

Foreword: Sebeok's biosemiotic contribution to Cybersemiotics

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In December 2001, the founder and editor of *Semiotica*, and originator of biosemiotics died. The present issue, is an homage to Thomas Sebeok. This journal was conceived for the integration of the semiotic perspective with cybernetic and autopoietic viewpoints. Sebeok became one of the advisory editors of this journal to show his support for the introduction the doctrine of biosemiotics into the areas of cybernetics, systems, autopoiesis and information theory.

With his support the interdisciplinary effort of CHK grew to include the investigation of overlapping interests in the study of circular processes of signification and communication in both second order cybernetics/autopoiesis and biosemiotics. The point of departure for each is the life world of the organism. Peircean biosemiotics also includes the observer in its phenomenological view of signification. With the active support of Jesper Hoffmeyer, Claus Emmeche, and Kalevi Kull biosemiotic evolutionary views were introduced, and these contributed to the development of a foundation for cybersemiotics. There are clear overlaps between autopoiesis, second order cybernetics, and Jacob von Uexküll's concepts of Umwelt and Innenwelt. They all build on a self-organized, circular causality view of the organism and its life world seen as a whole.

Modern Peircean biosemiotics is very different from the symbolic semiotics of human language that cyberneticians distanced themselves from many years ago. As I argued in the ASC column in the memorial issue for Francisco Varela (9:2), he made clear in his Calculus of self-reference that the triadic view of cognition as a self-organizing process is common in Peircean biosemiotics, second order cybernetics, autopoiesis, and enaction theory.

The theories of von Foerster and Maturana have had significant influence on the development of the Copenhagen school of biosemiotics. Conversely, Sebeok, who knew von Foerster, was very positive towards the idea of a cybersemiotics. In general he was supportive of enlarging the influence of semiotics, especially in fields where he could see that its knowledge could make a difference such as in artificial intelligence and cognitive science. Sebeok was a field maker in semiotics, and we are grateful for his help in generating the new field of cybersemiotics.

We are grateful to have some of the finest scholars on Sebeok's work and on biosemiotics, each of whom collaborated closely with Sebeok, contribute their thoughts to this issue. They are: Marcel Danesi, with whom he wrote his last book *The Forms of Meaning: Modelling Systems Theory and Semiotic Analysis* (2000, Mouton de Gruyter); John Deely, the semiotician and philosopher who wrote the tome *Four*

Ages of Understanding: The First Postmodern Survey of Philosophy from Ancient Times to the Turn of the Twenty-first Century (2001, Toronto University Press), where semiotics is welded into the history of philosophy in a complete new way building on the new perspective on semiotics that Sebeok developed; the biosemiotician Kalevi Kull who edited a volume on the modern significance of the work of Jacob von Uexküll for *Semiotica* [134(1/4), 2001]; and, finally, Susan Petrilli and Augusto Ponzio who co-authored of the shortest, most easily read, and yet scholarly books on Sebeok's work: *Thomas Sebeok and the Signs of Life* (2001, Icon and Totem Books).

Together the articles from these researchers give a very deep insight into the ideas behind the big version of semiotics based on Peirce instantiated as biosemiotics, a view you can also find argued in Deely's more demanding book *Basics of Semiotics* (Indiana University Press, 1990).

We have arranged the articles in an order that should be optimal for the reader with no or little prior knowledge of the semiotic paradigm. We also suggest that this issue might be used as course material for an introduction to the field of global- and biosemiotics that Sebeok created.

It is my hope that this special issue will promote the continuation of the work Sebeok began, and help inform scientists and scholars about the possibilities of the biosemiotic paradigm, especially the ways it can shed new light on problems within information science, cybernetics, system science and cognitive science. As there have already been many special issues and volumes on Sebeok's work within the "pure" semiotic community since he turned 80, I believe that creating this memorial issue in a transdisciplinary journal will be an inspiration to groups outside the semiotic community.

The obituary "Mister Biosemiotics" by Søren Brier dwells especially on Thomas Sebeok's contribution to the foundation of the field of biosemiotics. The ASC column: "The integration of second order cybernetics, autopoiesis and biosemiotics," is written by Søren Brier and discusses similarities and complementary aspects of cybernetics and biosemiotics. Marcel Danesi reviews Susan Petrilli's Italian biography of Thomas Sebeok.

The artist of the issue is Luciano Ponzio.