

## Eye witnessing Jakob von Uexküll's Umwelttheory

*Thure von Uexküll*<sup>1</sup>

For people interested in the work and the theory of Jakob von Uexküll it may be charming to learn, how I have experienced his way of observing nature when I was a child and also to hear which consequences have arisen from this for me in my profession as a doctor.

I remember that when I was about six years old and we spent a time in the countryside my father asked us: "What does the world look like for the earthworm? The earthworm doesn't have any ears. He can hear nothing. He doesn't have any eyes either and can see nothing. He nevertheless finds the way in the nature surrounding him".

At that time fairytales about animals and their world, like the book by Bonsel about the Bee Maja,<sup>2</sup> were popular. Instead of relying on these books, my father suggested to go into the garden and to watch earthworms orienting themselves in the surrounding nature.

In the garden he showed us, how earthworms grasp leaves — their food — at their tip and pull them into their holes. In order to do this, earthworms must be able to distinguish the taste of the tips from that of the leaves basis; because the basis would block the attempt to draw the leave into the hole. Experiments with leaves cut into pieces have proved that

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<sup>1</sup> This article, "Jakob von Uexküll's Umwelt-Theorie miterlebt" (read at the International symposium Signs and The design of Life — Uexküll Significance Today, Jan. 9, 2004, in the University of Hamburg), has been accompanied by the following letter (dated Freiburg, 1st January 2004): "Dear Mr. Rütting, I am sorry to tell you that the condition of my health has not improved as I had hoped it would in order to be able to stand the stress of a journey. So to my dismay I have to give up my plan to come to your celebration in Hamburg. As a substitute for my personal talk I send to you the following small sketch about my father and the significance of his theory for medicine. With my best regards, Yours Thure von Uexküll." The article is translated by Torsten Rütting.

<sup>2</sup> Bonsel, Waldemar [1912], *Die Biene Maja und ihre Abenteuer*.

earthworms do indeed orientate themselves this way. The world of the earthworm is the world of a gourmet.

This observation gives us an answer to the central question of biology about the relation of living organisms to the surrounding world: Living systems are not related to their Umwelt by causes and effects in a causal-mechanical way, but connected by signs that have meaning for them. Instead of by the two parameters ‘cause’ and ‘effect’, this relation can only be described by three parameters: by ‘signs’ which are grasped by the organism and which designate certain phenomena as ‘objects’, and as the third parameter the ‘interpretant’ which creates the relation of meaning between ‘sign’ and ‘object’ — and — which controls the appropriateness [*Zutreffen*] of this relation.

Jakob von Uexküll recognized that this act of relating is a circular event for which he invented the formula “function circle”, which is described as a ‘cybernetic model’ today. In this function circle a ‘noticing sign’ [*Merkzeichen*] induces a behaviour which sets a ‘working sign’ [*Wirkzeichen*]. If the meaning is appropriate, the effect sign deletes the noticing sign — and with that the experience ends (the circle is closed and a new cycle starts).

Epistemologically this is of a threefold meaning:

(1) Living beings do not discover their Umwelten. They have to construct it out of the signs found. Philosophically this position and its consequences have been described by ‘constructivism’.

(2) Living beings are not related to the surrounding world mechanically by ‘effects’ and ‘causes’. They grasp “signs” and interpret them due to the meaning these signs have for them. Philosophically this leads us to the teaching of the signs, to semiotics.

(3) Constructivism and semiotics presuppose the concept of “system”, the concept of the ordered whole, in which the parts have a significance for the whole and for each other. System theory is therefore the third limb of a biological description of nature.

The significance of these insights for medicine reveals itself at medicine’s psycho-physical problem or — in other words — in the difficulty of having to relate either to soulless bodies in physiology or to bodiless souls in psychology, but never to inspired bodies.

This deficiency can only be overcome by completing the indispensable mechanistic view on the sick person’s body and organs — by a view that is interested in the ‘reality’ in which the patient lives himself. This complement is also the prerequisite for communicating with the sick person which fails without the construction of a common reality.

The significance of these considerations shows up in the dangerous fact that in the context of modern rationalising efforts and related pressure for economical measures, medicine stops to be “humane medicine”. “DRG” (diagnostic related groups) and “DMP” (disease management programs) can just as well be introduced to veterinary medicine.