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WHAT IS SEMIOTICS, REALLY?

Interview with Thomas A. Sebeok[1]

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Anti Randviir: *Let us start with the long-discussed "great question": what is semiotics?*

Thomas Sebeok: The most conventional definition is that semiotics is the study of signs and other similar mediating things like symbols and so forth. Something like that was the definition by Roman Jakobson[2]. But I am not very happy with that formulation, because people then ask what the "sign" is, and when you define that, then they ask, what is this what you have defined, and there is no end. The definition Peirce[3] gave implies that semiotics is the study of semiosis. But that is not good either – because people then ask, what is semiosis? So, I find it better not to give a formal definition at all, but rather to explain that for me, semiotics is really the study of the relationship between the mind and reality. On the one hand, there is the mind – whatever you mean by "mind" – the brain or whatever. In this mind, there is a model of "reality" or of the "universe" or the "cosmos", or of whatever is thought to be "out there". Jakob von Uexküll[4]

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[1] The interview was conducted by Anti Randviir, Department of Semiotics, Faculty of Social Science, University of Tartu, on 3 June 1997 on the occasion of Thomas Sebeok's visit to the Faculty of Social Science in Tartu. It was subsequently edited by Anti Randviir and Wolfgang Drechsler.

[2] Roman Jakobson (1896-1982), Russian linguist, structuralist, and semiotician, founder of the Moscow and the Prague Linguistic Circles. Professor at Brno, Columbia, and Harvard Universities,1957–1967 at MIT.

[3] Charles S[anders] Peirce (1839-1914), American philosopher (one of the founding fathers of Pragmatism) and semiotician. His work is published under the title of *Collected Papers* (8 vols), and is currently published under the initiative of Peirce Edition Project as *Writings of Charles S. Peirce* (projected in 30 vols.), see references.

[4] Jakob von Uexküll (1864-1944), theoretical biologist, founding father of biosemiotics and phytosemiotics, graduate of the University of Tartu, founding director of the Institut für

called these the *Innenwelt* and the *Umwelt*. The *Innenwelt* is somehow an internal representation of what he called the *Umwelt*, which I understand only by definition. But let me briefly say that it is the relationship between the internal and the outer world, and I think semiotics studies the relation of "reality" to illusion, the relation of reality to its modelling.

Randviir: *This is a definition rising from the relation of semiotics to its objects, so it is in a way a definition coming from inside of semiotics. But what would the position of semiotics in the context of other disciplines or fields be – both in respect to the "hard sciences" and the humanities?*

Sebeok: But you see, the sciences purport to study reality. Physics presumably studies the world "as it is", chemistry studies the world "as it is", or if you like, psychology studies the "mind". But what semiotics studies is *the nature of representation* of reality, or, as many people like to put it, the process of mediation. Semiotics is *par excellence* the study of mediation, because it basically studies signs, and signs are the mechanism whereby the outer world and the inner world are interrelated. The words "sign processes", the words "sign actions" which is what is called semiosis – Peirce called it that, and the ancients did, too – refers to signs in action: what the action is, is mediation, mediation between the outside and the inside, between, if you like, illusion and reality, and that is semiotics primarily and basically, and everywhere semiotics is concerned with this.

As regards the distinction you made in your question between the humanities on the one hand and the sciences on the other, I think it is artificial. It is an artifact of the terms as they were created. Let me comment on this, because this is a question I have looked into closely and recently, because I wrote an article precisely on how semiotics is a bridge between the humanities and the sciences as they conventionally are defined. (Sebeok 1990, 1996) This notion was much discussed by the Englishman C.P. Snow,[5] who gave a famous lecture which he entitled "The Two Cultures". (Snow 1959) On the one hand, he was a distinguished physicist – however, mostly on the administrative side – who organized the English war efforts, such things as the development of radar. He was very important as an adviser to Churchill, and for that he was ennobled. But in addition to being a physicist, he wrote a large number of novels, about fifteen of them, and they are very important, because they reflect the university life in the 1930s and 1940s in England. They are important as reflections on cultural history.

In this lecture of his, Snow discussed the problem of how is it possible that in English culture there are scientists, great scientists, who have some knowledge –

Umweltforschung at the University of Hamburg. Works having inspired biosemiotics include e.g. *Umwelt und Innenwelt der Tiere* (1909), *Theoretische Biologie* (1920), and *Bedeutungslehre* (1940), see Snow (1959).

[5] Charles Percy Snow (1905-1980), later Lord Snow, English novelist, publicist, and physicist.

he doesn't use the term "to have some knowledge" – of the humanities: occasionally a scientist would go to a concert, occasionally to an art gallery, occasionally he reads a novel. But on the other hand, there is another culture – the literary culture, and these people know nothing about the sciences, they know nothing about what they are. I think an example he gives is that these people don't know what the second law of thermodynamics is, which is one of the basic organizing principles in the universe. How do you explain this great ignorance of one culture to the other culture, especially from the humanistic side to the scientific side, but also to some extent the other? Snow discussed this in this lecture, later published as a book, that created a tremendous scandal and a big storm previously. Eventually he came to America, where he was appointed a visiting professor – in fact the Regents Professor, which is a distinguished professorship – at the University of California at Berkeley. And by some chance, a complete coincidence, he was at Berkeley at the same time when I was at Stanford University. These are very close to each other, and I knew about the ongoing events there. And I simply called him up and introduced myself, and I asked him whether we could have tea together. I was very interested in his book which was published by that time. And he came down to Stanford, and I offered him some sherry in my room. And I said to him – eventually I called him Charles, but at that moment Snow – that I thought that there would be a way to reconcile the two cultures. And he said, "What is that?" And I said, "It is something I do, it's called semiotics," and we discussed it at some length. And he listened very carefully, and didn't say "yes" or "no", he just took notice of it, and he made notes. I told him about zoosemiotics, a term which at that time apparently I had just invented, and to which I will come back if it interests you. He gave me a copy of his book, dedicated to me, and the phrase I remember was, "To Thomas A. Sebeok, wishing him the best of luck in his quest". And "the quest" was presumably – he never explained what he meant – bridge-building, you know. And then he went away.

Lord Snow was married to a well-known English novelist called Pamela H. Johnson.[6] And one day I picked up one of her books, and to my astonishment, there was a character to whom the author refers: "He was a professor at Indiana University, studying zoosemiotics." (Jonson-Hansford 1965) It was very amusing, because that was the first time the word "zoosemiotics" occurred anywhere, particularly in a novel. As she had not been with her husband when he visited me, I knew she must have heard this from him – there's no other way she could have got the term. So, Snow took notice of this, and then he published the second edition of "The Two Cultures" (1993), and in the second edition there is an interesting discussion. He says that the two cultures are not as opposed in the United States as they are in England, and he saw various ways of reconciling them. He never mentioned it was semiotics, I don't think he ever heard of

[6] Pamela H. Johnson, (1912–1981), English writer; The book referred to, is *Cork Street, Next to the Hatter's: A Novel in Bad Taste* (1965). The passage mentioned occurs on page 221.

semiotics or knew how it was spelled – many people haven't any idea what it is... I recently published an article in which I discuss this whole problem, and I also feel that there is a terrible ignorance in our universities about what the relation of the humanities to the sciences is, and how semiotics can be a kind of bridge between the two.

Now let me go a little further. First of all, this whole problem, to my knowledge, was first discussed in an entirely different context by John Locke, who in 1690 published his great work *Essay Concerning Human Understanding* (Locke 1690). Locke was by trade a physician; he lived in exile in Amsterdam. In 1690, he published for the first time this book, but we have a previous draft version. Now, in the published version, on the very last three or four pages, he added a chapter which didn't exist in the earlier version, and in which he suddenly raised the following question: what are the parts of human understanding, what are the fields of knowledge? And he answers, as we can see, all human knowledge is divided into three subjects, three disciplines. The first one he calls physics, but what he means is quite clearly what is meant when one refers to "natural" sciences today. The second field is ethics, by which he means what today is called the "humanities". And then, to everybody's astonishment, and many people have commented on this, the third field is what he calls "semiotic" and which we call "semiotics". And he makes it quite clear that he means semiotics to be a bridge between physics and ethics, or as I would say, between the humanities and the sciences. The first time it was written in English, to my knowledge, and perhaps in any other language, was by John Locke in his great book – and huge book – called *Essay Concerning Human Understanding*.

And another step further. What is the very ratio of the word "humanities"? Well, in the Medieval curriculum, there was the word *humanitas*, but it is very interesting to know that *humanitas* is not opposed to *scientia*: the word *humanitas* was opposed to *divinitas*. So, "humanities" in its classical sense meant not studying God, but rather studying whatever human beings do. So, I think the present understanding of the word "humanities" is a real perversion. And I do not see as sharply the distinction. The opposition is a recent one, and it is, I think, an artifact of modern university life. Now, I must say, it is not universal. In my university, Indiana, there is a College of Arts and Sciences, and this includes all, everything what's called "humanities", everything what's called "sciences". In certain other universities in America, there is a college of "humanities" and one of the "sciences". So, it depends on how the faculties would see this. I do not see much difference between the two, and I'll tell you why.

I think the act of artistic creation, producing a painting or writing a great poem – these are acts of creation, which are no different from the major acts of creation in sciences, making a scientific theory. I think producing a great theory, or producing a great poem, is intellectually of the same effort. I think there are

certain other people who disagree with me on this, and I will give you one name. I refer to a man called Bronowski [7]. Bronowski was a great English mathematician, incidentally a good friend of Roman Jakobson, who wrote eleven episodes which he called *The Ascent of Man* (Bronowski 1974). And he made the point that what is between the acts of creating, something between the signs and the act of creation, in various conventions of the humanities (writing a poem, painting a painting), is always the same.

Randviir: *The "bridging function" of semiotics leads us to a second topic. It is quite common these days to personify semiotics with you, and my question is: how did you obtain this position of a Grand Old Man? Or, to put it differently: what is the importance of the field you already mentioned – zoosemiotics and biosemiotics – in relation to semiotics in general?*

Sebeok: Let me answer the first question first. I do so with full awareness that this is a delicate question, because I am talking about myself, and I certainly am not a modest man, but I don't want to sound immodest. I think that my position in the history of semiotics is an accident, that is, I happened to be in the right place at the right time, and I happened to work with the right kind of people. Obviously, semiotics has a long history, and tremendous and great figures have worked in this field at various times: to mention only Charles Sanders Peirce, but also the great Medieval thinkers, my own contemporary teachers Charles Morris[8] and Roman Jakobson, and my own contemporaries, the distinguished semioticians Jurij Lotman[9] here at Tartu and Umberto Eco[10] of Bologna. I have no illusions about myself; my fortune was that I happened to be a student of Charles Morris, perhaps the only student of his who has fallen into semiotics, and that I happened to meet Roman Jakobson, who I think has more strongly influenced me than any other teacher I ever had. I was lucky enough to meet all these people – I say this quite objectively – this is what happened. Then I reached out, for example, to Jurij Lotman who then was virtually inaccessible to

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[7] Jacob Bronowski (1908–1974), English mathematician of Polish extraction who played an important role in World War II as an adviser to Churchill. He later ran the Salk Institute near La Jolla, California. He made a widely popular TV series, *The Ascent of Man*. (Bronowski 1974)

[8] Charles William Morris (1901–1979), American philosopher and semiotician, founder of the behaviouristic branch of semiotics. During the period of the seminars mentioned, Morris was a professor of the University of Chicago. His works include *Writings on the General Theory of Signs* (1971), *Foundations of the Theory of Signs* (1938), and *Signs, Language, and Behavior* (1946), see references.

[9] Jurij Lotman (1922–1993), one of the founders and pre-eminent figures of the Tartu-Moscow semiotic school; literary theorist, culturologist, and semiotician. Member of the Estonian Academy of Sciences, professor of the Tartu University (1963–1993). One of the main editors-in-chief of the Tartu semiotics' series *Trudy po znakovym sistemam* (=*Semiotike*), see references.

[10] Umberto Eco (*1929), Italian semiotician, novelist, and critic; Professor at the University of Bologna; D.Litt. University of Tartu 1996.

us Westerners. I made a great effort, I was perhaps the only one beside Roman Jakobson who made a point to come to Tartu to meet Lotman. It has been very important for the development of my thinking and for the development of my personality to meet all the important contributors to the field. These meetings enriched my thinking, and perhaps contributed to theirs as well. It is perhaps laughable to call me a Grand Old Man – I happened to be sitting in the right chair at the right time.

And the Indiana University has been very good to me as well. We had a great President named Herman B. Wells without whom I couldn't have done anything, because he encouraged me very strongly, and he made it possible for me to have a research center which was unique. He gave me the necessary support, funds and opportunities wherever I wanted to go. And that encouragement made it possible for me to create a center, perhaps the only noteworthy center at that time. In that sense, I was just lucky to have such a great university President, because without him I would not have been able to do any of these things.

Another aspect of my work which I think is perhaps almost unique – although I must say that Umberto Eco is similar in this respect. I have always felt that a very important part of what I was doing was to encourage my colleagues to develop. I have always been supportive of my students and my colleagues. I felt that one of the most productive ways of encouraging these people was to build up publications. I mean by this that there should be a journal in which all these people could express their ideas. I was also responsible for initiating a number of monograph and book series. For example, in my own university, we have an excellent university press, which I persuaded, and this was very difficult to do at that time, to create a series in semiotics, which I called "Advances in Semiotics". And here again I was very lucky, because the director of the press was very sceptical about semiotics – what is semiotics, why semiotics, why should we publish it, etc. And I said, "Well, try the first book I'll bring you and see what happens." And I was very lucky, because the first book I brought to the press was a translation of Umberto Eco's *A Theory of Semiotics* (1976). The book became a best-seller. So we established an agreement between the press and Umberto Eco, and since then we have published eight of his books (Eco 1976, 1979, 1984, 1984a, 1988, 1994, 1994a). He is now a world-famous figure, and everybody wonders how Indiana University Press, a relatively unknown publisher, got Umberto Eco as an author. Eco on his part is very loyal, because we were the first to give him an opportunity to appear in English. He can now go to any publisher he wants to, but he came back to us. (I am talking about his nonfiction; we don't publish fiction at all at Indiana). So, this was a piece of luck.

Another piece of luck was that I thought of creating a journal. This journal is now subordinated to the International Association for Semiotic Studies (IASS) and called *Semiotica*. But I created the journal *before* the association was founded. So, when the association was founded, I brought in an already existing journal. This journal has grown and grown and grown, and now it appears in

2,000 pages a year. It is enormous; I now have the problem of having so many people sending me so many articles that we can only publish a fraction of it. So we unfortunately have to reject some very good pieces, and still we are already two years behind with publishing. But this is the primary journal in the field, and I am very proud of having created and published *Semiotica*. Then, along with *Semiotica*, there goes another series, the one by Mouton – de Gruyter called "Approaches to Semiotics". And we have recently started another series with the University of Toronto Press, with my colleagues Danesi[11] as editor and Eco and Paul Perron of Toronto, called "Monograph Series of the Toronto Semiotic Circle".

So, with these "instruments" and with the center at Indiana which I headed for 37 years, I have had excellent opportunities to work. I have had very satisfying relationships with my administration and colleagues at Indiana who always think that there is no such thing as "semiotics" – Sebeok invented it to do certain things (that's a joke).

Now to your second question, regarding the importance of zoosemiotics and biosemiotics. When I entered semiotics, everybody, as far as I can see, was interested in human semiotics. You use here in Tartu the word culture – of course, that is quite allright as the term is used by Lotman and the people in Moscow. But I was always interested in biology. Sometimes people ask me what my field is, and I say biology, because I really wanted to be a geneticist. If I had been a geneticist, I would never have worked in semiotics, of course, and would have followed quite a different life path. But I was always interested in this. And through a series of accidents – again! – I ended up with reading biology, and particularly animal communication studies, which were not so rich at that time, which was approximately in the early 1950s. And as I was reading this material, I more and more got the impression that animals have sign systems, too, and that people have never thought in these terms. And I asked myself: well, if animals have sign systems, or communicate by sign systems, or have in their brains significations, which can be analysed by semiotic means, what would be the field of such a study?

And so I just labeled it zoosemiotics, never thinking of that as an invention, but I published the word in *Language* (Sebeok 1963) and this eventually became accepted. But at this point I did not think through the ultimate implications, although in 1976 I published a book called *Contributions to the Doctrine of Signs* (Sebeok 1976) in which – I believe it was there for the first time – I generalized the word. That is to say, I more or less proposed that not only humans and all other animals encounter the world through signs, but I also assume that all other living organisms do that. And at this time – again by accident – I came across the work of Jakob von Uexküll, and this was a revelation to me. Jakob von Uexküll

[11] Marcel Danesi (*1946), romanist, professor of Italian Studies at the University of Toronto.

opened my eyes because there, for the first time, were the foundations of what I call biosemiotics. I used the word "biosemiotics" without knowing exactly what I was actually doing, but there was von Uexküll who never used the term "biosemiotics" or "semiotics". All of a sudden, this gigantic productive theory of semiotics which von Uexküll didn't realize *was* semiotics – he called it "theoretical biology" – was an enormous revelation to me. What followed was my acquaintanceship – or friendship – with Thure von Uexküll,[12] the eldest son of this great man, who collaborated with me in making his father's major works available in English. (Uexküll, J. 1926, 1957, 1982, 1992) I provided the outlet and publication, Thure provided the explanations, biography of his father, etc. Jakob von Uexküll was totally unknown in the history of semiotics, and to change this was very important.

Randviir: *Can you outline your contact with the Eastern European tradition in semiotics?*

Sebeok: This is quite simple. I of course knew about Lotman, about Ivanov[13] and these people. As a matter of fact, I also knew about Bogatyrev,[14] the reason being that Jakobson, my teacher, frequently talked about him. And another matter I should mention: I always encourage the availability in English of great but inaccessible works in foreign languages. Let me mention two names, both of which were Jakobson's inspirations, not that he suggested them, but the names were mentioned by him. One of them was Vladimir Propp.[15] Now, nobody in America had ever heard of Propp, or if they had heard of him, they considered him a minor, indeed a marginal contributor to folklore studies. But I was very interested in him. I thought, this is so important, so interesting: why doesn't anybody know him? So, I somehow managed to get hold of a copy of his *Morfologija Skazki* through the Library of Congress. The director of the Slavic division in the Library of Congress happened to be Sergei Jakobson, the brother of Roman, whom I knew socially. So, I got hold of this, it was phenomenal and left a tremendous impression on me. So, I said to myself that I've got to get it translated. I turned to my friend Svatava Jakobson who was the second wife of

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[12] Thure v. Uexküll (*1908), professor emeritus at the University of Ulm, Sc.D., University of Tartu, 1994. Author of *Der Sinn des Lebens* (together with J. v. Uexküll, 1947) Articles pertaining to biosemiotics include e.g. *"The Sign Theory of Jakob von Uexküll"* (1987) and *"A Statement to Sebeok's 'Semiotic Self'"* (1995), see references.

[13] V.V. Ivanov (*1929), Russian philologist; publications on semiotics, general philology and on Indo-European languages.

[14] P.G.Bogatyrev (1893–1971), Russian folklorist and philologist. Belonged to the Prague Linguistic Circle. The monograph referred to, is *The Functions of Folk Costume in Moravian Slovakia* (1971).

[15] V.A. Propp (1895–1970), the pre-eminent Russian folklorist, author of *Morfologiia Skazki* (1928), see (Propp 1958, 1968)

Roman, and who happened to be a professional folklorist. So, I said to her: "Help me to get this published." We got a translator – I must say, so many years after the event, that the translation was not very good, and Svatava, who checked the translation, didn't get the subtleties. For this I am sorry, but it was the best we could do. My Russian was not so good, so I could not judge this.

Here again, the luck was that I sent a copy to Claude Lévi-Strauss,[16] who was a friend of mine from earlier days. Lévi-Strauss had never heard of Propp! I said, "Claude, would you review this book?" And he said, "It's a fantastic book, but I have some disagreements." So, he reviewed the book, but he expanded the horizons of Propp in the light of his own thinking (Lévi-Strauss 1960). Lévi-Strauss was of course a great thinker, although he was not yet very well known. He had published *Tristes Tropiques* (Lévi-Strauss 1963) and perhaps he had finished the book on kinship (Lévi-Strauss 1969), but he was not yet known. But what I didn't know at that time was that Lévi-Strauss was already thinking of his gigantic four volume work *Mythologiques* (Lévi-Strauss 1969–81), which was published later, and he was very interested in myth. So, he wrote a fantastic review and – it's a strange way of putting it – it made Propp very famous. (Several years later, somebody made a second translation, because the first one was really not good. That was published (Propp 1968), and Propp is now a part of the curriculum of every place in folklore.)

Let me add another piece of luck. I don't remember when, but I was asked by our folklore department to teach a course at the University, which I normally didn't teach, and I called it "Structural Analysis in Folklore". I had very good students in this class, and one of them was a brilliant one and called Alan Dundes. Dundes is a professor of anthropology at Berkeley now. He wrote his Ph.D. dissertation, applying the analysis of Propp to American Indian folk tales. So, not only am I responsible for the publication of Propp in English, but also for expanding him via Lévi-Strauss and Dundes.

Randviir: *Now that we have entered the wide background of your contacts with the East-European, and West-European, structuralist traditions, may be you would briefly describe the history of your contacts with the Tartu School of semiotics.*

Sebeok: Well, I even published this as a story in the second edition of the reader by David Lucid, *Soviet Semiotics*. (Sebeok 1988) I had been very eager about Lotman, when again a piece of luck occurred. I was at that time mainly doing work in Fenno-Ugric linguistics, and the Fenno-Ugric people had congresses in various places. One of them was organized by academician Paul Ariste[17] in

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[16] Claude Lévy-Strauss (*1908), the main representative of French structuralism.

[17] Paul Ariste (1905–1990), Estonian philologist and folklorist, member of the Estonian Academy of Sciences.

Tallinn. I remember that I came from Helsinki by boat, and I was telling my wife, "I am going to Tallinn, in which I am not terribly interested, and there's Tartu in which I am terribly interested: how do I get from one to the other?" This was not a question of geography, this was a question of politics, because Tartu was absolutely closed. And when I arrived in Tallinn, I went to my friend Ariste, who was a very nice man, and said to him, "Can you help me to get to Tartu?" He asked why and I said, there's this and this, and he said, "I will do my best, but I don't think I can help you." So I went back to my hotel.

Next morning I received a telegram which said that there was a service of visa for one day. They sent a limousine for me, and my wife and I were received here in Tartu. I remember driving to the University; on the steps there was Professor Bogatyrev. I don't know why he was there, but he was apparently the honorary president of this group. Now, what did Bogatyrev know about me? What he knew about me was that I had published an English translation of his famous book on Slovak costumes (structural analysis) (Bogatyrev 1971) – a very original book, and totally unknown in America, because it appeared not only in a foreign language like Russian, but in Slovak – nobody read Slovak. And not only had Bogatyrev been translated, but I asked a colleague from Moscow[18] to write an introduction. Bogatyrev was very pleased, and now he was on the steps, and next to him was Lotman who was described to me as the secretary of this group, there were Ivanov, Revzin,[19] and many other people. I spent an entire day talking – in English, with someone translating what I was saying – and taking walks with these people; it was a very happy day. My wife and I were completely intoxicated with that day, but in the evening we were put in the limousine and taken back from Tartu to Tallinn. I was very careful not to talk with my wife, because I knew that the driver was a KGB agent.

Randviir*: After the death of Lotman in 1993, it is a commonplace to say that the Tartu School of semiotics is dead. Do you think so, too?*

Sebeok: Lotman is dead, not the school. Of course, it depends on what you mean by "Tartu School": if you mean Lotman, of course it's dead. If you mean semiotics, of course it's not dead, on the contrary: I think semiotics is continuing in Tartu, and clearly it is developing rather well and rather healthily, although nobody knows how it will finally turn out. In Imatra,[20] I got the impression that under the leadership of Igor Chernov,[21] and with young people

[18] The introduction to Bogatyrev's *The Functions of Folk Costume in Moravian Slovakia* is by Boris L. Ogibenin (1971:9–32).

[19] I.I. Revzin, linguist and semiotician, member of the Tartu-Moscow Semiotic School.

[20] Imatra in Eastern Finland is the site of the well-known annual Semiotics summer school directed by Eero Tarasti of the University of Helsinki.

[21] Igor Chernov (*1943), between 1992 and 1997 professor of semiotics at the University of Tartu.

like yourself and others, it's flourishing and it's doing very well. How can you call that dead? I also don't know what the role of Mikhail Lotman[22] is; there are many Lotmans left, but I am not sure they are doing semiotics. You have to make a distinction between Russian literature and semiotics.

Randviir: *How would you set the Tartu School in the general map of semiotics?*

Sebeok: If there is a Tartu School at all! You call it the "Tartu School", but people in America call it the "Moscow-Tartu School", and the Moscow-Tartu School doesn't seem to have a coherent program, although I suppose it could be described as that which appeared in the early volumes of *Semeiotike*.[23] I would say that it is an independent force of great power among those people who were interested in culture and literary things. There were occasional excursions, because Lotman was somehow aware that there is something called the biosphere, a term he obviously adopted from Vernadsky.[24] But he was very adamant about the "semiosphere". I remember meeting Lotman once in Bergen, and I asked the question: "Does 'semiosphere' mean the sphere in which signs, or human signs, are located?" He didn't really see how there could be such a thing as biosemiotics. His view was very, very human-centered, but in some of his publications, he left the door open. Now, I would say that, if Lotman would have restricted his view to just humans, then I would object, and I would not consider that correct, but it is possible that towards the end of his life he became interested in broader views. In Bergen, we had a long dinner together and discussed it a bit, but the difficulty was that my Russian is poor, and his French was not all that good. It was the first time, I think, that he was in the West, and he was tired; I was tired also, because I had just flown there from America. We had a wonderful evening, but whether we reached any understanding, I cannot really say.

Let me also say something about the expression "secondary modelling systems", which I discussed at great length with my friend Ivanov. I think that Lotman was wrong about this term, and I published an article on this in Broms' volume (Sebeok 1988). I do not think "secondary modelling" is a correct term: language is a secondary modelling system, because before language there are signs which are non-linguistic, such as infants have preverbal, nonverbal signs. So I think that what he called "secondary modelling systems" could be called

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[22] Mikhail Lotman (*1952), Juri Lotman's son, until 1996 lecturer in semiotics at the University of Tartu, currently professor at the private Estonian Institute of Humanities in Tallinn.

[23] Cf. B.A. Uspenskij, V.V. Ivanov, V.N. Toporov, A.M. Pjatigorskij, J.M. Lotman, *Theses on the Semiotic Study of Cultures (as Applied to Slavic Texts)* (1973).

[24] Vladimir Ivanovich Vernadsky (1863–1945) created the fields of geochemistry and biogeochemistry. His studies of cosmic and solar radiation effects on biogeochemistry led him to eventually formulate his astounding and revolutionary theory on the biosphere, as set forth in *The Biosphere* (1926).

"tertiary modelling systems". But whether this expression is useful at all, I am not at all convinced. Ivanov's story is a little different from the story that other people tell. This is a complicated question which I don't want to go into detail now, but it is an interesting question.

Randviir: *Finally, let me bring up a topic that is very much in the forefront of discussion these days. Advancing biosemiotics, you have also touched on the field of artificial intelligence. I would like to ask, therefore, about your vision of the future of the human semiosis in relation to the development of "AI".*

Sebeok: I am not very interested in AI. In my opinion, nothing has happened there, there are too many contradictory views, and I don't think that any interesting progress has been made. I am aware of the literature, but it doesn't touch me very closely and I've never thought of making my opinion public. However, I do have a vision of the future. I did publish an article about it (Sebeok 1988). You have to distinguish between semiotics and semiosis. Even if every human would die, semiosis would continue through mechanical means. There is the whole question of *prosthesis*, a limb or heart replacement of something which can not be replaced. After a while, you will find human beings' parts replaced by devices. But that's not really what I am interested in. I am more interested in the opposite, and this is already being done in Japan, that computer chips, which are now getting smaller and smaller, are being replaced by bacteria. Thus, there is some sort of melting between life and robots, robotics. I think one of the most interesting future developments is robotics, which is quite different from AI. I don't know about Europe, I think in Russia there is robotics, but in America this is one of the most exciting fields. And you can talk about semiosis in robots. I think semiosis occurs only in living things and products of living things like robots.

Randviir: *So you think that artificial, or pseudo-artificial semiosis will start with the use of bacteria in computers and high-tech generally?*

Sebeok: It seems to be so, but of course there are also things like cloning.

Randviir: *This leads to the problem of intentionality and semiosis. Or is their relation no problem at all?*

Sebeok: I have often discussed this very problem with Eco. The trouble with intentionality is that you can talk about the intention of the human; Roland Posner[25] has written a great deal about this. But what does it mean: intentionality in bacteria? What does it mean: intentionality in camels and kangaroos? I don't know what this means. Thus, I think that the concept of

[25] Roland Posner (*1942), German linguist and semiotician, professor at the Technical University of Berlin, current President of IASS.

intentionality is very useful for human semiotics and linguistics, especially in the study of modelling. But in my own biosemiotic work, I try to eliminate this notion, because at the moment I don't see how it would apply or how it would be useful.

Randviir: *But if we assume that intentionality refers to semiosis as the meaning-generation mechanism, there arises the question whether semiosis in the biosphere is merely our projection of semiosic/semiotic concepts.*

Sebeok: Yes, this is the question, but nobody knows the answer. Bacteria produce meaning, but how do they produce meaning? This is so far down the line of research, because we don't even really know anything about the human mind, we don't really know about consciousness, although this is a period in which an enormous amount of research on consciousness is conducted; almost every day a new book appears with widely different opinions to the next one, it's very hard to make sense of these. My personal view on this is very close to that of John Searle.[26] But again, nobody knows anything about consciousness, and the same is true for intentionality, I think.

Randviir: *So, it's a fine open end.*

Sebeok: Well, it's a black box to me.

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[26] John Searle (*1932), philosopher of language and of mind best known for his „speech act theory", currently professor of philosophy at the University of California at Berkeley.

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