

FITNESS

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The evolutionarily relevant fitness concept, semiotic fitness, should ideally measure the semiotic competence or success of natural systems in managing the genotype-envirotype translation processes.¹

The concept of fitness as it is used in evolutionary biology carries with it a strong flavour of sociomorphic modelling. Every facet and quality of an organism is transposed to one absolute and quantitative measure of success: the number of viable offspring. Jesper Hoffmeyer makes an attempt to domesticate the fitness concept in semiotics by introducing the term *semiotic fitness*, which is defined as the measure of success of an organism in interpreting information, using its biological inheritance for doing so, and in relation to the given ecological context. With this new perspective, the center of activity has clearly shifted – for while in classical evolutionary biology, an organism remains the passive object of selection pressures, in Hoffmeyer’s interpretation, ‘life’ becomes the centre of active interpretation and translation. This shift makes the concept of *semiotic fitness* harbour a certain affinity with James Mark Baldwin’s (1896) concept of *organic selection* or F. John Odling-Smee’s (1998) concept of *niche construction*.

Perhaps the most puzzling and intriguing aspect in the citation above, however, is the use of the word *translation* in this particular context. Hoffmeyer develops this line of thought further in his essay ‘Origin of species by natural translation’ where he specifies the concept of natural translation as referring to “any process whereby a

¹ Hoffmeyer, Jesper 1997. Biosemiotics: Towards a new synthesis in biology. *European Journal for Semiotic Studies* 9(2): 355–376 (p. 370).

potential message is made accessible to a natural system that would not otherwise be capable of making sense of this message” (Hoffmeyer 2003: 335). In more traditional usage, however, ‘translation’ is considered to take place between two languages, codes or repertoires. Thus, the blending of genetic and environmental information in the translation concept that Hoffmeyer offers may lead one to wonder: “What exactly is translated into what?” Is it the organism’s genetic information that is translated into the code of the environmental context? Is the organism’s phenotype a result of this translation? Perhaps we can receive some help from the ideas of Juri M. Lotman, who has noted, in the context of cultural semiotics, that when two different semiotic systems start communicating, they tend to establish a common semiotic ‘personality’ and emergent new dynamics on a higher structural level of the system (Lotman 1992: 114–115).

In the biological realm, this ‘new level’ could be described as the lived expression of an organism in its environment, manifested in meaningful adaptations and correspondences, communicative interactions and behaviours (this would include, for instance, colourful mimicry adaptations, interspecific alarm calls, and many other examples belonging to the category of *semethic interactions* in Hoffmeyer’s (2008: 189) terminology). Consequently, ‘semiotic fitness’ could be expressed as the significance of the organism’s lived expressions in the ecosystem, as its success in triggering new semiotic activities and processes, or at least its potential to do so.

Paradoxically, if ‘semiotic fitness’ is understood to describe semiotic processes as interpretations or translations whose outcomes influence the survival of individuals and species, then *semiotic fitness* could hardly become a measure comparable to the *biological fitness* concept. This is so because semiotic processes are essentially qualitative, open to future semioses and interpretations, and their significance or value cannot be determined in any given moment. Similar to Peirce’s *final interpretant*, that can be expressed as the sum of all possible outcomes of the sign (CP 8.184, 8.314), ‘semiotic fitness’ would be expressed in all *future* semiotic processes that spring from a particular activity of an organism. If there is anything to be measured, then, it is not the success of this activity, but its failure – and therefore, perhaps, *semiotic unfitness* could be a more appropriate concept for semiotics.

Hoffmeyer, too, takes note of such restrictive aspects of the concept, when he reminds us that: “[I]f the semiotic fitness of a natural system, in the sense of a semiotically integrated dynamic unit, is low, other such semiotically integrated units will tend to capture a share of their flows of matter and energy, and ultimately such units would tend to disappear” (Hoffmeyer 2003: 343).

References

- Baldwin, J. Mark 1896. A new factor in evolution. *The American Naturalist* 30(354): 441–451.
- Hoffmeyer, Jesper 2003. Origin of species by natural translation. In: Petrilli, Susan (ed.), *Translation Translation*. Amsterdam: Rodopi, 329–346.
- 2008. *Biosemiotics. An Examination into the Signs of Life and the Life of Signs*. Scranton: Scranton University Press.
- Lotman 1992. = Лотман, Ю. М. К построению теории взаимодействия культур (семиотический аспект). *Избранные статьи. Том I. Статьи по семиотике и топологии культуры*. Таллин: Александра, 110–120.
- Peirce, Charles S. 1931–1958. *The Collected Papers of Charles Sanders Peirce*. Electronic version (Folio Bound Views), vols. 1–6 (Hartshorne, Charles; Weiss, Paul, eds.), vols. 7–8 (Burks, Arthur W., ed.). Cambridge: Harvard University Press. [referenced as CP]
- Odling-Smee, F. John 1988. Niche constructing phenotypes. In: Plotkin, Henry C. (ed.), *The Role of Behavior in Evolution*. Cambridge: MIT Press, 73–132.