

## Sebeok's semiotic universe and global semiotics

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On the belief that the universe is a semiotic web Sebeok placed no limits on semiotic inquiry as he chose to conduct it. In terms of fields of semiosis and objects of analysis Sebeok's interests ranged from his studies in biology to his reflections relatively to linguistics, cybernetics, and artificial intelligence, his musings relatively to narrative esthetic signs, his interest in ecology and the signs of deception, sometimes inventing new disciplines to focus on specific aspects in the life of signs, such as "zoosemiotics" and "biosemiotics". Even more significant is his method of inquiry and its ontological foundations. Sebeok was a convinced critic of code semiotics and the restriction of its focus to the human social world, privileging the instruments of interpretation semiotics which best account for his axiom that life is the criterial attribute of semiosis. Working in such a direction he created the conditions for his "global semiotics", an approach capable of conceiving the totality of semiosis, the great semiosphere, in a detotalizing perspective, that is, in its interrelated plurality and diversification. The play of musing is a specifically human capacity theorized by Sebeok with his biosemiotic interpretation of the concept of language as a syntactic modeling device, to which he lives up to with his life as a researcher and critical interpreter of signs beyond prejudicial boundaries, even perhaps beyond the signs of life.

### 1. Sebeok's semiotic universe

#### 1.1. *Signs, other signs and more...*

Thomas A. Sebeok began his studies in higher education during the second half of the thirties at Cambridge. He was particularly influenced by *The Meaning of Meaning* (1923) by Charles K. Ogden and Ivor A. Richards long before it became a classic in semiotics. Also he can boast of having benefitted from direct contacts with two great masters of the sign who were also his teachers in different ways: Charles Morris and Roman Jakobson (see chp. 5, "Vital Signs", in *I Think I am a Verb*, 1986, and the parts dedicated to these figures in *The Sign & Its Masters*, 1979, as well as in *Semiotics in the United States*, 1991b).

The variegated aspects and parts of the manifold "semiotic universe" as they emerge from Sebeok's semiotic research include:

— The life of signs and the signs of life as they appear today in the biological sciences: the signs of animal life and of specifically human life, of adult life, and of the organism's relations with the environment, the signs of normal or pathological forms of dissolution and deterioration of communicative capabilities.

— Human verbal and nonverbal signs. Human nonverbal signs include signs which depend on natural languages and signs which, on the contrary, are not dependent on natural language and which, therefore, cannot be accounted for by the categories of linguistics. These include the signs of “parasitic” languages, such as artificial languages, the signs of “gestural languages”, such as the sign language of Amerindian and Australian aborigines, and the language of deaf-mutes; the signs of infants, and the signs of the human body both in its more culturally dependent manifestations as well as its natural-biological manifestations.

— Human intentional signs controlled by the will, and unintentional, unconscious signs such as those that pass in communication between human beings and animals in “Clever Hans” cases (cf. Sebeok 1979 and 1986). Here, animals seem capable of certain performances (for example, counting), simply because they respond to unintentional and involuntary suggestions from their trainers. This group includes signs at all levels of conscious and unconscious life, and signs in all forms of lying (which Sebeok identifies and studies in animals as well), deceit, self-deceit, and good faith.

— Signs at a maximum degree of plurivocality and, on the contrary, signs that are characterized by univocality and which, therefore, are signals.

— Signs viewed in all their shadings of indexicality, iconicity, and symbolicity.

— Finally, “signs of the masters of signs”. Those through which it is possible to trace the origins of semiotics (for example, in its ancient relation to divination and to medicine), or through which we may identify the scholars who have contributed directly or indirectly (as “criptosemioticians”) to the characterization and development of this science, or “signs of the masters of signs” through which we may establish the origins and development of semiotics relatively to a given nation or culture, as in Sebeok’s study on semiotics in the United States. “Signs of the masters of signs” also include the narrative signs of anecdotes, testimonies and personal memoirs that reveal these masters not only as scholars but also as persons — their character, behavior, everyday habits. Not even these signs, “human, too human”, escape Sebeok’s semiotic interests.

All this is a far cry from the limited science of signs as conceived in the Saussurean tradition!

## 1.2. *Critique of the pars pro toto error*

As a fact of signification the entire universe enters what Sebeok dubbed “global semiotics” (2001). In such a global perspective semiotics is the place where the “life sciences” and the “sign sciences” converge. This means that *signs* and *life* converge. Therefore global semiotics is the place where human consciousness fully realizes that the human being is a sign in a universe of signs.

Sebeok extends the traditional boundaries of sign studies, that is, semiotics, or more correctly semiology, providing an approach to the study of signs which is far more comprehensive than is foreseen by “semiology”. The limit of “semiology”, the science of the signs as projected by Saussure, consists of the fact that it is based on the verbal paradigm and is vitiated by the mistake of *pars pro toto* — in other words, Saussurean semiology mistakes the part (human signs and in particular verbal signs) for the whole (all possible signs, human and nonhuman). On the basis of such a mystification, semiology incorrectly claims to be the general science of signs. On the contrary, when the general science of signs chooses the term “semiotics” for itself, the aim is to take its distances from semiology and its errors. Sebeok dubs the semiological tradition in the study of signs the “minor tradition”, and promotes what he dubs as the “major tradition” represented by John Locke and Charles S. Peirce, as well as by the ancients, Hippocrates and Galen and their early studies on signs and symptoms. Semiotics, therefore, is at once recent if considered from the viewpoint of the determination of its status and awareness of its wide-ranging possible applications, and ancient if its roots are traced back at least, following Sebeok (1979), to the theory and practice of Hippocrates and Galen.

Through his numerous publications Sebeok has propounded a wide-ranging vision of semiotics that coincides with the study of the evolution of life. After Sebeok’s work (which is largely inspired by Charles S. Peirce, Charles Morris and Roman Jakobson), both the conceptions of the semiotic field and of the history of semiotics have changed. Thanks to Sebeok semiotics at the beginning of the new millennium has extended its horizons which are now far broader than envisaged during the first half of the 1960s.

Sebeok’s approach to the “life of signs” is “global” or “holistic” and may be immediately associated with his concern for the “signs of life”. In his view *semiosis* and *life* coincide. Semiosis originates with the first stirrings of life, which leads to the formulation of an axiom which he believes is cardinal to semiotics: “semiosis is the criterial attribute of life”.

“Global semiotics” (Sebeok 2001) provides a meeting point and an observation post for studies on the life of signs and the signs of life. In line with the “major tradition” in semiotics, Sebeok’s global approach to sign life presupposes his critique of anthropocentric and glottocentric semiotic theory and practice. In his explorations of the boundaries and margins of the science or “doctrine” of signs (as he also calls it), Sebeok opens the field to include *zoosemiotics* (a term he introduced in 1963), or, even more broadly *biosemiotics*, on the one hand, and endosemiotics (semiotics of sign systems such as the immunitary, the neuronal, cf. Thure von Uexküll, “Endosemiosis”, in Posner, Robering, Sebeok 1997, vol. 1: 464-487), on the other. In Sebeok’s conception, the sign science is not only the “science qui étudie la vie des signes au sein de la vie sociale” (Saussure 1916: 26), that is, the study of communication in culture, but also the study of communicative behavior in a biosemiotic perspective. Consequently, Sebeok’s global semiotics is characterized by a maximum broadening of competencies.

### 1.3. *Crossing over semiotic boundaries*

Sebeok's article "The Evolution of Semiosis" (in Posner, R.; K. Robering; and T. A. Sebeok eds. 1997-98, I, and in *The Sign Is Just a Sign* 1991) opens with the question "what is semiosis?", and the answer begins with a citation from Peirce. Sebeok observes that Peirce's description (*CP* 5.473) of semiosis or "action of a sign" as an irreducibly triadic process or relation (sign, object, and interpretant), focuses particularly upon how the interpretant is produced, therefore it concerns that which is involved in understanding or in the teleonomic (that is, goal-directed) interpretation of the sign.

Not only is there a sign which is a sign of something else, but also a "somebody" a "*Quasi-interpreter*" (*CP* 4.551) which takes something as a sign of something else. Peirce analyzed the implications of this description further when he said that: "It is of the nature of a sign, and in particular of a sign which is rendered significant by a character which lies in the fact that it will be interpreted as a sign. Of course, nothing is a sign unless it is interpreted as a sign" (*CP* 2.308). And again: "A sign is only a sign in actu by virtue of its receiving an interpretation, that is, by virtue of its determining another sign of the same object" (*CP* 5.569).

From the viewpoint of the interpretant and, therefore, of sign-interpreting activity or process of inferring from signs, *semiosis* may be described in terms of *interpretation*. Peirce specifies that all "signs require at least two *Quasi-minds*; a *Quasi-utterer* and a *Quasi-interpreter*" (*CP* 4.551). The interpreter, mind or quasi-mind, "is also a sign" (Sebeok 1994b: 14), exactly a response, in other words, an interpretant: an interpreter is a responsive "somebody".

In his article, "The Evolution of Semiosis", Sebeok continues his answer to the question "what is semiosis?" with a citation from Morris 1946 who defined semiosis as "a process in which something is a sign to some organism". This definition implies effectively and ineluctably, says Sebeok, the presence of a living entity in semiotic processes. And this means that semiosis appeared with the evolution of life.

For this reason one must, for example, assume that the report, in the King James version of the Bible (Genesis 1.3), quoting God as having said "Let there be light," must be a misrepresentation; what God probably said was "let there be photons," because the sensation of perception of electromagnetic radiation in the form of optical signals (Hailman 1977: 56-58), that is, luminance, requires a living interpreter, and the animation of matter did not come to pass much earlier than about 3,900 million years ago. (Sebeok in Posner, Robering and Sebeok 1997-98, I: 436)

In Morris's view the living entity implied in semiosis is a macro-organism; according to Sebeok's global semiotics instead it may be a cell, a portion of a cell, or a genome.

In “The Evolution of Semiosis” Sebeok examines the question of the cosmos before semiosis and after the beginning of the Universe and refers to the regnant paradigm of modern cosmology, i. e., the Big Bang theory. Before the appearance of life on our planet — the first traces of which date back to the so-called Archaean Aeon, from 3,900 to 2,500 million years ago — there were only physical phenomena involving interactions of non-biological atoms, later of inorganic molecules. Such interactions may be described as “quasi-semiotic”. But the notion of “quasi-semiosis” must be distinguished from “protosemiosis” as understood by the Italian oncologist Giorgio Prodi (cf. 1977) (the milestone volume *Biosemiotics*, edited by Sebeok and Umiker-Sebeok, 1992, is dedicated to Prodi who is described as a “bold trailblazer of contemporary biosemiotics”). In fact, in the case of physical phenomena, the notion of “protosemiosis” is metaphorical. In Sebeok’s view, semiosis concerns life. He distinguishes between nonbiological interactions and “primitive communication” which refers to the transfer of information with endoparticles, as in neuron assemblies where in modern cells transfer is managed by protein particles.

Since there is not a single example of life outside our terrestrial biosphere, the question of whether there is life/semiosis elsewhere in our galaxy, let alone in deep space, is wide open. Therefore, says Sebeok, one cannot but hold “exobiology semiotics” and “extraterrestrial semiotics” to be twin sciences that so far remain without a subject matter.

In the light of presentday information, all this implies that at least one link in the semiotic loop must necessarily be a living and terrestrial entity: this may even be a mere portion of an organism or an artifact extension fabricated by human beings. After all semiosis is terrestrial biosemiosis. A pivotal concept in Sebeok’s research, as we have already states, is that semiosis and life coincide. Semiosis is considered as the criterial feature that distinguishes the animate from the inanimate, and sign processes have not always existed in the course of the development of the universe: sign processes and the animate originated together with the development of life.

Identification of semiosis and life invests semiotics with a completely different role from that conceived by Eco (1975) when he described the conjunction between semiosis and life as concerning “the inferior threshold of semiotics”. In Eco’s view semiotics is a cultural science. Sebeok interprets and practices semiotics as a life science, as biosemiotics: nor can biosemiotics be reduced to its interpretation as a mere “sector” of semiotics.

#### 1.4. *Global semiotics*

For Sebeok semiotics is more than just a science that studies signs in the sphere of socio-cultural life, in other words, “la science qui étudie la vie des signes au sein de la vie sociale” (Saussure). Before contemplating the signs of unintentional communication (semiology of signification), semiotics was further limited by an exclusive concentration on the signs of intentional

communication (semiology of communication). These reflected dominant trends in semiology following Saussure. Instead, semiotics after Sebeok is not only *anthroposemiotics* but also *zoosemiotics*, *phytosemiotics*, *mycosemiotics*, *microsemiotics*, *machine semiotics*, *environmental semiotics* and *endosemiotics* (the study of cybernetic systems inside the organic body on the ontogenetic and phylogenetic levels): and all this under the umbrella of *biosemiotics* or, increasingly now and in the future, just plain *semiotics*.

In Sebeok's view, biological foundations, therefore, biosemiotics, form the epicenter of the study of both communication and signification in the human animal. In this perspective, the research of Jakob von Uexküll, biologist, teacher of Konrad Lorenz and one of the criptosemioticians most studied by Sebeok, belongs to the history of semiotics.

Sebeok's semiotics unites what other fields of knowledge and human praxis generally keep apart either for justified exigencies of a specialized order, or because of a useless and even harmful tendency toward short-sighted sectorialization. Such an attitude is not free of ideological implications, which are often poorly masked by motivations of a scientific order.

Biology and the social sciences, ethology and linguistics, psychology and the health sciences, their internal specializations — from genetics to medical semiotics (symptomatology), psychoanalysis, gerontology and immunology — all find in semiotics, as conceived by Sebeok, the place of encounter and reciprocal exchange, as well as of systematization and unification. All the same, it must be stressed that systematization and unification are not understood here neopositivistically in the static terms of an “encyclopedia”, whether this takes the form of the juxtaposition of knowledge and linguistic practices or of the reduction of knowledge to a single scientific field and its relative language (neopositivistic physicalism). Global semiotics may be presented as a *metascience* that takes all sign-related academic disciplines as its field. It cannot be reduced to the status of philosophy of science, although as a science it is engaged in dialogic relation with philosophy.

Sebeok reaches a global view through a continuous and creative shift in perspective that favors the development of new interdisciplinary relationships and new interpretive practices. Sign relations are identified where, for some, there seemed to be no more than mere “facts” and relations among things, independent from communication and interpretive processes. Moreover, this continual shift in perspective also favors the discovery of new cognitive fields and languages, which act dialogically. They are the dialogic interpreted-interpretant signs of fields and languages that already exist. As he explores the boundaries and margins of the sciences, Sebeok dubs this open nature of semiotics “doctrine of signs”.

## **2. The human capacity for modeling and the creation of new worlds**

### *2.1. Language, modeling and the origin of signs*

*A Sign is a Just a Sign* includes a paper of 1989, “Semiosis and Semiotics: What lies in Their Future?”. Here Sebeok significantly adds another meaning to the term “semiotics” understood as the general science of signs. This new meaning refers to *the specificity of human semiosis* and is of vital importance for a *transcendental founding of semiotics* as a doctrine of signs. Says Sebeok:

Semiotics is an exclusively human style of inquiry, consisting of the contemplation — whether informally or in formalised fashion — of semiosis. This search will, it is safe to predict, continue at least as long as our genus survives, much as it has existed, for about three million years, in the successive expressions of Homo, variously labelled — reflecting, among other attributes, a growth in brain capacity with concomitant cognitive abilities — habilis, erectus, sapiens, neanderthalensis, and now s. sapiens. Semiotics, in other words, simply points to the universal propensity of the human mind for reverie focused specularly inward upon its own long-term cognitive strategy and daily manoeuvrings. Locke designated this quest as a search for 'humane understanding'; Peirce, as 'the play of musement'. (*Ibidem*: 97)

This particular meaning of the term “semiotics” is obviously connected to “semiotics” understood as the general study of signs and of the typology of semiosis.

The exquisitely human propensity for musement implies the ability to carry out such operations as predicting the future or “traveling” through the past, that is, the ability to construct, deconstruct and reconstruct reality, inventing new worlds and interpretive models. The happy expression *The Play of Musement* is the title used by Sebeok, interpreter of Peirce, for his book of 1981.

In his paper “The Evolution of Semiosis”, now included in *A Sign is a Just a Signs* (pp. 83-96), Sebeok explains existing correspondences between the various branches of semiotics and the different types of semiosis, from the world of micro-organisms to the Superkingdoms and the human world. Specific human semiosis, anthrosemiosis, is characterized as semiotics thanks to a modeling device specific to humans called by Sebeok “language”. (We now know that *Homo habilis* was endowed with language, but not speech).

In Sebeok's research semiotics is interpreted and practiced as a life science, as biosemiotics. It follows that semiotics as conceived by Sebeok may be situated in a tradition of thought relating to the founders and masters of semiotics, including such figures as Hippocrates, Galen, Peirce, von Uexküll and in very recent times René Thom — an important Peirce scholar and topologist with competencies of a biological order.

In this perspective, Sebeok's semiotics examines the problem of the origin of signs. This is nothing less than the problem of the genesis of the universe (which following Peirce is perfused with signs) from the free flow of energy-information to signals and signs.

The development of semiosis and its complex articulation coincides with the evolution of terrestrial life from a single cell to its present-day multiform diversity, subdivided into three (or four) Superkingdoms: plants, animals and fungi. These kingdoms coexist and interact with the microcosm and together form the “biosphere”. What Lotman calls the “semiosphere” to refer to the cultural dimension of signs, in reality coincides with the “biosphere” (see “Semiosis and Semiotics: What Lies in their Future?”, in Sebeok 1991: 98), so that together the semiosphere and the biosphere form what we may call the great 'biosemiosphere'.

In another epocal paper included in *A Sign is a Just a Signs*, entitled “In what Sense is Language a ‘Primary Modeling system’”? (now also in *Signs*), Sebeok describes language as a *modeling device*. Every species is endowed with a model that produces its own world, and language is the name of the model belonging to human beings. However, human language as a modeling device is completely different from the modeling devices of other life forms. The distinctive feature of human language is what the linguists call *syntax*. Thanks to syntax hominids have not only one “reality”, one world, but are also able to frame an indefinite number of possible worlds. This capacity is unique to human beings. Thanks to syntax human language is like Lego building blocks, it can reassemble a limited number of construction pieces in an infinite number of different ways. As a modeling device language can produce an indefinite number of models; in other words, the same pieces can be taken apart and put together to construct an infinite number of different models. Thanks to language, then, not only do human animals produce worlds as do other species, but, as Leibniz says, human beings can also produce an infinite number of possible worlds. This brings us back to the 'play of musement', a human capacity which Sebeok considers particularly important for scientific research and all forms of investigation as well as for fiction and all forms of artistic creation.

Speech like language made its appearance as an adaptation, but *for the sake of communication* and much later than language, precisely with *Homo sapiens*. Consequently, language too ended up becoming a communication device; and speech developed out of language as a derivative *exaptation* (this designation is proposed by Gould and Vrba). Exapted for communication, first in the form of speech and later of script, language enabled human beings to enhance the nonverbal capacity with which they were already endowed. On the other hand, speech was *exapted* for modeling and eventually functioned as a *secondary modeling system*. In addition to increasing the communication capacity, speech also increased the capacity for innovation and “play of musement”. Such aspects as the plurality of languages and “linguistic creativity” (Chomsky) testify to the capacity of language understood as a primary modeling device, for producing numerous possible worlds.

*The Forms of Meaning. Modeling Systems Theory and Semiotic Analysis* by Sebeok and Marcel Danesi (2001) continues developing the fundamental notion of model as conceived in Sebeok's semiotics. Sebeok adapts the concept of modeling from the so-called Moscow-Tartu



school (A. A. Zaliznjak, V. V. Ivanov, and V. N. Toporov. Ju. M. Lotman) where it is used to denote natural language (“primary modeling system”) as well as other human cultural systems (“secondary modeling systems”). However, differently to the Moscow-Tartu school, Sebeok goes further to extend the concept of modeling beyond the domain of anthroposemiosis. With reference to the biologist Jakob von Uexküll and his concept of *Umwelt*, Sebeok’s interpretation of model may be translated as “outside world model”. On the basis of research in biosemiotics, the modeling capacity is observable in all life forms (see 1991: 49-58, 68-82; 1994: 117-127).

The study of modeling behavior in and across all life forms requires a methodological framework developed in the field of biosemiotics. This methodological framework is *modeling systems theory* proposed by Sebeok in his research on the interface between semiotics and biology. Modeling systems theory studies semiotic phenomena as modeling processes (Sebeok and Danesi 2001: 1-43). The applied study of modeling systems theory is called *systems analysis*, which distinguishes between primary, secondary and tertiary modeling systems.

In the light of semiotics conceived in terms of modeling systems theory, semiosis — a capacity with which all life forms are endowed — may be defined as “the capacity of a species to produce and comprehend the specific types of models it requires for processing and codifying perceptual input in its own way” (*Ibidem*: 5).

## 2.2. *The origin of language and speech*

The question of the origin of human verbal language is often set aside by the scientific community as unworthy of discussion, having most often given rise to statements that are naïve and unfounded (an exception is offered by a book by Giorgio Fano entitled, *Origini e natura del linguaggio*, 1972, Eng. trans. 1992). However, despite this general attitude Sebeok neither forgets the problem of the origins nor underestimates its importance. He claims that human verbal language is species-specific. It is on this basis that he interrogates — often with ironical overtones — the enthusiastic supporters of projects aimed at teaching captive primates verbal language. Sebeok points out the absurdity of such projects which are piloted by the false assumption that animals might be able to talk, or even more preposterous, that they possess the capacity for language understood as a syntactic modeling device. Sebeok’s distinction between *language* and *speech* (1986: chp. 2) not only protects against wrong-headed conclusions regarding animal communication, it also constitutes a general critique of phonocentrism and the tendency to base scientific investigation on anthropocentric principles.

According to Sebeok, language appeared and evolved as an *adaptation* much earlier than speech in the evolution of the human species to *Homo sapiens*. Language does not arise as a communicative device (a point on which Sebeok is in accord with Chomsky, even though the latter does not make the same distinction between *language* and *speech*); in other words, the specific function of language is not to transmit messages or to give information.

Instead, Sebeok describes language as a *modeling device*. Every species is endowed with a model that “produces” its own world, and language is the model belonging to human beings. However, as a modeling device, human language is completely different from the modeling devices of other life forms. Its characteristic trait is what the linguists call *syntax*, the ordering and operational rules of individual elements. But, while for linguists such elements ordered by syntax are words and phrases, instead Sebeok refers to a mute syntax when he speaks of syntax in language. Thanks to syntax, human language is like Lego building blocks. It can reassemble a limited number of construction pieces in an infinite number of different ways. As a modeling device, language can produce an indefinite number of models; in other words, the same pieces can be taken apart and put together to construct an infinite number of different models.

And thanks to language, not only do human animals produce worlds similarly to other species, but as also Leibniz said, human beings can produce an infinite number of possible worlds. This brings us back to the “play of musement”, a human capacity that Sebeok following Peirce considers particularly important for scientific research and all forms of investigation, and not only for fiction and all forms of artistic creation.

Speech, like language, made its appearance as an adaptation, but *for the sake of communication* and much later than language, precisely with *Homo sapiens*. Speech organizes and externalizes language. Consequently, language too ended up becoming a communication device, enhancing the nonverbal capabilities already possessed by human beings; and speech developed out of language as what some evolutionary biologists call a derivative *exaptation* (see Gould and Vrba 1982: 4-15).

### 2.3. Iconicity and language

Sebeok believes that language as a modeling device relates iconically to the universe it models. This statement links him directly to Peirce and Jakobson, both of whom stressed the importance of iconic signs. An equally important connection can be made with Ludwig Wittgenstein’s *Tractatus*, particularly with the notion of “picturing”.

Wittgenstein begins his work on the processes that produce language-thought and on semiotic-cognitive procedures in his *Tractatus*. However, he subsequently sets aside this aspect of his research in *Philosophical Investigations*, where he focuses on *meaning as use* and on linguistic conventions (linguistic games). *Philosophical Investigations* is considered as an important turning point in Wittgenstein’s research, especially by analytical philosophers, all the same we must not lose sight of his *Tractatus* and its importance, particularly as regards the *iconic* aspect of language (cf. Ponzio 1991b and Ponzio 1997: 309-313). In the *Tractatus*, Wittgenstein distinguishes between names and propositions: the relation between names or “simple signs” used in the proposition and their objects or meaning is of the conventional type. The relation between whole propositions or

“propositional signs” and what they signify is a relation of similarity. The proposition is a logical picture (cf. *CP* 4.022 and 4.026). As much as propositions are also conventional-symbolic, they are fundamentally based on the relation of representation, that is, the iconic relation; and, similarly to Peirce’s “existential graphs”, this relation is of the proportional or structural type.

The iconic relation can also be explained and analyzed through the distinction between *analogy*, *isomorphism* and *homology*, discussed by Ferruccio Rossi-Landi (1992b [1968]). The distinction between analogy and homology is congenial to the general orientation of Sebeok’s own research, given its association with biology. His method is homological.

This approach to the relation between language and the world also has implications for the theory of knowledge, for the study of cognitive processes and psychology, which Sebeok directly addresses in terms of psycholinguistics and psychosemiotics. Relating semiotics to neuro-biology, he describes the mind as a sign system or model representing the surrounding world or *Umwelt*. The model is an icon, a kind of diagram, where the most pertinent relations are of a spatial and temporal order. These relations are not fixed once and for all but can be fixed, modified and fixed again in correspondence (a resemblance relation) with the *Innenwelt* (inner world) of the human organism. On the basis of this model which therefore is comparable to a diagram or a map, the human mind shifts from one node to another in the sign network, choosing each time the interpretive path considered most suitable (see Sebeok, “Naming in Animals with Reference to Playing: A Hypothesis”, in Sebeok 1986: chp. 7).

#### 2.4. *Living, lying and musing...*

In Italy, long before Umberto Eco (1975; see Petrilli and Ponzio 2002, Part One, VII) defined semiotics as the discipline that studies lying, Giovanni Vailati had stated that signs may be used for deviating and deceiving. He entitled his review of Giuseppe Prezzolini’s *L’arte di persuadere*, “Un manuale per bugiardi” (A handbook for liars). This particular aspect of Vailati’s studies is analyzed by Augusto Ponzio in his 1988 monograph dedicated to the Italian philosopher and semiotician Ferruccio Rossi-Landi (see Petrilli and Ponzio 2002, Part One, VI). “Plurivocità, omologia, menzogna” (Plurivocality, homology, lying) is the title of a section included in a chapter dedicated to the relation between Rossi-Landi and Vailati, the former’s predecessor. Sebeok himself also evokes Vailati in relation to Peirce in his paper “Peirce in Italia” of 1981. He describes the non-isomorphic character of signs with respect to reality and also analyzes the use of signs for lying (yet another leitmotif in his research) — that is, the use of signs for fraud, illusion and deception, the capacity of signs for masking and pretence.

Deception, lying, and illusion are forms of behavior which a semiotician like Sebeok, entranced by signs wherever they occur, could not resist. For example, he was attracted by the signs of the magician and constantly returned to forms of behavior and situations of the Clever Hans type.

It was thought that the horse known as Clever Hans knew how to read and write, but in reality it was an able interpreter of the signals communicated by its trainer, either inadvertently or voluntarily in an intentional attempt at fraud (cf. Sebeok, “Looking in the Destination for What Should Have Been Sought in the Source”, in Sebeok 1979: 85-106).

Sebeok explored the capacity for lying in the nonhuman animal world, which we believe to be an interest with a dual motivation. The first concerns Sebeok’s commitment to contradicting the belief that animals can “talk” in a literal sense, that they are invested with a characteristic — language — which, on the contrary, is species-specific to humankind alone. In some cases, Sebeok’s commitment to unveil this widespread mystification involves unmasking the fraudulent acts of impostors; in others it involves undermining illusions. With recourse to given theories, empirical documentation and even parody (cf. Sebeok “Averse Stance”, in Sebeok 1986: 145-148), Sebeok has made an important contribution to evidencing the absurd, often ridiculous and no doubt scientifically unsound consequences of ignoring and abstracting from species-specific differences between human verbal language and animal language, or better sign systems.

The second motivation for Sebeok’s inquiry into the capacity for lying in the nonhuman animal world is related to his wish to explore the fascinating question of whether nonhuman animals lie in the same way that humans do. As evidenced by studies in zoosemiotics, signs do not belong exclusively to the human world and it may well be that the use of signs also implies the ability to lie (cf. Sebeok, “Can Animals Lie?”, in *Ibidem*: 126-130).

### **3. Sebeok’s works and the destiny of semiosis**

#### *3.1. A tetralogy*

Over a decade (1976 to 1986) Sebeok, published the tetralogy formed by *Contributions to the Doctrine of Signs* (1976), *The Sign & Its Masters* (1979), *The Play of Musement* (1981), *I Think I Am a Verb* (1986).

In the opening lines to *The Sign & Its Masters* (see the programmatic chapters: 1, “Semiosis in Nature and Culture”, pp. 3-26; and 4, “Ecumenicalism in Semiotics”, pp. 61-84), Sebeok describes his book of 1979 as “transitional”. In truth, this remark may be extended to the whole of his research if considered in the light of recent developments in philosophico-linguistic and semiotic debate. However, our allusion is to the transition from “code semiotics” (that is, the conception of the sign as a message that has been encoded and only calls for decodification, so that comprehension of the sign is reduce to mere decodification) to “interpretation semiotics”, where code semiotics is centered on linguistics and, therefore, on verbal signs, while “interpretation semiotics”, unlike the former, also accounts for the autonomy and arbitrariness of nonverbal signs, whether “cultural” or “natural”.

In his survey of the problems relevant to semiotics and of the masters of signs, Sebeok discusses various aspects characterizing the “cultural” and “natural” approaches to semiotics, which may be most simply summarized with two names — Ferdinand de Saussure and Charles S. Peirce. The study of signs is “in transit” from “code semiotics” to “interpretation semiotics” as represented by these two emblematic figures, and in fact has now decidedly shifted in the direction of the latter.

*Contributions to the Doctrine of Signs* has a strong theoretical bias; here Sebeok had already expressed his preference for the semiotics of interpretation. *The Play of Musement*, a collection of papers published in 1981, explores the efficacy of semiotics as a methodological tool and the potential range of its application and does so in more discursive terms, although in both these books Sebeok’s perspective has solid theoretical foundations. By contrast, *The Sign & Its Masters*, the in-between book, considers the different possibilities that branch out from our two semiotic alternatives, code semiotics and interpretation semiotics. In fact, in addition to being a compact theoretical book, *The Sign & Its Masters* also offers a survey of the various alternatives, positions and phases in sign studies as incarnated throughout history by important scholars of signs, whether they have dealt with signs either directly or indirectly.

Sebeok's position is distant from Saussure's who limited the sign science to the more restricted spaces of the signs of human culture, and still more reductively to signs produced intentionally for communication. Instead for Sebeok no aspect of sign life must be excluded from semiotics, no limits are acceptable on semiotics, whether contingent or deriving from epistemological conviction. At the same time, however, contrary to eventual first impressions, Sebeok's work discourages any claims to the status of scientific or philosophical omniscience; indeed there is no expectation to solve all problems indiscriminately.

Sebeok’s writings transform us into the direct witnesses and interpretants of (abductive) turning points in his research as he experiments, discusses and evaluates different methods of semiotic inquiry, identifies possible objects of analysis and outlines the boundaries, or, better, suggests the boundlessness of semiotics as a disciplinary field. From this point of view *The Sign & Its Masters* — as, in reality, all of his research — is *transitional* insofar as it contributes significantly to the shift towards interpretation semiotics. This shift frees sign study once and for all from subordination to (Saussurean) linguistics and from false dichotomies: communication semiotics versus signification semiotics, referential semantics versus nonreferential semantics (see Eco 1975).

### 3.2. *Semiotics as a doctrine of signs and metasemiosis*

Despite such a totalizing approach to semiotics Sebeok most significantly uses neither the ennobling term “science” nor the term “theory” to name it. Instead, as we have seen, he repeatedly favors the expression “doctrine of signs”, adapted from John Locke according to whom a doctrine is

a body of principles and opinions that vaguely form a field of knowledge. Sebeok also uses this expression as understood by Charles S. Peirce (that is, with reference to the instances of Kantian critique). This is to say that Sebeok invests semiotics not only with the task of observing and describing phenomena, in this case signs, but also of interrogating the conditions of possibility that characterize and specify signs for what they are, as emerges from observation (necessarily limited and partial), and for what they must be (cf. Sebeok's "Preface" to *Contributions to the Doctrine of signs*, 1976).

This humble and at the same time ambitious character of the "doctrine of signs" leads Sebeok to a Kantian critical interrogation of its very conditions of possibility: the doctrine of signs is the science of signs that questions itself, attempts to answer for itself, and inquires into its very own foundations. As a doctrine of signs, semiotics is also philosophy not because it deludes itself into believing that it can substitute philosophy, but because it *does not* delude itself into believing that the study of signs is possible without philosophical questions regarding its conditions of possibility.

### 3.3. *From the nonhuman interpreter as a sign to the human interpreter as a verb*

*I Think I Am a Verb* of 1986 is the fourth book in Sebeok's tetralogy of the 1970s and 1980s. Since then other important volumes have followed in rapid succession. These include: *Essays in Zoosemiotics* (1990), *A Sign is Just a Sign* (1991b), *American Signatures* (1991a), *Semiotics in the United States* (1991c), *Signs. An Introduction to Semiotics* (1994), *Come comunicano gli animali che non parlano* (1998), *Global Semiotics* (2001b), without forgetting important earlier volumes such as *Perspectives in Zoosemiotics* (1972), plus numerous others under his editorship including *Animal Communication* (1968), *Sight, Sound, and Sense* (1978), and *How Animals Communicate* (1979).

Rather than continue this long list of publications, it will suffice to remember that Sebeok has been publishing since 1942. His writings are the expression of ongoing research and probing reflection over more than half a century as he interprets the semiotic universe, whose infinite multiplicity, variety and articulation he has substantially contributed to manifesting.

*I Think I Am a Verb* is a book which at once assembles a broad range of interests and also acts as a launching pad for new research itineraries in the vast region of semiotics. The title evokes the dying words of the eighteenth President of the United States, Ulysses Grant, which ring with Peircean overtones. In fact, in Peirce's view, man is a sign just as all living beings are. However, Sebeok's choice of a verb instead of a noun to characterize this sign serves to emphasize the condition of continuous becoming, transformation and renewal of signs in the human world.

A fundamental point in Sebeok's doctrine of signs is that living is sign activity. To maintain and to reproduce life, and not only to interpret it at a scientific level, are all activities that

necessarily involve the use of signs. Sebeok theorizes a direct connection between the biological and the semiotic universes, and, therefore, between biology and semiotics. His research would seem to develop Peirce's conviction that man is a sign with the addition that this sign is a verb: to interpret. And in Sebeok's particular conception of reality, the interpreting activity coincides with the life activity, and in his own personal case, with the whole of his life. If I am a sign, as he would seem to be saying through his life as a researcher, then nothing that is a sign is alien to me — *nihil signi mihi alienum puto*; and if the sign situated in the interminable chain of signs is necessarily an "interpretant"— the term Peirce gave to the effect of a sign, an effect that is itself a sign — then "to interpret" is indeed the verb that may best help me understand who I am.

### 3.4. *European and American semiotics, a dialogue*

In *Semiotics in the United States*, Sebeok analyzes U.S. semiotics at three different levels, at once closely interrelated and yet easily identifiable.

At the *first* level he makes both a synchronic and diachronic survey of the various theoretical trends, perspectives, problems, fields, specializations and institutions that characterize U.S. semiotics. Regarding the diachronic perspective, Sebeok takes on the difficult task of reconstructing the origins of American semiotics. To this end he researches discourse that was not yet connoted as semiotics at the time and that in certain cases is still today considered marginal with respect to semiotics or completely distant from it.

The *second* level is theoretical and critical. Sebeok takes a stand with respect to given problems in semiotics: problems of a general order concerning, for instance, the delimitation of the field of semiotics or the construction of a general sign model; and problems of a more specific order concerning the various sectors and subsectors of the science, or "doctrine of signs". The impression that Sebeok would seem to confirm here and there is that this more problematic level sets the perspective for the whole volume: it completes the first level and avoids limiting the volume to pure historical descriptivism.

The *third* level is connected to the second in the sense that while developing and illustrating his theoretical views, Sebeok colors them with personal overtones and most often with amusing biographical anecdotes. There are very few pages in *Semiotics in the United States* where Sebeok does not figure as one of the characters populating the stories, episodes and enterprises forming his narration. In fact, this is largely due to his surprising and perhaps unprecedented involvement in the organization and promotion of the semiotic science at a world level — a cause to which he has been committed since the gradual emergence of semiotics as a discipline in its own right. Sebeok has been in direct contact with many of the authors mentioned in his volume and has many "memories" of personal experiences with them. Consequently these memories have found their way into his description of the problems and orientations characterizing the semiotic globe.

With reference to these three shaping factors another book by Sebeok which recalls *Semiotics in the United States* is the oft-cited *The Sign & Its Masters*. Here in fact the historical, theoretical-critical and anecdotal threads of Sebeok's discourse converge and interweave even more than in his other books, though the autobiographical aspect is never lacking in any one of them. *Semiotics in the United States* may also be related to *I Think I Am a Verb* where autobiographical motivations are not lacking in the choice of topics, authors and personalities cited, including the eighteenth President of the United States of America, Ulysses S. Grant, whose dying words as we have said inspire the title of the volume.

Sebeok's interests cover a broad range of territories ranging from the natural sciences to the human sciences. He deals with theoretical issues and their applications from as many angles as are the disciplines called in question: linguistics, cultural anthropology, psychology, artificial intelligence, zoology, ethology, biology, medicine, robotics, mathematics, philosophy, literature, narratology, and so forth. Even though the initial impression might be of a rather erratic mode of proceeding as he experiments various perspectives and embarks upon different research ventures, in reality Sebeok's expansive and seemingly distant interests find a focus in his "doctrine of signs" and in the fundamental conviction subtending his general method of enquiry, that is, the universe is perfused with signs, indeed, as Peirce hazards, may be composed exclusively of signs.

Through his numerous publications Sebeok has promoted a wide-ranging vision of semiotics which coincides with the study of the evolution of life. After Sebeok's work both our conception of the semiotic field and of the history of semiotics have changed noticeably. Thanks to him semiotics at the beginning of the new millennium is proposing a radically broader view than that presented during the first half of the 1960s.

What is immediately striking about Sebeok's work may be described as his "dialogic" and "polyphonic" approach (in the Bakhtinian sense of these words). Sebeok promotes dialogue among signs, among the different orders of signs, among different interpretive practices, domains and fields, as well as among the "masters" of signs, including those who had never previously been in direct contact with each other, or who did not even suspect they were dealing with signs (his so-called "cryptosemioticians").

As is evident throughout his thought system, Peirce too recognized the importance of "dialogism" in the development of thought, and even more broadly in the evolution of life generally, of which human thought processes are a part. In a letter to Victoria Welby of 2nd December 1904, and very much in accord with her own views, Peirce, who had been forced into isolation after having been excluded from academic life, wrote that "after all a philosophy can only be passed from mouth to mouth, where there is opportunity to object & cross-question" (in Hardwick 1977: 44).



As testified by his long teaching career and constant commitment to promoting the “community of inquirers”, Sebeok believed continuity in dialogic exchange is nothing less than of vital importance. Indeed, as Iris Smith states in her introduction to Sebeok’s book of 1991, *American Signatures: Semiotic Inquiry and Method*, his own peculiar way of living his condition as an intellectual testifies to the fact that individual reflection must be measured against the reflection of others.

We believe that Sebeok’s awareness of the vastness, variety and complexity of the territories he explores and of the problems analyzed demonstrates a sense of utmost prudence, sensitivity to problems and humility in the interpretations he offers. This is the case not just when he ventures over the treacherous territory of signs, but still more in relation to the deceptive sphere of the signs of signs — the place of his semiotic probings.

### 3.5. *The destiny of semiosis after life?*

Semiosis extends over all terrestrial biological systems, from the sphere of molecular mechanisms at the lower limit, to a hypothetical entity at the upper limit christened “Gaia”, the Greek for “Mother Earth” — a term introduced by scientists toward the end of the 1970s to designate the whole terrestrial ecosystem that englobes the interactive activity of different forms of life on Earth..

As Sebeok says, alluding to the fantastic worlds of *Gulliver’s Travels*, semiosis spreads over the Lilliputian world of molecular genetics and virology to Gulliver’s man-size world, and finally to the world of Brobdingnag, Gaia, our gigantic bio-geo-chemical ecosystem.

And beyond? Can we assert that semiosis extends beyond Gaia? A “beyond” understood in terms of space, but also of time? Is semiosis possible beyond Gaia, outside it, and beyond this gigantic organism’s life span? Sebeok ponders this question to (see “Semiosis and Semiotics. What lies in their future?”, in Sebeok 1991: 98).

With his research Sebeok takes stock of the impressive general progress and expansion of the semiotic field during approximately the past twenty to thirty years. Starting from an oversimplifying definition of semiotics as the study of the exchange of any kind of message and related sign systems (which he criticized), he theorizes semiotics as the “play of musement” mediating between reality and illusion:

the central preoccupation of semiotics is an illimitable array of concordant illusions; its main mission to mediate between reality and illusion — to reveal the substratal illusion underlying reality and to search for the reality that may, after all, lurk behind that illusion. This abductive assignment becomes, henceforth, the privilege of future generations to pursue, insofar as young people can be induced to heed the advice of their elected medicine men. (Sebeok 1986: 77-78)

We believe that the question posed by Sebeok concerning the destiny of semiosis also derives from awareness of the responsibility of semiotics relatively to semiosis. Going beyond Sebeok we now believe that the time has come for global semiotics to evolve into what we propose to call “semioethics” (see Petrilli and Ponzio 2002: Part Three; Ponzio and Petrilli 2003).

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The expression "Global Semiotics" is the title of a plenary lecture delivered by Sebeok on June 18, 1994 as Honorary President of the Fifth Congress of the International Association for Semiotic Studies, held at the University of California, Berkeley, now in Sebeok, *Global Semiotics*, 2001.

Giorgio Prodi (1928-1987) “was, on the one hand, one of his country’s leading medical biologists in oncology, while he was, on the other, a highly original contributor to semiotics and epistemology, the philosophy of language and formal logic, plus a noteworthy literary figure. Prodi’s earliest contribution to this area [immunosemiotics, an important branch of biosemiotics], [is] ‘le basi materiali della significazione [1978]’” (Sebeok, “Foreword” in Capozzi ed., 1997: xiv).

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Giovanni Vailati (1863-1909) was a mathematician, logician and pragmatist philosopher. He was a pupil of Giuseppe Peano, Vailati lectured in mathematics and physics at the University of Turin (in 1892 and 1899) and subsequently taught in various State schools in the North of Italy. He corresponded with such personalities as Franz Brentano and Victoria Welby whose Significs he

appreciated and developed. He acknowledged the importance of Peirce's pragmatism that he introduced to the Italian intellectual scene. In his short lifetime he distinguished himself as an innovative thinker in philosophy of language, history of science, and epistemology. "interpretation semiotics".

Independently from Peirce, Vailati was conscious of the importance of abduction for experimentation and discovery. In Italy the explicit and programmatic continuation of language studies in the direction indicated by Vailati is represented by the work of Ferruccio Rossi-Landi (see Vailati 1972, 1987, 2000; Petrilli 1990a; Ponzio, 1990b; Quaranta ed. 1989).