Review of: "Empiric Systems Theory – An Experimental Approach"

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In my formation years, as a physicist with a cybernetic orientation, I thought of myself as working in a line dictated by some tenets of systems theory, as systematised by Maturana and Varela on one side, and Arbib on another side, as famously exemplified by the study of the predator-prey cycle, and as put to work in the design of interactive systems by the Scandinavian school, with Pelle Ehn being the prominent figure here.

Having matured as a computer scientist, the system perspective is still present both when I am analysing / designing / teaching software systems and when engaging in what goes under the notion of nature-inspired computing, where computational models are abstracted from interactions in living systems.

With this two-pronged background, which has in common the preliminary step of drawing a boundary (and this very act marks the possibility of discourse in the work of Spencer-Brown) between what is considered the system under design or under study / simulation, I have some difficulty getting my bearings in this approach. Part of my disorientation became clear when Heidegger was listed as one of the sources. While going through the reading, not an easy deed due to the denseness of the prose and the distance from what I usually read, I actually felt an absence at several steps, namely that of a dialectic view.

It seems to me that the formation of systems is posited here as an unavoidable consequence of the being-there of its components, which are somehow reduced to their potential for being in that system, overseeing the possibility that an agent can be drawn to the formation of several systems at the same time (depending on an Epicurean-Lucretian clinamen, if you wish), or that it is actually participating in several systems, possibly of different nature and scale at the same time. But these components, agents as they are referred to in this work, are systems of systems on their own, which can participate in more complex systems only if this does not affect their capability of maintaining their identity (autopoiesis, if you wish). Similarly, systems seem here to continue to work as they were formed, but there does not seem to be much consideration of the internal contradictions which can develop inside the system if the energy required to preserve its identity surpasses that which is produced/saved by its acting as a whole. Indeed, the energy and resource balance required to preserve the system does not seem to enter this model.

Also, it is not completely clear if we have a way of distinguishing what are called here “semantic systems" from other kinds of systems, or from general systems altogether. Are we limited here to systems with some attached meaning? Does the meaning come from its participants or from some external coercion/observation, as is almost always the case for systems

where their component agents are humans? And, more importantly, from a pragmatic view, how do we recognise the emergence of a system (or, again, how do we draw the boundary between what we consider the system and what we consider its environment)? And once we have identified the system, how do we perform observations on it in such a way that we are sure we are observing the same system, or even that the phenomena we observe are produced by the system at all? Again, I do not recognise here notions of input and output alphabets, state, state transition function, or output function, which are typical of the systems approach in what was once called cybernetics but which still drives the modeling of dynamic systems in computer science. While I recognise that the author may deem these as insufficient for the view of systems adopted here, still we need some form of measurement/operationalisation to make the approach work.