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A Tribute to Thomas Sebeok

1. Biosemiotics and modeling systems theory

Thomas A. Sebeok may be counted among the figures who have most contributed to the institutionalization of semiotics internationally, and to its configuration as ‘biosemiotics’, ‘semiotics or life’, or, as he preferred in his latest book (2001), ‘global semiotics’. His work has largely been inspired by Charles S. Peirce as well as by Charles Morris and Roman Jakobson.

Thomas A. Sebeok was born in Budapest, 9th November, 1920 and died in Bloomington, 21st December, 2001. He migrated to the United States in 1937, and became a US citizen in 1944. He had been a faculty member of Indiana University since 1944 and was General Editor of the journal *Semiotica*, the International Association for Semiotic Studies, since its founding in Paris in 1969.

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, in different ways, and under different aspects had also been his teachers: Charles Morris and Roman Jakobson. His numerous and diversified research interests cover a broad expanse of territories, ranging from the natural sciences to the human sciences.

After Thomas A. Sebeok semiotics is emerging as ‘global semiotics’. According to the global semiotic perspective signs and life coincide and semiosis is behavior among living beings.

A lire les ouvrages de Sebeok, on est confondu par sa familiarité avec les langues et les cultures du monde, par l’aisance avec laquelle il se meut à travers les travaux des psychologues, des spécialistes de neuro-physiologie cérébrale, de biologie cellulaire, ou ceux des éthologues portant sur des centaines d’espèces zoologiques allant des organismes unicellulaires aux mammifères supérieurs, en passant par les insectes, les poissons et les oiseaux. Ce savoir plus qu’encyclopédique se mesure aussi aux milliers de noms d’auteurs, de

langues, de peuples et d'espèces composant les index des ouvrages écrits ou dirigés par lui, et à leurs énormes bibliographies. (Lévi-Strauss, 'Avant-Propos', in Bouissac, Herzfeld, Posner 1986: 3)

The entire universe given that it signifies enters Sebeok's 'Global Semiotics' (cf. Sebeok 2001a). Semiotics is the place where the 'life sciences' and the 'sign sciences' converge. This means that *signs* and *life* converge. Therefore, it follows that the human being is a sign in a universe of signs.

Sebeok has extended the boundaries of traditional sign study, providing an approach to 'semiotics' that is far more comprehensive than that developed by 'semiology'. The limit of 'semiology', the science of the signs as projected by Ferdinand de Saussure, consists in the fact that it is based on the verbal paradigm and is vitiated by the mistake of *pars pro toto* – in other words, it mistakes the part (that is, human signs and in particular verbal signs) for the whole (that is, all possible signs, human and nonhuman). On the basis of such a mystification, semiology incorrectly claims to be the general science of signs. When instead the general science of signs chooses the term 'semiotics' for itself, it takes its distances from semiology and its errors. Sebeok dubs the semiological tradition in the study of signs the 'minor tradition', while, on the contrary, the tradition he promotes as 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 he dubs the 'major tradition'.

Through his numerous publications Sebeok has propounded a wide-ranging vision of semiotics that converges with the study of the evolution of life. After Sebeok's work, both the conceptions of the semiotic field and history of semiotics are insuperably changed. Thanks to him semiotics at the beginning of the new millennium has broad horizons – far broader than envisaged by sign studies in 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 that is cardinal to semiotics: 'semiosis is the criterial attribute of life'.

'Global semiotics' 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*, 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.

For Sebeok semiotics is more than just a science that studies signs in the sphere of socio-cultural life, as reported above, 'la science qui étudie la vie des signes au sein de la vie sociale' (Saussure 1916: 26). Before contemplating the signs of unintentional communication (semiology of signification), semiotics was limited by its exclusive focus on the signs of intentional communication (semiology of communication). These were the main 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 takes place under the umbrella term of *biosemiotics* or just plain *semiotics*.

In Sebeok's view, biological foundations, therefore biosemiotics, are at the epicenter of studies on communication and signification in the human animal. From this point of view, the research of the biologist Jakob von Uexküll, 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 separate 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 (for example, 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 develops a view that is global thanks to his continual and creative shifts in perspective, which favors new interdisciplinary interconnections and new interpretive practices. Sign relations are identified where, for some, there seemed to exist no more than mere 'facts' and relations among things, independent from communication and interpretive processes. Moreover, this continual shifting in perspective also favors the discovery of new cognitive fields and languages, which interact dialogically. They are the dialogic interpreted-interpretant signs of fields and languages that already exist. In his explorations of the boundaries and margins of the various sciences, Sebeok dubs this open nature of semiotics 'doctrine of signs'.

A pivotal notion in global semiotics is 'modeling' which is used to explain life and behavior among living entities conceived in terms of semiosis. Therefore, global semiotics or what we may also call 'semiotics of life' also involves modeling systems theory.

The concept of modeling is of fundamental importance in Sebeok's semiotic research. It is adapted from the so-called Moscow-Tartu school of semioticians (A. A. Zalznjak, V. V. Ivanov, V. N. Toporov and Ju. M. Lotman), where it was introduced to denote natural language ('primary modeling system') as well as other human cultural systems ('secondary modeling systems'). However, differently from this school, Sebeok extended the concept of modeling beyond the domain of anthroposemiotics. In the light of the concept of *Umwelt* as formulated by the biologist Jakob von Uexküll, Sebeok's concept of model may be interpreted as an 'outside world model'. And on the basis of recent research in biosemiotics, he avers that the modeling capacity is observable in all forms of life (cf. Sebeok 1991b: 49-58, 68-82, and 1994b: 117-127).

The terms introduced so far need some clarification. The study of modeling behavior in and across all life forms requires a methodological framework that has been developed in the field of biosemiotics. This methodological framework is *modeling systems theory* as proposed by Sebeok in his research on the interface between semiotics and biology. Modeling systems theory analyzes semiotic phenomena in terms of modeling processes (cf. Sebeok and Danesi 2000: 1-43).

In the light of semiotics viewed as a modeling systems theory, semiosis – a capacity pertaining to all life forms – 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).

The applied study of modeling systems theory is called *systems analysis*, which distinguishes between primary, secondary and tertiary modeling systems.

The primary modeling system is the innate capacity for *simulative* modeling – in other words, it is a system that allows organisms to simulate something in species-

specific ways (cf. *Ibidem*: 44-45). Sebeok calls 'language' the species-specific primary modeling system of the species called *Homo*.

The secondary modeling system subtends both 'indicational' and 'extensional' modeling processes. The nonverbal form of indicational modeling has been documented in various species. Extensional modeling, on the other hand, is a uniquely human capacity because it presupposes *language* (primary modeling system), which Sebeok distinguishes from *speech* (human secondary modeling system; cf. *Ibidem* 82-95).

The tertiary modeling system subtends highly abstract, symbol-based modeling processes. Tertiary modeling systems are the human cultural systems which the Moscow-Tartu school had mistakenly dubbed 'secondary' as a result of conflating 'speech' and 'language' (cf. *Ibidem*: 120-129).

2. *The question of living entities implied in semiosis*

Sebeok's article 'The Evolution of Semiosis' (in Sebeok 1991b, now in Posner, Robering, and Sebeok 1997-98, I) 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 do we have a sign that is a sign of something else, but we also have a 'somebody', a '*Quasi-interpreter*' (*CP* 4.551) that interprets something as a sign of something else. Peirce further analyzed the implications of this description 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 above-mentioned 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 I.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 macroorganism; instead, according to Sebeok’s global semiotics it may even be a cell, a portion of a cell, or a genoma.

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 only existed physical phenomena involving interactions of nonbiological 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 Prodi¹ (cf. 1977). (To Prodi, described as a ‘bold trailblazer of contemporary biosemiotics’, is dedicated the milestone volume *Biosemiotics*, edited by Sebeok and Umiker-Sebeok, 1992). 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, on the one hand, and ‘primitive communication’, on the other, which refers to information transfer through endoparticles, as in neuron assemblies where transfer in modern cells 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.

¹Giorgio 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).

In the light of information today, 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. As stated, a pivotal concept in Sebeok's research 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.

3. *Biosemiotics's extension in Sebeok's work*

Over a decade, Sebeok published a tetralogy constituted 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). Since then other important volumes have followed in rapid succession. These include: *Essays in Zoosemiotics* (1990), *American Signatures: Semiotic Inquiry and Method* (1991a), *A Sign is Just a Sign* (1991b), *Semiotics in the United States* (1991c), *Signs. An Introduction to Semiotics* (1994b), *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* (1977). Rather than continue his long list of publications, it will suffice to remember that Sebeok had been publishing since 1942.

Identification of semiosis and life invests semiotics with a completely different role from that traditionally conceived. 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.

Sebeok's semiotic universe comprises the following.

– 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 organisms'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 that depend on natural languages and signs that, on the contrary, do not depend on natural language and therefore transcend the categories of linguistics. These include the signs of 'parasitic' languages, such as artificial languages, the signs of 'gestural languages', such as the sign languages 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 nonhuman animals in ‘Clever Hans’ cases (cf. Sebeok 1979 and 1986). In such contexts, 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 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 (Sebeok 1991b). ‘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, daily habits. Not even these signs, ‘human, too human’, escape Sebeok’s semiotic interests.

As emerges from Sebeok’s research, the unifying function of semiotics may be considered keeping account of three strictly interrelated aspects, all belonging to the same interpretive practice highly characterized by abductive creativity:

1) *The descriptive-explanatory aspect*. Semiotics singles out, describes and explains signs, that is, interpreted-interpretant relationships, forming events.

2) *The methodological*. Semiotics is also the search for methods of inquiry and acquisition of knowledge, both ordinary and scientific knowledge. From this point of view, and differently from the first aspect, semiotics does not limit itself simply to describing and explaining, but it also makes proposals concerning cognitive behavior. Under this aspect as well, then, semiotics overcomes the tendency toward parochial specialism among the sciences, and therefore toward separation.

3) *The ethical aspect*. Under this aspect, the unifying function of semiotics concerns proposals and practical orientations for human life in its wholeness (from the

overall point of view of its biological and socio-cultural aspects). The focus is on what may be called the 'problem of happiness'.

Concerning the third aspect of the unifying function of semiotics, particular attention is paid to recovering the connection with what is considered and experienced as separate. In today's world, the logic of production and the rules that govern the market, where anything may be exchanged and commodified, threaten to render humanity ever more insensitive to nonfunctional and ambivalent signs. These may range from vital signs forming the body to the seemingly futile signs of phatic communication with others. Reconsideration of these signs and their relative interrelations is absolutely necessary in the present age for improvement of the quality of life. Indeed, today's production and marketing's globalization imposes ecological conditions which make communication between self and body, as well as with the environment ever more difficult and distorted (cf. 'The Semiotic Self', in Sebeok 1979; cf. also Sebeok, Ponzio, Petrilli 2001). Moreover, this third aspect of semiotics operates in such a way as to connect rational worldviews to myth, legend, fable and all other forms of popular tradition with a focus on the relation of humans to the world about them. This third function is rich with implications for human behavior: the signs of life that today we cannot or do not wish to read, or those signs of life that we do not know how to read, may one day recover their importance and relevance for humanity.

The study of sign function has often been thought to be sufficient for an understanding of the nature of signs. On the contrary, Sebeok draws attention to problem of the functioning of signs as an end in itself, which represents a sort of excess with respect to the function and purpose of signs. Such excess is visible, for example, in ritual behavior among human beings and animals, but also in language. In fact, beyond its communicative function, language may be considered as a sort of game, in terms of the 'play of musement' we might say with Peirce and with Sebeok, without which such activities as imagination, fantasy, or highly abductive reasoning would never be possible.

4. *Semiotics as species-specific human semiosis*

Sebeok most significantly added another meaning to the term 'semiotics' beyond 'the general science of signs': as indicating, that is, *the specificity of human semiosis*. This concept is clearly formulated in a paper of 1989, 'Semiosis and Semiotics: What Lies in Their Future?' (in Sebeok 1991b: 97-99), and is of vital importance for a *transcendental founding of semiotics* given that it explains how semiotics as a science and metascience is possible. He writes:

Semiotics is an exclusively human style of inquiry, consisting of the contemplation – whether informally or in formalized 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 labeled – 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 maneuverings. Locke designated this quest as a search for ‘humane understanding’; Peirce, as ‘the play of musement’. (*Ibidem*: 97)

In ‘The Evolution of Semiosis’, Sebeok explains the correspondences between the various branches of semiotics and the different types of semiosis, from the world of microorganisms to the Superkingdoms and the human world. Specifically human semiosis, anthroposemiosis, is represented as ‘semiotics’ thanks to a species specific ‘modeling device’ that Sebeok calls ‘language’. Such an observation is based on the fact that it is virtually certain that *Homo habilis* was endowed with language, but not speech. (cf. Sebeok in Posner, Robering, and Sebeok 1997-98, I: 443).

Sebeok claimed that human verbal language is species-specific. On this basis and often with cutting irony he debated against the enthusiastic supporters of projects which had been developed to teach verbal language to captive primates. Such behavior was based on the false assumption that animals might be able to talk, or even more scandalously, that they are endowed with the capacity for language. The distinction established by Sebeok between *language* and *speech* (1986, chp. 2) is not only a response to wrong conclusions regarding animal communication, but it also constitutes a general critique of phonocentrism and the general 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 through to *Homo sapiens*. Language is not a communicative device (a point on which Sebeok is in accord with Noam Chomsky, 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 described language as a *primary modeling device*. Every species is endowed with a model that ‘produces’ its own world, and ‘language’ is the name of the model that belongs to human beings. However, as a modeling device, human language is completely different from the modeling devices of other life forms. Its distinctive feature is what the linguists call *syntax*, that is, the capacity to order single elements on the basis of operational rules. But, while for linguists these elements are the words, phrases, and sentences, ecc. of historical-natural languages, Sebeok’s reference was to a mute syntax. Thanks to syntax, human language, understood not as a historical-natural language but as a modeling device, is similar to 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 thus described, not only do human animals produce worlds similarly to other species, but they may also produce an infinite number of possible worlds, as Leibniz also claimed. This leads us back to the question of the 'play of musement', a human capacity that Sebeok following Peirce considered no less than fundamental in scientific research and all forms of investigation, and not only in fiction and all forms of artistic creation.

Similarly to language, speech too 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. Subsequently, language also ended up becoming a communication device through processes of *exaptation* (cf. Gould and Vrba 1982: 4-15) in the language of evolutionary biologists, enhancing nonverbal capabilities already possessed by human beings; and speech in turn was exapted for (secondary) modeling.

5. Humility of a life of research: biosemiotics as doctrine

Despite such a totalizing approach to semiotics it is notable that Sebeok used neither the ennobling term 'science' nor the term 'theory' to name it. Instead, he repeatedly favored the expression 'doctrine of signs', adapted from Locke who asserted that a doctrine is a body of principles and opinions that vaguely form a field of knowledge. Sebeok also used this expression as understood by Peirce (that is, with reference to instances of Kantian critique). This is to say that Sebeok invested 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. his Preface to Sebeok 1976).

This humble and at once ambitious character of the 'doctrine of signs' led Sebeok to a critical interrogation *à la* Kant 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 also presents itself as an exercise in philosophy not because it deludes itself into believing that it can substitute philosophy, but simply because it *does not* delude itself into believing that the study of signs is possible without keeping account of philosophical questions that regard its conditions of possibility.

For Sebeok no aspect of sign life must be excluded from semiotic musings, just as no limits are acceptable on semiotics itself, whether contingent or deriving from epistemological conviction. However, contrary to first impressions, Sebeok's work does not claim the status of scientific or philosophical omniscience, or the ability to solve all problems indiscriminately.

We believe that Sebeok's awareness of the vastness, variety and complexity of the territories he was committed to exploring and of the problems he analyzed, demonstrates a sense of utmost prudence, sensitivity to problems and humility in the interpretations he offered. This is true not only in his adventures 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.

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Sebeok, Thomas A., 1920-*Signs: an introduction to semiotics*. 2nd ed. (Toronto studies in semiotics and communication) Includes bibliographical references and index. The name of Thomas A. Sebeok is universally associated with the development of semiotics and communication theory in the twentieth century. Indeed, no one else in the world today has had the enormous impact that Professor Sebeok has had on these two fields. It would be no exaggeration to say that without his innovative research and his critical writings, both fields would not be as flourishing and as significant as they are today, as we start the new millennium. It was appropriate in 1992 to launch the Toronto Studies in Semiotics series with Professor Sebeok's introductory volume *Thomas Albert Sebeok* (born Sebők, Hungarian: [ˈsɛbɔk]; 1920–2001) was a Hungarian-born American polymath, semiotician, and linguist. As one of the founders of the biosemiotics field, he studied non-human and cross-species signaling and communication. He is also known for his work in the development of long-time nuclear waste warning messages, in which he worked with the Human Interference Task Force (established 1981) to create methods for keeping the inhabitants of Earth away from buried nuclear waste. A Tribute to Thomas A. Sebeok. Authors. Susan Petrilli. Augusto Ponzio. Content type: OriginalPaper. Published: 29 February 2008. Pages: 25 - 39.