

References:

(One shot introduction)

- Polanyi, M. (1968) Life's irreducible structure. *Science*, 160: 1308—1312.

(Classics and context)

- Bechtel, W., & Abrahamsen, A. (2005). Explanation: A mechanist alternative. *Studies in History and Philosophy of Biological and Biomedical Sciences*, 36: 421—441.
- Simon, H.A. (1962/1969) The Architecture of Complexity. *Proceedings of the American Philosophical Society*, 106: 467—482 [Reprint in H.A. Simon (1969) *The Sciences of the Artificial*, pp. 193-229].
- Mitchell, M. (2006). Complex systems: Network thinking. *Artificial Intelligence*, 170 (18): 1194—1212.
- Gilbert, S. & Sarkar, S. (2000). Embracing Complexity: Organicism for the 21st Century. *Developmental Dynamics*, 219: 1–9.
- Fox Keller, E. (2007). A clash of two cultures. *Nature*, 445: 603.
- Varela F (1997). Patterns of life: Intertwining identity and cognition. *Brain and Cognition*, 34(1): 72–87.

(Advanced specialized reading – speaker publications)

- Moreno, A., Ruiz-Mirazo, K & Barandiaran, X. (2010), The impact of the paradigm of complexity on the foundational frameworks of biology and cognitive science. In: C. Hooker & J. Collier (eds), D. M. Gabbay, P. Thagard & J. Woods (Series eds) *Complex Systems*. Vol. X of the D. Gavia, P. Thagard & J. Woods (eds) *Handbook of the Philosophy of Science*. Elsevier. pp: 311-333. In press.
- Solé, R. V., Ferrer, R., Montoya, J. M. & Valverde, S. (2002b) Selection, Tinkering and Emergence in Complex Networks. *Complexity*, 8: 20—33.
- Longo G., Montévil M. Protention and retention in biological systems (submitted for publication).

(Additional online resources)

<http://www.di.ens.fr/users/longo//download.html> (see in particular: sections 3 - Theoretical Biology and 4 - Interfaces Computability, Physics and Biology).