Sherman. Discussion

Sherman, Jeremy (2017) Neither Ghost nor Machine: The Emergence and Nature of Selves. Forward by Terrence Deacon. New York: Columbia University Press.

Jeremy Sherman is a colleague of Terrence Deacon, the author of Incomplete Nature: How Mind Emerged from Matter (2012). Sherman and Deacon are both interested in how life emerged from non-life, and both pursue the topic from the same general perspective. Sherman's book is a summary and elaboration of Deacon. In this discussion, I will not recapitulate Deacon's and Sherman's account of the emergence of life. Instead I will explore certain aspects of their perspective that speak to the role of nonmaterial entities in human life and science.

Sherman defines self/selves as all beings, organisms, individuals or agents that operate with aims and purposes. He observes that non-life, the inorganic world of physics and chemistry, operates via cause and effect. In contrast, with life, selves em2erge that maintain means-to-ends behavior. They do this via processes of self-regeneration which takes three forms: self-repair – regeneration which outpaces the second law of thermodynamics and thus maintains the body; self-protection – degeneration and regeneration of protective tissue such as skin, bark, cell membranes; and self-reproduction –through procreation in which the selves' reproduction capacity is inherited by the selves' offspring. (33)

The physical world is ruled by the second law of thermodynamics in which physical entities become disorganized, degenerate, and dissipate. But selves in the biological world constrain such entropy through self-regeneration by which they maintain their existence and produce new

selves, and by being self-directed, they do work for their own benefit i.e. work that is self-serving. There is a circularity to means and ends. The means for self-regeneration are the ends of self-regeneration in order to preserve self-regeneration. Thus the purpose/aim of the self is self-regeneration.

Selves have “functions, purposes, values, meaning, intention, and significance” (17). In terms of symbolic reference, I would classify these terms as labels for nonmaterial symbolic concepts. The concept is nonphysical; the concept, as a concept, is unobservable. It gets its meaning from its relation to other concepts. “The physical sciences can explain what happens in their realms exclusively in terms of cause and effect, but the life sciences can’t account for behavior as cause-and-effect phenomena. Organisms aim. Organisms function. Brains interpret even if just by spoken implication, the life sciences cannot explain what happens in their realm without means-to-

ends concepts" (18-19). In addition, although he uses the terms "aims" and "purposes" to characterize life and cells, he doesn't reify them. Sherman uses these terms to index a constellation of words that refer to the same or similar concepts: "functions, purposes, values, meaning, intention, and significance" (17), "Wants, ambitions, values, desires, intentions, appetites, goals, yearnings, aspirations, will, hopes, purposes, and preferences" (42). This effort is very important because there is a tendency to see terms as having a one-to-one correspondence with the thing to which they refer and to unconsciously assume the word has a physical instantiation in the world.

Sherman captures the nonphysical nature of concepts nicely: "You know you have aims and the moon doesn't. But have you ever seen an aim? You see consequences of aims, but never the aim itself. An aim has no mass, volume, or charge. It's neither a material object or a physical force. You know that aims' existence

depends on materials for example, neurons and neurochemicals. But the aim isn't these materials" (21).

Sherman notes that "scientists have expressed ambivalence about addressing the mystery purpose, sometimes treating it as outside the scientific purview, sometimes treating it as already or soon to be solved or dissolved by scientific discovery" (12).

My issue with respect to science and selves (with aims and purposes) is the nature of our understanding of these phenomena. Mind, knowledge, love, will, morality, and values are nonphysical symbolic concepts related to the notions of self and purpose. We may be able to know how they came about, but will we be able to reach a scientific fact-based final analysis of how they operate physically and culturally? If they are the same entity at the neurobiological level, do they become different as they are elaborated over time symbolically and culturally

in psychological, sociological, anthropological, economic, and cross linguistic use and investigation? Perhaps we might question how much traditional scientific cause-and-affect experimental research will contribute to our understanding of these means-to-ends symbolic concepts as they exist in the symbolosphere.

Sherman notes that this distinction between the cause-and-effect realms of physics and chemistry and the life sciences' means-to-ends domain is not consistently observed; cause-and-effect accounts are imposed on and/or adopted by the life-sciences. Because of the success of the physics and chemistry, and less success in the social sciences with cause-and-affect explanations, they are viewed as soft science (as opposed to the hard/exact sciences).

So Sherman rightly observes that there is a lack of a bridge between the natural sciences and the life sciences, but I would also add that it is necessary to make a bridge between the life

sciences and the non-physical world of symbolic concepts. I am suggesting that part of the mind is nonphysical, and the question becomes how the physical brain and body generate the nonphysical aspects of mind which include ideas, idealizations, ideologies, concepts, conceptualizations, and indeed the concept of mind itself and the means-to-ends concepts of purpose, aim, knowledge, will, morality, values, intentions, meaning, significance, persuasion, sensation, feeling, yearning, care, love, and mediocrity etc. These entities are grounded in molecules and physical forces, and they often result in purposeful activities, but they are not physical entities; they emerge from the physical, but they are not physical themselves.

Sherman implies that a solution to the problem of selves and purpose would allow a full integration across scientific disciplines. But I would suggest there might still be a divide between the natural sciences and the life sciences because social science must deal with

nonphysical/nonmaterial symbolic entities such as acculturation, identity, justice, emotion, motivation, self, and purpose. These are means-to-ends entities that are grounded in imputation, interpretation, and assertion which are not amenable to cause and effect understandings that characterize the natural sciences and that are deemed the gold standard in science.

Certain questions thus arise. Do the constraints that allow selves and purpose to emerge produce areas of human existence that resist cause and effect explanations while at the same time the non life physical sciences are not capable of means and ends accounts? Are they in some way non-commensurate? Do means-to-ends entities require a different epistemology? If so, what would such a theory of knowing look like? I imagine that it would look like the arts, the humanities, and what are now called social "sciences". Could these avenues of inquiry allow us to explore life and mind without trying

to force them into a cause-and-effect epistemology?

The basic purpose of life is to maintain it, and that purpose is characteristic of humans, the symbolic species, who live as much in a nonphysical, symbolic world as they do in a physical/material world. Would our understanding of the species be better served by studying it through the arts, humanities, social studies, and biology, but without trying to reduce it to the latter or, worse, to the inorganic physical world?

As laid out in the introductory essay, Deacon's theory is based on Piercean semiotics, and Sherman distinguishes between potential and interpreted signs. Nothing in the physical world interprets signs. Only living selves do. This becomes especially important among humans who live in a profoundly semiotic world in which language is the major vehicle for symbolic reference. Anything can be a potential

sign, it only becomes a sign when it is interpreted as such by a self. “A stop sign doesn’t cause us to stop unless we crash into it. A stop sign is instead a potential sign that some selves interpret as signifying they should stop.… Potential signs are open to various interpretations. For example, a stop sign, for you, might be interpreted as about traffic safety, not getting a ticket, too much government intervention, or slowing down to enjoy life. Interpretation is unpredictable in ways that cause-and-affect events are not” (61).

Sherman sees signs as interpreted according to for-ness and about-ness, i.e. selves interpret potential signs with respect to the significance of circumstances for themselves given their aims. Signs are always subject to multiple and incorrect interpretations. The absence of an expected sign can also be a sign. In contrast, the absence of cause cannot produce in effect.

Aims are focused, directed, channeled, and constrained to accomplish some work that is of value or significance for the organism in relation to its circumstances. Humans with language are able to name their aims, and the names have a range of possible referents. So the symbolic world is steeped in ambiguity and uncertainty. As a result, humans tend to interpret events as cause and effect phenomena. Sherman notes that Newton's laws are highly reliable; they allow us to make predictions that have a higher probability of being correct. That is why the physical sciences are a comfortable place to be, but they are also, to a certain extent, devaluing of the arts, humanities, and social sciences where interpretation must be the vehicle for understanding.

Both Deacon and Sherman explore changes that eliminate possibilities rather than increase possibilities. They are interested in the nature of change and in dynamics that result in fewer or

less likely dynamics than what had existed previously. Sherman uses the example of a natural riverbed that constrains the flow of a river. But if the river were to overflow, the riverbed would no longer be constraining the river completely, and it would open the possibility of the emergence of new dynamic paths to constrain the water in new ways, and the original riverbed might even disappear.

Sherman argues that such changes are natural, but they are not physical. The change in probabilities in the dynamic pathways "does not have mass, volume, charge, parts, or any of the other attributes we associate with material objects. The natural world thus includes once-likely, now unlikely paths not attended to from the materialist perspective. Changes in likely paths are natural, just not material." (108).

Sherman's view is a departure from the materialist perspective that characterizes the physical sciences. Materialism refers to "the

doctrine that nothing exists except matter, its movements, and its modifications. Materialism is the basis for a eliminativism, the argument that material cause and effect explains everything, or at least is the only kind of explanation that we should count as valid. Materialism is irresistibly intuitive. It has been firmly and formally embraced since the scientific revolution" (107).

Some scientists reject the notions of aim and purpose and believe that everything in the universe can be explained by dynamic processes with no goals. Sherman argues that the symbolic concepts of self, aim, purpose, function, value, interpretation, and information are real qualities of life and are unique to life. The result is that living dynamics behave radically differently from inanimate dynamics. He says,"[These] nouns point to neither material parts in the machinery of life nor to ghostly immaterial objectlike non-objects –vital force, soul, or spirit

that animates the living. Rather they point to the constraining consequences of emergence of self-regeneration" (196).

End-directness (aims, goals, foresight, anticipation, final cause) is the bane of science. The cause and effect processes of the inorganic physical world lack foresight. All selves anticipate. The social sciences can't avoid references to foresight and anticipation. In human planning we construct objectives and imagine their possible risks. Sherman suggests that because of this Telos (end-directedness), they are considered soft sciences. He notes that Deacon would not have us eliminate Telos from the social sciences because the Telos is real. Bacteria anticipate (not consciously).

I would also suggest that recognizing and legitimizing end-directness and its anticipation

as characteristics of human life makes them proper areas of inquiry in the behavioral sciences. It is only scientism that would exclude the Telos from human enterprises. What then does this mean for the notion that research on nonphysical concepts can never reach a final answer, an absolute truth?