or “embodying” the physical properties

and the functional contexts in which they evolved and which makes their existence possible, such systems generate content. That is, representation and reference really are processes in which internal states constitute embodiments of external states, or of what these authors call “contingent contexts.”

It is not entirely clear to me how Jordan and Ghin want to take the step from content to consciousness, but it is easily conceivable how a complex, self-regulating biological organism generates an *internal* context. For instance, homeostasis and the constant, ongoing process of metabolic autoregulation could constitute such a context—these are problems a successful, self-sustaining system constantly has to deal with. What I called first-order embodiment (1E) in my reply to Shaun Gallagher’s commentary could easily be understood as a process in which a reactive physical system (like Tarry II) begins to embody the external physical conditions of its current environment, of the landscape in which it moves around. In this weak sense, the functional architecture of such a system is truly *about* the ecological niche in which it developed. But Tarry II has no metabolism, and our little walking robot certainly is not an autocatalytic system as well. However, it is highly conceivable that, once metabolism, homeostatic autoregulation, and autocatalysis are added, a system begins to explicitly represent this *inner* context in the form of second-order embodiment (2E). Such a system would then be *about* itself as well, because it would form an integrated, internal representation of itself as a whole, a representation portraying global properties of the system, like the fact that it *is* an autocatalytic system, or the fact that it *needs* fuel, air to breathe, and so on. It would now have an explicit representation of its own *internal* context, in principle enabling it to perform explicit computations in it.

Much of what Jordan and Ghin write in their recent publications is still quite sketchy, but it opens an intriguing new, dynamicist perspective on the self-model theory of subjectivity. A self-model may be something that emerges in a specific class of self-sustaining systems if and only if the internal functional context created by these systems has become so complex that the self-sustaining causal network of micro-events constituting them necessarily becomes “embodied” in the sense proposed by Jordan and Ghin. Highly speculative as it is, this model might give us a new angle on the evolution of self-models: at a certain level of complexity, the life process instantiates global properties (like autocatalysis), and higher levels of integration can only be reached if these properties are functionally mirrored in the systems *as* global properties. And this is the point at which simple, unconscious self-models necessarily appear. I like the way in which Ghin opens a new perspective on the evolution of self-models. What I do not see, however, is the connection to conscious experience: how exactly, in this theoretical model, would 2E lead to 3E?

References

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