

# Biosemiotics

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Biosemiotics encompasses all living systems from the cell, over bacteria, fungi, plants and animals to humans as sign producers and interpreters. Signs are the basic units for the study of life. Thus biosemiotics transcends the semiotic threshold between man and the rest of the world that Umberto Eco formulated. Of the two main paradigms in semiotics, Saussurian semiology and the Peircian semiotics, it is mostly Peircian semiotics that has been used to develop biosemiotics because it has a theory of signification of non-intentional signs. Biosemiotics is already prefigured in Jakob von Uexküll's *Umweltlehre*, which Thomas Sebeok fruitfully used to found biosemiotics. Philosophical biologists in Copenhagen and Tartu have influenced the further development of biosemiotics. They see living systems from cells to humans defined by interactions between a digital code in the gene or genotype and an analogue in the whole individual or phenotype. The gene is a code for memory and self-representation the individual living body is a code for action and interaction with the real world and its ecology. Thus life appears to be a communicative interplay of different types of self- and other- descriptions carried by molecules. Biosemiotics is further developed in Cybersemiotics to include theories of computers and embodied sign- and language games.