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THE BIO-TRANSLATOR

INTERVIEW WITH PROFESSOR IN BIOSEMIOTICS KALEVI KULL

The actors:
Kalevi Kull (K)
Riin Magnus (R)
Morten Tønnessen (M)
(with contributions by Donald Favareau and Paul Cobley)

The scene:
Department of Semiotics, Thomas A. Sebeok Memorial Library, Tartu, April 6th 2010

M: *First, perhaps you could say a few words about your revelation a couple of years back. When we met during the Tallinn conference of the Centre of Excellence in Cultural Theory*[1]*, you claimed it was only the last couple of years that you've understood correctly what semiosis is and what biosemiotics is. What was it that you came to understand?*

K: What I referred to was grasping the role and the nature of plurality, and I still think it is crucially important. Meaning in general can be understood via plurality, and that's a concept which concerns ontology.

M: *What kind of plurality are we talking about?*

K: The difference between anything meaningful and anything that has no meaning can be described as a difference between the unique and the plural, or one and many. Everything that has meaning is plural.

M: *So what is unique or unitary, what is only one, cannot be meaningful, because being meaningful implies multiplying of what is meaningful.*

K: The problem is that it is almost impossible — or at least quite hard — to imagine something that completely lacks meaning. On the other hand — this is exactly what physics has to do.

[1] Spatiality, Memory and Visualisation of Culture/Nature Relationships — Ruum, mälu ja ilme looduskultuuris: Teooriast (October 22–24, 2009).

M: *A non-semiotic approach would treat an object of biology as one objectified object only, and not as a plurality, and would thus lose a lot of the meaning involved. Correct?*

K: Correct. Actually that is what most of the natural science does and should do. This is an important complementary way to describe the world.

M: *Is there meaning at all in nonsemiotic biology? Because you said meaning is always related to plurality.*

K: Not related to — meaning itself *is* plurality. Since science cannot be carried out outside of culture, there is meaning even in the case of nonsemiotic biology — because it is dealing with knowing. But in order to describe the meaningfulness (or knowing, in the broadest sense), we need to notice the plurality of what we describe.

R: *To move on to the biographical treatment of your biosemiotic work — some of your earlier semiotic writings relate to your work in biology, for example the recognition concept of species. What other theoretical ideas stemming from theoretical biology have guided you to semiotics? Do you think there are concepts which have connected these two spheres?*

K: When I had just graduated at university, I happened to know a group of biologists which we can describe as structuralists. I learned only later that they were structuralists, and even later how this is related to semiotics. But it has been very important to use that type of models in biology. I refer here to the nomogenetic approach. They were using the concept of form. They also taught me that ontogeny is more fundamental than phylogeny. The other aspect was the problem of teleology, which was so important for them to think about. These were not the ways of thinking of mainstream biology.

M: *Can you explain why the recognition concept of species can lead a biologist to get an interest in semiotics?*

K: Due to its relational approach. The recognition concept of species, as initially formulated by the entomologist Hugh Paterson, is in principle about relation, and those who deal with molecules or biophysical models usually do not think on the basis of relations. Actually, relation is already within the biological concept of species, but it is particularly strongly present in the recognition concept, where you see that the object (a species) has no precise borders, it is in principle fuzzy, borders and isolation are not its criterial features.

R: *Back to the influence of structuralism. What could we derive from that for today's biosemiotics? Would you say that today's biosemiotics should relate to structuralist semiotics?*

K: Yes. The structuralist approach has been used in biosemiotics as well — Marcel Florkin is an example. Then Charles Peirce was taken into use, and structuralism was considered as a wrong approach, or at least not effective. But now, we have reached another stage already, after that period of pure Peirceanism in biosemiotics. Now we can see that structuralism is just one particular slice or part of the semiotic model. A special case, a restricted case within a broader and deeper Peircean approach, but in several occasions quite useful.

M: *Can you tell us a little about your first contact with the word* biosemiotics*, and with biosemioticians?*

K: Maybe it was like this: that when we had our meeting here in 1978 on biology and linguistics, we coined the term biosemiotics ourselves. At least I had an idea to make a large poster just with that word: biosemiotics.

M: *In English?*

K. No, in Russian. *Biosemiotika*. The whole event was in Russian. The term biosemiotics certainly appeared in conversations, with Sergey Chebanov from St. Petersburg, and Alexei Sharov and Alexander Levich from Moscow.

M: *These were there?*

K: Here in Tartu. Plus Juri Lotman and many young people. Further, I have a book by Juri Stepanov which was published in 1971 [cf. Stepanov 1971], and which I bought here in the bookstore "Teadus" in Tartu on October 8, 1971 [according to my inscription in the book], where there is a chapter with "biosemiotics" in the title. Most probably I got it first from there.

M: *At this time you still had an identity simply as a biologist, and it took some time before you transferred institutionally to the department of semiotics which was later established. What happened in the meantime?*

K: I would never emphasize institutionalisation of one's discipline. My field of expertise is mainly general biology, and some parts of theoretical biology. I understood very early that I cannot go alone — I needed people around me, good colleagues with whom to discuss.

M: *What year was it that you formally got the connection to the semiotics department?*

K: Formally or informally?

M: *Formally.*

K: The Department of Semiotics at Tartu University was established in 1992. I read my first course in biosemiotics in the autumn of 1993, to biologists, as professor of ecophysiology at the faculty of biology. Juri Lotman died in the same semester, when I had the course. I had asked him to give the introductory lecture for that course, but he was already ill, and he dictated his introduction to my lecture course on biosemiotics in the hospital to his son. I read it to the students — just a couple of pages. I also talked with Igor ernov, who was the head of the Department of Semiotics. "I'm giving that course to biologists", I said, "why not inform your students in semiotics too that there is such a course?" And soon after, ernov included it into the curriculum for semioticians.

M: *Was the course language Estonian?*

K: Yes. And together with the students who attended this first course, we established Jakob von Uexküll Centre, in the autumn of 1993.

M: *Could you say a few words about your first contacts with some prominent biosemioticians internationally, or contacts that mattered to you in your development?*

K: One I wrote to when we had our meetings and seminars in theoretical biology was Conrad Waddington, another was Robert Rosen. Both of them had views close to biosemiotics, in their last years. When we [young Estonian theoretical biologists]

discovered Jakob von Uexküll, in late 1970s, we started correspondence with Thure von Uexküll. The contact with Tom Sebeok was made via Thure von Uexküll.

M: *Not long after?*

K: That was only in the late 1980s. Thure von Uexküll was here on our invitation in 1989, and about at that time we also started to correspond with Thomas Sebeok.

M: *What about international contacts in the 1990s?*

K: Thure von Uexküll and his colleagues organised two meetings about Jakob von Uexküll in Glottertal, close to Freiburg. At the second of those, in 1993 (I was not present at the first) —Thomas Sebeok, Jesper Hoffmeyer, and Thure von Uexküll were there, and after that it already grew very quickly. I went to Copenhagen. I started to attend meetings — Imatra, Toronto, etc.

M: *One thing me and Riin have tried to discuss beforehand is whether or not it makes sense to talk about different periods or phases in your professional work. There is at some point a turn towards biosemiotics, whereas your background was more specifically from biology or theoretical biology. What other stages would you divide your professional career so far into? What other turning points are there?*

K: Probably a very important one has been related to mathematics. For a very long time, I was trying to study mathematics and to apply this in the modelling of living systems.[2] In the 1970s and 1980s many tried to find theories in mathematics that could be used in the humanities, and also in semiotics. At a certain point I changed that view — this was probably at the time when I started to study semiotics more systematically.

M: *This is part of the biosemiotic turn — to pay less attention to mathematics in biological methodology?*

K: Yes. The fundamentals of semiotics are neither quantitative nor exact. Of course, mathematics simply as clear thinking should always be with us as scholars.

M: *We have discussed whether you would acknowledge an ecosemiotic turn, a turn to more interest in cultural, or ecosemiotic (man-nature) issues at some later point, maybe around 10 years ago.*

K: This was a strong feeling indeed — starting to *see* how we press our linguistic forms into the nature we are designing. I wrote that little paper about ecosemiotics for *Sign Systems Studies* [see Kull 1998] after I met Winfried Nöth at the meeting "Semiosis. Evolution. Energy" in October 1997 in Toronto, and had been listening to his talk about the issue [cf. also Nöth 1996 and 1998]. It was really an insight, seeing how a semiotic approach and these human relations to the ecosystem may be connected. But on the other hand thinking about the possibility of balanced ecosystems, and diversity and the mechanisms behind diversity, had been very important for me earlier as well. Reproduction is an easy topic, trivial in a way. But balance in the systems which include reproduction is a tricky issue, and that's from where diversity is stemming.

R: *A few words about your identity as a scientist. How would you identify your research style? Sebeok distinguishes between researchers who are like bees and*

[2] Cf. for instance Kull and Leht 1984, and Sharov and Kull 1990 — and further the work on mathematical modelling of ecophysiological processes of growing organisms (Kull and Kull 1989).

moles respectively [Sebeok 1995] — the first ones concentrating here and there, and making synthesis, and the others digging deeper. How would you describe your style of work?

K: I clearly would think of myself as one who likes to dig deeply. Interdisciplinarity is accompanying that sort of approach by itself, unavoidably — but going deep is the most important part.

M: *Can you please mention the one notion you've coined that you're the most satisfied with at the moment?*

K: Is there any? Probably nothing. [Or maybe there is, remarks K: Sigma-science; and recognition window.]

M: *Then another very difficult question. Mention one article related to biosemiotics that you have written that you would like those who have still not read it to read.*

K: „Biosemiotics: To know, what life knows" [Kull 2009]. It is not a long article, but it includes things that I'm interested in at the moment.

M: *You have not published a monograph on the broad topic of biosemiotics. Do you have any plans about doing so?*

K: I'm really happy that I haven't done that! Because my understanding is all the time developing. If I had done it five years ago, I wouldn't like it now. Yes, sure, I have planned to write it — I have a manuscript, which is over 150 pages long. It is not ready, and whether it will become ready I do not know.

M: *Does it have a title?*

K: Yes, the recent title is *A Theory of Biosemiotics*.

R: *Does it have a subtitle?*

K: No subtitle.

M: "*Knowing what life was?" The work title, anyway, hints that you're not claiming exclusivity, that you alone define biosemiotics.*

K. No, no. It cannot be so. Biosemiotics cannot be defined by one person only.

M: *I have one question left that is of a biographical nature. It's a personal question. On my notebook here it says:* Are you on a mission? *But I think that clearly the answer to the question is "yes". So the question is rather what kind of mission you are on — as an ambassador of biosemiotics, and of Tartu semiotics in general?*

K: I do not understand the question entirely. Being on a mission is about what we find is the right thing to do. I think four things are important to pay attention to, in whichever branch of science. First, work with a problem with a theoretical dimension, and go as deep as possible in theory. Second, become a professional of a certain empirical field. Third, the problem and the work you're doing should be related to the local culture with which you identify yourself. Fourth, this should all be directed by your ethical sense.

M: *These are good rules of conduct for science, or for a scientist. But when I'm hinting that you're an ambassador of biosemiotics, I also refer to the enthusiasm with which you seem to promote this as a topic of research, or as a methodology.*

K: I do not think it is specific to biosemiotics.

M: *Enthusiasm?*

K. Yes.

M: *But you clearly have some feeling of joy when doing biosemiotics at many occasions.*

K. Correct, absolutely true.

R: *I have what may be a bigger question. In one of your first articles about biosemiotics, published in 1992, titled „Evolution and semiotics" [see Kull 1992], you list the problems that the life sciences are facing, for which semiotic biology, or biosemiotics, is needed. They are: (1) the notions of meaning and information, which need to be clarified, (2) the exact meaning of adaptation, (3) how to integrate zoosemiotic results into theoretical biology, and (4) how to link ecological values to scientific biology. Now, nearly 20 years have passed — would you like to add something today? Do you see any problems that will have to be faced in the future with the help of biosemiotics or semiotic biology?*

K: This is what we tried to formulate in the paper I wrote together with Claus Emmeche and Don Favareau, called „Biosemiotic questions" [Kull *et al*. 2008].

R: *So you would refer to this article as a follow-up to the suggestions you made in 1992?*

K: Yes. It is simply more systematic.

R: *Do you see, in the future, any problems that have not come up yet, but may arise due to the ways science has taken today, and the role technology is playing as a partner of the scientific enterprise?*

K: This is a difficult question. I do think that semiotic biology sees science as such in a much broader way — as inherently ecological — than biology as a natural science does. The challenge is to make a science which is in balance. Our task is to turn the problem of the balance of science into knowledge of balance.

M: *Can I interpret you this way: that you suggest that cultural balance could, and should, be the topic of biology?*

K: Yes, jaa, jaa. Understanding the balance within living nature is necessary for the understanding of cultural balance. And here, semiotic biology has a lot to offer general science.

R: *Only at a descriptive level? Or are you also saying that science itself should be balanced by other types of human understanding, like arts and philosophy?*

K. This is a question for theory of culture, it's beyond my knowledge. But yes.

M: *Can you pinpoint exactly how culture today is imbalanced?*

K: A question which indicates it pretty well is that of economic growth. When you ask economists how it is possible to have an economy which would not be based on the growth of consumption... I haven't yet found any economist in Estonia who could answer that question. But it has to be answered before we can speak about a balanced culture. The problem of growth can be translated into an ecological problem, in terms of biology. And that's where biosemiotics can provide an answer.

M: *Maybe we can ask you to comment the Tartu deep ecology platform [Kull et al. 2004]. What was the motivation behind it?*

K: Our motivation was in part our interest in ecology and deep ecology, and on the other hand our interest in semiotics. We tried to put these things together. The understanding behind it was in a way our reasoning about the phenomenon of violence. We understood that violence is a specifically human phenomenon.[3]

M: *Violence?*

K: Violence.

M: *Really?*

K: Yes.

M: *There is no fighting among animals?*

K: There is fighting, but not violence.

M: *What is the difference?*

K: Violence is when something which is bad for others is done intentionally as bad. In the case of non-human relations, that never happens. What is done is done to be good for someone, not to be bad for somebody.

M: *How can you know for sure that a cat, for instance, does not intentionally harm someone else just for the sake of inflicting harm?*

K: Ha! You are asking: How can we know what there is in other species' umwelten? That is another story, a long story, which is deeply biosemiotic.

M: *Maybe we should talk about the status of biosemiotics, or how it relates to the natural sciences. One thing I would like to ask about is your use of the term "paradigm". You have often talked and written about biosemiotics as a paradigm for biology — what do you mean by that?*

K: That was particularly in the beginning. What are the different paradigms, in a Kuhnian sense [see Kuhn 1962]? It is a whole system of explanation, which is in a way complete, and which is different from another, and which cannot be disproved using the arguments of the other paradigm or approach. It cannot be disproved because it is already logically complete. In this sense, a paradigm is different from a model, because models can be compared — they are never total in this sense. Semiotic biology, which I later contrasted with physical biology — these two pretty much carry the features of paradigmatic difference. However, I would now prefer to call these complementary approaches.

M: *The idea of a paradigm has, as you say, to do with being a world of its own in explanatory terms — but it is also connected with the idea about competition between*

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[3] M remarks: One should bear in mind that the philosophy of nonviolence of Mahatma Gandhi was one of the greatest sources of inspiration for the founder of deep ecology, Arne Næss (1913–2009), equalled in its influence only by that of Spinoza. In Norwegian, Næss published several titles about Gandhi — the most systematic being Galtung and Næss 1994 (originally published in 1955). For an English version, see Næss 1974. For Næss, self-realization ultimately presupposes praxis of nonviolence with regard not only to other people, but also to nature.

K remarks: The idea behind the Tartu deep ecology platform deals with a slightly different aspect — the linguistic source of violence, or violence as a capacity of semiotic animals.

different paradigms, and how one supersedes another. Is the goal of the biosemiotic paradigm to take over from the paradigm of physical biology, or to supplement it?

K: Here, there is an important difference with regard to the initial Kuhnian description of paradigm, because for Kuhn, the next paradigm can replace the earlier one because it happens to be more general, and to take the first as a special case. But in the life sciences, and in the humanities, what we can characterize as paradigms — these coexist. What is the mainstream, and what is in minority, that may alternate. But it is not possible to disprove the other paradigm once and for all. This points to the concept of complementarity as a replacement of "paradigm". These are complementary descriptions. And if they are complementary, they are both required for a more complete understanding. In order to understand living phenomena, or culture, you need several complementary descriptions — including those of biosemiotics and other alternative brands of biology.

M: *Would it be correct to observe that you have gone, at least rhetorically, from talking about "the new paradigm" to rather stressing complementarity?*

K: Correct. Fortunately, I have used the expression "the new paradigm" very seldom — a long time ago. The concept of "new" is not a good concept for any scientific enterprise — neither "new" nor "old".

R: *Would you agree that one of the particular characteristics of biosemiotics is that it can include culture in its models?*

K: Biosemiotics does not *include* culture in any way, but it is a means to better locate, or see, relationships between culture and phenomena of life.

R: *Let me rephrase: Does biosemiotics have a humanistic agenda? Can biosemiotics tell us something about the human being?*

K: Ah... Yes! That is true. What we come to see is that there is a lot about what we *mean* that is pre-linguistic. This pre-linguistic and pre-cultural part of meaning, and of experience, and of memory, is certainly important for understanding humans. This does not directly concern culture — but humans, yes. In order to understand culture and language properly, this is very helpful.

M: *What is the difference between biosemiotics' take on culture, and sociobiology's take on culture?*

K: There is a huge difference. Sociobiology simply extends a simple mechanism — extrapolates the mechanism of natural selection. It is not interested in the emergence of different forces which impacts culture.

M: *Eero Tarasti says something like this [Nöth et al. 2008: 529–530]: The great value of the biosemiotics of the von Uexkülls is that unlike sociobiology, it explains cultural phenomena not by reducing them to biological phenomena, but by showing that they are related but irreducible. What do you think about that quote?*

K: Very well said.

M: *Now a question about science in the sense of natural science. What is it that determines what is scientific, and what is not? What are the criteria for what qualifies as a scientific activity?*

K: That logical reasoning can disprove it. And that operational concepts are being used. These are the characteristics of the scientific. But when using the term science in relation to the semiotic field, we cannot use the same textbook criteria from the philosophy of science. They typically make use of criteria which apply for natural sciences but do not apply for much of semiotics. So we need to generalize, we need to use more general criteria — I do not know exactly what those are, because philosophy of science is not my field. But operational concepts and the possibility of disproval are probably the important criteria.

M: *Is biosemiotics science, or* about *science?*

K: In the sense just mentioned, it is a science.

M: *Is it generally the topic matter, or the method, that determines whether or not an activity is scientific? You have hinted that the answer is methodology, I think, in what you have said.*

K: (*pauses*) Yes, probably. We can say that a certain knowledge is scientific, but the label "scientific" is also connected to the method to obtain that knowledge. It is interesting that a method semiotics is using as scientific is *translation* [more precisely, a certain type of translation]. This is clearly not a method of natural science.

R: *What do you mean — translation between different academic fields, or translation between reality and...*

K: No — translation is generally within living systems only, from one person to another, or from one language to another, for example. I think it is important to recognize that translation can be a valid method for acquiring scientific knowledge. And yet you find little about translation as a method in the textbooks of philosophy of science.

M: *Now I want you to explain first why biosemiotics is not biologism, and second why biosemiotics is not semiotic imperialism.*

K: (*laughs*) If your approach is based on a positive attempt, what you do cannot be characterized by negative terms. The terms you are asking about — biologism and semiotic imperialism — these terms are by the definitions you indirectly refer to here, negative terms. I cannot see any argument to support something negative. Look — biosemiotics argues for the value of qualitative diversity, and for the symbolic threshold that separates human language from non-human sign systems.

M: *We have two questions for you, which will only be revealed later, from some of your colleagues. But first I will present a quote from Don Favareau. Namely:*

> Kull writes that "Hoffmeyer is a therapist of biology, as semiotics is a therapist of culture". Kull, in turn, is a therapist of biosemiotics (and of biosemioticians).

K: Thank you very much. So, semiotics has certain similarities with medicine, as Umberto Eco said.

M: *Who needs biosemiotics? Or, what fields would benefit from an understanding of biosemiotics? We could obviously mention biology and semiotics, but are there other fields as well which would clearly benefit from this approach?*

K: They know.

M: *They will know who they are? Is biosemiotics relevant for philosophers?*

K: They will know. (*laughs*)

M: *Ai ai. Now I will ask you an outrageous question — though it shouldn't be. You say that biosemiotics is science. Is there a biosemiotician who deserves to win a Nobel price?*

K: I would really be glad if they would close the enterprise of Nobel price awarding before that will happen (*laughs*).

R: *And this alternative Nobel price?*

K: The alternative Nobel price would be a different story. This is to help the world.

M: *The Right Livelihood Award?*

K: Exactly. (*laughs*)

M: *Let us turn to the Estonian connection [see Sebeok 1998]. There are several relevant names here, including Jakob von Uexküll, Karl Ernst von Baer and Juri Lotman — though first of all Uexküll in the context of biosemiotics. Baer and Uexküll have in common that they are of Estonian origin, but lived at a time when Estonia didn't exist as a state, and they were both German language scholars. There's a link between German thought and Estonian biological tradition. What significance does the German intellectual tradition have for you — and for biosemiotics?*

K: First, they were Baltic Germans. We shouldn't say in that direct sense that they were Estonians. But it is interesting that they belong to the same (*pauses*) ecosystem, which includes the culture in which we live. They were at the same place, and despite different nationalities they belonged to one and the same intellectual culture — or were at least very close to it. That is the way we are connected. There are many histories — not one single history. In each culture, each science has a different history.

M: *With regard to Jakob von Uexküll and biosemiotics, would you say it is a historical coincidence that German biological thought is important for biosemiotics? That it just happens to be so?*

K: Yes and no. In terms of the contemporary construction of history, as we find it in most biosemiotic literature, we can explain that it is not just a historical coincidence. With regard to the history of biology, and the difference between the Anglo-American and the continental tradition — particularly German though, but also French, and Russian — the latter has been very relevant for semiotic thinking as it has developed in biology, more relevant than most of the Anglo-American theorizing in biology. And Estonia's place, centrally located at the crossroads of various borders, has created conditions for this type of thinking.

M: *I think we can take Timo [Maran]'s question now. This concerns German intellectual thought. He observes that you have in your biosemiotic made a synthesis of various sources of inspiration, including Jakob von Uexküll and other German intellectual thought, and for instance Terrence Deacon and cognitive semiotics, cognitive science. He characterizes these two as difficult to reconcile, and wonders how you manage to make a synthesis out of these various sources of inspiration. How do they go together?*

K: (*pauses*) I don't know. That is the most interesting part of theoretical work. What theory does is making connections between things that are far apart from each other. It is easy to compare things that are similar, but the most fascinating part of

theoretical work is to find similarities, connections, relationships, logical implications of things which are initially described in different languages, different theories. How to put anti-Darwinian approaches in biology and the thought of Darwin himself together, that has been a most interesting theoretical work for me, for instance. At first glance they are in conflict, but from a certain angle, they may both provide an important understanding. Whether or not one succeeds in it, that is another story. If you cannot make others understand what you have understood, your understanding is probably not yet very good. In my case, it is almost always like this. There might still be logical problems to be solved.

M: *I could perhaps mention your emphasis on Umberto Eco's work in your current research project, Biosemiotic Models of Semiosis. What's the latest news there?*

R & M: *(laugh)*

M: *Obviously, this is a meaningful enterprise — but, seriously.*

K: (*pauses*) What is the source of this question?

M: What do you mean, the source?

K: Where did you get this question?

M: *It's another process of integration, since biosemiotics and the work of Umberto Eco have usually been considered as separate enterprises.*

K: Yes.

M: *So, this could be another example of your attempt to integrate opposing stands.*

K: There are various ways to do this, but one way is via dialogue with Umberto Eco — to try to understand where the problems are, in a direct dialogue. It seems like there are less problems than what is usually thought. Eco's interests are very much in the direction of cognitive semiotics, which is also an important trend in biosemiotics. Is that an answer?

M: *Yes and no. It describes the necessity of a dialogue. But can you give us any element of a synthesis?*

K: In one of our discussions with Umberto Eco, we found out that he would accept semiosis on a cellular level if we could demonstrate to him that there exist relations in the cell which are not stereo-chemical. Some of his statements which have been interpreted as hostile to biosemiotics were in fact one-sidedly interpreted.

R: *Due to his ignorance of biosemiotic work?*

K: No. As a non-biologist, he simply does not know much about processes on a cellular level. Explaining this in detail, we can reach an agreement about the placement of the lower semiotic threshold. There is no real controversy between biosemiotics and his approach here, it is simply a matter of knowledge of the processes at that level. — Easy. No? Anything wrong? What is wrong with this explanation?

M: *You say that the differences are mainly due to differences in knowledge about different topic matters...*

K: Yes!

M: *But sometimes biosemioticians can have opinions about cultural semiotics. And a cultural semiotician like Umberto Eco can have opinions in biosemiotics — even without having specialized knowledge. So it is still open to discussion whether there are opposing or conflicting approaches.*

K: We should always distinguish between where we are professionals and where our statements are not based on the special knowledge of the field. This is what it is about. This is not the area where he can make many professional statements. But we cannot avoid making statements also about the fields where we are not professionals. That happens all the time. As Umberto said himself: "I am a professional in metaphors".

M: *That gives him a wide field. — Now you'll get a chance to answer Don [Favareau]'s question. I am not sure you will accept its premises. The question is:*

Since survival is impossible, what is the value of semiosis?

K: Very good question (*laughs*). The value of semiosis is *joy*. Joy. I could add to this that the value of semiosis is *meaning* – but I would not really use it in print, because everybody would connect it with a religious discourse. That's why I would say joy. Or, as for humans — loving living.

M: *Now you are explicating what the value of semiosis is, but I think that inherent in Don's question is also: How can it be that semiosis has value at all? Given that survival is impossible. And what do you think he means by stating that survival is impossible?*

K: It is impossible.

M: *In the long run?*

K: Yes – we will die anyway! The semiosphere will end.

M: *Do you have a prognosis? When will it end?*

K: It does not matter! It does not matter at all.

M: *Doesn't it matter whether life ends tomorrow or in a billion years?*

K: No, it does not.

M: *The value of the past doesn't depend on that – but it does matter, doesn't it?*

K: The value of the past is a whole different story. Survival is about the future. We have survived up to now, but the claim that survival is impossible is not about the past, but about the future. If it was about the past, survival would be possible, because we have survived a few billion years.

M: *But how can you say it doesn't matter whether life ends tomorrow or in a billion years?*

R: *And isn't it also a matter of ecological values?*

K: No. No. If we knew that something like this would happen in a matter of days, then the situation would be different, of course. But you see – this is easy to explain using the example of one's own life, as a person. What I say here and now will not be any different whether I happen to die in an hour, or years from now. It makes no difference!

M: *I cannot comprehend what it means that it doesn't matter. To whom?*

K: It does not make a difference for what I say, for what I do, for what choices I make.

R: *That's a very Buddhist thought – that you never know...*

M: *Yes, I thought about Buddhism now also.*

K: No, not exactly. You know, this is what misleads humankind — our perception of time. It is one of the most misleading things. But this would lead us to a longer talk. My answer to Don's question was brief: Meaning, or joy of life.

R: *But wouldn't the value of anything be joy, then? Or is it just the property of semiosis?*

K: What exactly are you asking?

M: *Semiosis is joy in the plural.*

K: No, no — semiosis is life. And this was a question about life. So they are the same. There cannot be value outside of semiosis, that is true.

M: *Does this mean that semiotics is the proper domain of ethics?*

K: (*pauses*) Ha!

***

At the occasion of this interview, as mentioned above, we invited some of Kalevi's biosemiotic colleagues to contribute. The contributions of Timo Maran and Donald Favareau have already been referred to. A late-comer, Paul Cobley of London Metropolitan University, wrote the following:

> Your use of Vihalemm's distinction between $\sum$-sciences and Φ-sciences[4] [cf. Vihalemm 2007, and Kull 2009] to demonstrate that the study of life forms is the study of *knowing* may yet prove to be the most enduring contribution of biosemiotics. Based on qualitative methods which investigate the process of knowing rather than identifying pre-established categories, what might an empirical biosemiotics look like?

"In the question," replied Kalevi, "it might be good to write 'sigma-science' and 'phi-science', instead of always using the Greek letters". The substance of his initial reply sounds like this:

> Empirical biosemiotics requires operational concepts. Operationally defined typology of non-linguistic signs — together with a whole set of biosemiotic concepts — is what has to be developed in a practical research that includes both theoretical and empirical work. Once having these tools, a

[4] "More precisely, in philosophy of science, Rein Vihalemm (2007) has pointed to a different role that the historical explanation has in the major types of sciences, and on this basis he has made a distinction between *Φ*-sciences and non-*Φ*-sciences, the latter called also *Σ*-sciences. *Φ*-sciences do not require historical explanation, they model the world using universal laws and depend on quantitative methods; *Σ*-sciences, instead, are dependent on historical explanations, they model the world on qualitative basis and use primarily qualitative methods" (Kull 2009: 84).

> biosemiotician can turn into a translator — making professional translations from the sign systems of other species into the human languages. This is a real challenge, since these sign systems are so very different from human ones. But this is the way to understand other species.

Paul Cobley then communicated a follow-up question:

> Nonverbal communication does not have a grammar (apart from systematized sign languages such as ASL). As far as we understand, non-human nonverbal communication has a very limited repertoire per species and nothing that corresponds to syntax in humans. The repertoire of nonverbality — i.e. the amount of nonverbal communication that takes place when one adds all the species-specific communication together — is, of course, huge. The task of an empirical biosemiotics is not so much to develop a "typology of non-linguistic signs" — although this may be a helpful preliminary — but to understand the unitary or multifarious ways in which nonverbal signs operate in the process of species-specific knowing (for example, not just determining how one or more nonverbal signs amounts to a message but also whether one or more nonverbal signs amounts to more than one message on different occasions and in different circumstances. This would be, precisely, qualitative research). How might biosemiotics carry this out?

To which Kalevi replies:

> Yes, correct. But obviously the tasks and opportunities of biosemiotics are much richer than that. We are going to study how the non-verbal knowing operates. We need to understand the workings of non-verbal umwelt — a purely non-symbolic, non-narrative, yet iconic and indexical umwelt. These semiosic non-symbolic bonds may be even stronger, more powerful and overwhelming, more fundamental than the cultural or linguistic unities. (Everybody has experienced it as the power of one's needs and emotions over the worded aims). The major task of our empirical, qualitative work is to build the descriptions of non-human umwelten, and to grasp the processes which keep them at work.
>
> Let me add here a couple of quotations. First, this is Marcel Danesi's formulation of Tom Sebeok's possible answer to a similar question: "Ultimately, as the late Thomas A. Sebeok — a primary figure in the biosemiotic movement — emphasized, the objective is to distill common elements of semiosis from its manifestations across species, integrating them into a taxonomy of notions, principles, and procedures for understanding this phenomenon in its globality" (Danesi 2010: 87).
>
> And second, Thure Uexküll's description of Jakob Uexküll's take on the same problem (from the paragraph "The Complex Level of Combined Sign Processes"):
>
> > The signs of the elementary level are organized in the perceptual organ of the brain to perceptual cues. These resulting complex signs replenish our umwelt in the form of objects and processes and have the purpose of orientation signs for our behavior, just as navigational aids have for the

> orientation of seamen.
> The bands that join the elementary signs to the clearly delineated objects and processes, "which we see everywhere around us and the unity of which we perceive without any doubt about it" (J. v. Uexküll 1973: 116), are not at all static memory-images. Instead, the process of image formation itself is repeated and the sequence of impulses for our muscles (for example, when we follow the contours of an object with our eyes or with the hand) is thereby compared with programs of impulses that are stored in our memories. With reference to Kant, Uexküll calls these programs *Schemata*.
> So the term *schema* is used to describe construction rules for complex signs out of elementary signs, similar to the rules of language that control the construction of words out of sounds. (T. v. Uexküll 2010: 1150)

Thus, let's go to work!
:-)

***

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The interview was conducted by Riin Magnus and Morten Tønnessen