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Title: The Natural Emergence of (Bio)Semiotic Phenomena

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Abstract: Biological organisms appear to have agency, goals, and meaningful behaviour. One possibility is that this is mere appearance, where such properties are not real, but only 'as if' consequences of the physiological structure of organisms. Another possibility is that these properties are real, as emerging from the organism's structure and from how the organism interacts with its environment. Here I will discuss a recent theory showing that the latter position is most likely correct, and argue that the theory is largely consistent with the basics of the field of biosemiotics. The theory can be represented as a triad that resembles the semiotic triad proposed by Peirce, which connects a sign with its object through a process of interpretation. In the theory presented, the sign is an internalized version of fitness (i.e., expected reproductive rate) which refers to the true fitness through a feedback loop that in effect produces interpretation. The feedback loop entangles deterministic and stochastic forms of causation in such a way that genuine agency, goal-directedness, and their associated meaning emerge. It produces a strong form of emergence not reducible to its constituents. The result is that novel phenomena arise that are real and necessary components for a complete understanding of living organisms.

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