BASICS OF COGNITIVE SEMIOTICS

01 INTRODUCTION AND ANTECEDENTS

FIRST THINGS FIRST

What do we mean by Cognitive Semiotics?

In very general terms, we mean it as an umbrella term for the integration of semiotics, phenomenology, philosophy of mind and cognitive science. The main point of reference, however, will remain in the semiotic side of the equation.

How will we treat the subject during this course?

Given the previous statement, we will work our way through semiotics in order to make sense of why and how we can integrate the phenomenal to semiotics from a biosemiotic point of view.

PRACTICAL MATTERS

- Format
- Readings
- Participation
- Evaluation



PRACTICAL MATTERS cont.

MODULES:

- I. Antecedents: Some basics of semiotics (Uexküll, Lotman, Sebeok); Phenomenology.
- II. Naturalization of semiotics: Biosemiotics and semiotic science.
- Mental phenomena and semiotics: The evolution of culture and meaning in humans.
- IV. Cognitive Semiotics proper: Development of interdisciplinary semiotics.

COGNITIVE SEMIOTICS, an overview

- Cognitive semiotics is a "transdisciplinary study of meaning." (Zlatev 2012: 2)
- Not a specific form of semiotics, but an acceptance of *some* of its parts and following in its footsteps.
- By integrating cognitive science, phenomenology and semiotics, a more pluralistic ontology is to be expected.
- ▶ It studies meaning in human experience, culture and development.

LAYING THE GROUNDWORK

What is semiotic about cognitive semiotics?

Given the non-denominational character of cognitive semiotics, this may be a problematic question!

What is cognitive about cognitive semiotics?

Most semiotics could qualify as 'cognitive,' so what's so special about cognitive semiotics?

JAKOB VON UEXKÜLL: an introduction

Who is Jakob von Uexküll?

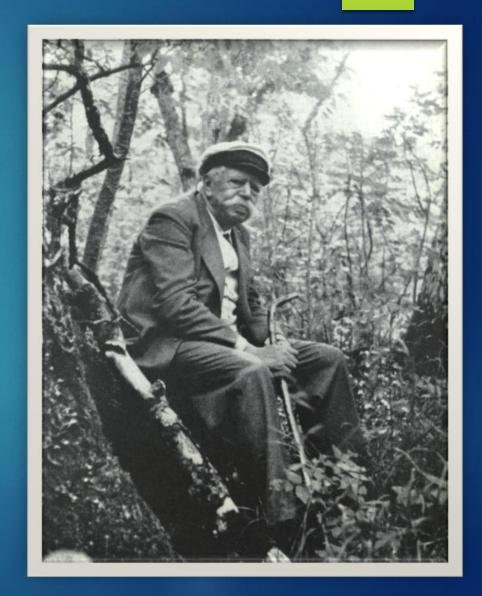
1864-1944

Baltic German biologist

Born in Lääne County, West Estonia

Educated in biology, interested in philosophy

Kantian and non-Darwinist



BACKGROUND

- Ethnically German, JvU was born in Estonia under Russian rule.
- His last name can be traced to Ikšķile, Latvia, a Livonian-origin name that can be translated to "a village" (üks külla, in Estonian).
- Educated in natural sciences at the University of Tartu (Dorpat back then), Estonia.
- His philosophical background and beliefs are Kantian.
- Anti-Darwinism does not imply anti-evolutionism, but there are some caveats.

"WHEN A DOG RUNS, IT MOVES ITS LEGS. WHEN A SEA URCHIN RUNS, IT IS MOVED BY ITS LEGS."

-- Jakob von Uexküll, cited by Otto Cohnheim

CONCEPTUAL BACKDROP

- ▶ We'll go back to that, but for now, let's lay down the conceptual backdrop:
- Uexküll's Kantianism As regards the subjective experience of living creatures, "it is utterly
 in vain to go seeking in the world for causes that are independent of the subject; we always
 come up against objects which owe their construction to the subject." (xv)

"The task of biology consists in expanding in two directions the results of Kant's investigations:—(1) by considering the part played by our body, and especially by our sense-organs and central nervous systems, and (2) by studying the relations of other subjects (animals) to objects" (xv)

Ooooh.

Kant's Transcendental Idealism:

Space and time are features of perception, not actual, mind-independent things.

Appearances/Things in themselves: "an object is 'outside me' when its existence does not depend (even partly) on my representations of it."



Phenomena and noumena:

We can't "cognize objects beyond the bounds of possible experience." (Stang)

Phenomena: "appearances to the extent that as objects they are thought in accordance with the unity of the categories." (A249)

Noumena: "things that are merely objects of the understanding and that, nevertheless, can be given to an intuition, although not to sensible intuition." (A249)



Uexküll's anti-Darwinism:

The once hot dispute between evolutionism and vitalism seems out of touch with our current understanding of biology, but this is a controversy that shaped Lexküll's thought.

In principle, vitalism refers to the idea that living things have something special beyond its physical constituents.

However, the influence of vitalismin Lexküll did not mean he rejected evolution, but rather, that he rejected absolute mechanicism

Teleology plays a fundamental role here: Directedness towards something with that explicit intention. This seems *irreconcilable* with the randomness associated to Darwinian evolution.

WHY UEXKÜLL FOR COGSEM

- For starters, why does semiotic in general care for Uexküll's work?
- What's the point of biosemiotics?
- What's the connection?

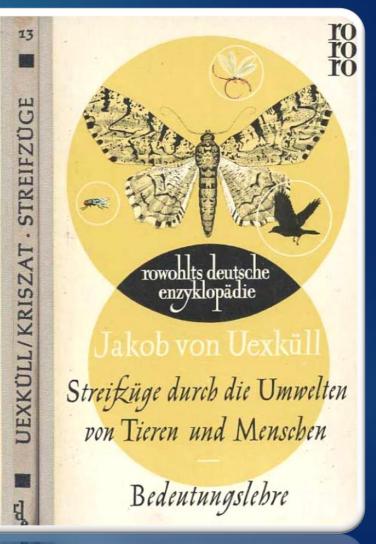
We'll return to these questions!

A STROLL...

- 1934 (but reissued and translated a bunch of times).
- A more general introduction to his ideas for a theoretical biology.
- What's the central point of this work?

rowohlts deutsche enzyklopädie

will im Rahmen einer Taschenbuchreihe jedem geistig Interessierten alle Gebiete der Wissenschaft durch ihre angesehensten Vertreter erschließen. In rascher Erscheinungsfolge wird sie über das jeweils Neueste an Forschung und Erkenntnis unterrichten. Sie strebt ein sinnvolles Gebäude menschlichen Denkens an und begnügt sich nicht mit der zufälligen Aneinanderreihung einzelner Essays. Ein ausführliches (Enzyklopädisches Stichwort) führt den Leser in den Problemkreis ein, dem das behandelte Thema entstammt. Jedem Band ist eine Biographie des Autors sowie ein Verzeichnis der einschlägigen Quellen- und Standardwerke zur selbständigen Weiterarbeit beigegeben. Alle Veröffentlichungen der Reihe enthalten Namen- und Sachregister, die nach je fünfundzwanzig Bänden zu einem besonderen Gesamtregisterband vereint werden, um das in den einzelnen Beiträgen vermittelte Wissen lexikalisch zusammenzufassen. Er wird den Abonnenten der Reihe zu einem Vorzugspreis zur Verfügung stehen.



ANIMALS, THEIR PLACE, THEIR WORLD

- So, part of the point lies in that Uexküll wants to theorize about how animals perceive the world and interact with them.
- This type of ethology is based on a philosophical understanding of what the environment is supposed to be for organisms in it. (How?!)
- It aims at being scientific while also proposing novel views on animal cognition.

THE FUNCTIONAL CYCLE

The functional cycle according to both of the translations to English.

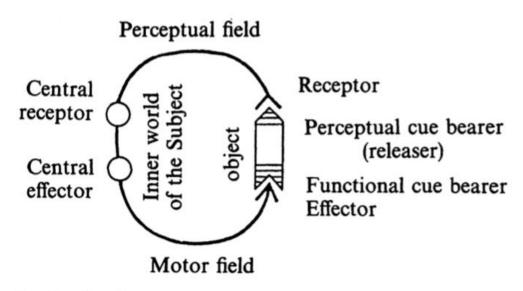
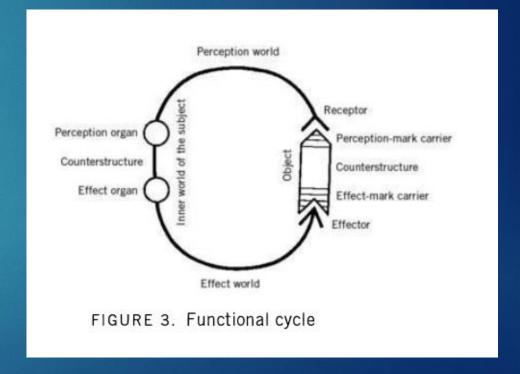


Figure 3. Functional cycle

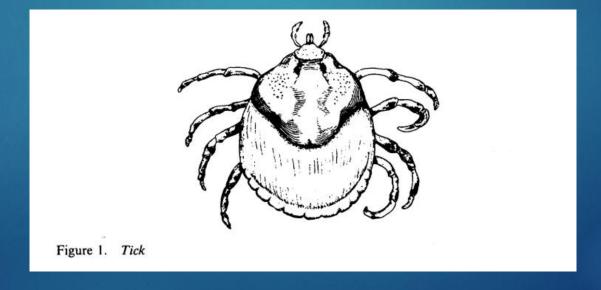


EXPLAINING THE FUNCTIONAL CYCLE

- ▶ It shows the relation between perception and action created by the *Umwelt* of an organism (we'll come back to that as well).
- Inner world of the subject
- Perception and effect organs (central receptor and central effector)
- These are related to the perception world (perceptual field)
- Where the counterstructure produces a perceptual sign (perception mark/perceptual cue) carrier
- Which ends at the effect sign (effect mark carrier/functional cue) effector
- On the side of the effect world (motor field)

UMWELT

- ► The functional cycle is intertwined with the concept of Umwelt.
- Simply put, the Umwelt is the environment of an organism.
- What the functional cycle does is explaining behavior retroactively, it models perception and action as linked together.
- ► Let's remember the example of the tick:



WORLDS AS EXPERIENCED

- How do we go beyond the mechanistic description of the action of an animal?
- According to Uexküll, the story does not end at a stimulus reaction, but rather we have to ask why exactly the organism is only able to access a specific number of cues as significant in their world.





FIGURE 11. a. Photograph of a village street b. Village street photographed through a screen



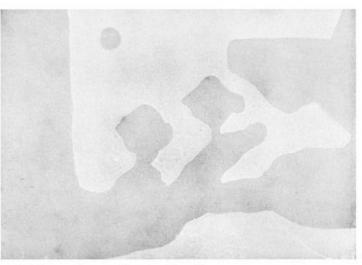


FIGURE 11. c. The same village street for a fly's eye
d. Village street for a mollusk's eye

THE RELEVANCE OF MEANING

- What is the place of meaning in all this?
- The Umwelt gathers perception and action together in one unit of analysis.
- The things in the environment that matter to the organism are *part* of its environment. The interaction of the organism with the elements in its environment is meaningful insofar as it is based on relevance, not randomness.
- Following that, an Umwelt is organismdependent in its complexity, while also being niche-dependent.
- Intentionality!

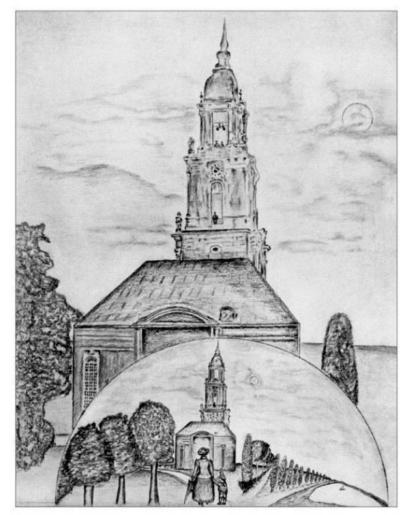


FIGURE 12. The farthest plane of an adult (below) and a child (above)

BAUPLAN

- More enigmatic and controversial, Uexküll thought that the objects of biology were ruled by natural plans, construction plans that made each part of the organism make sense in its context.
- ► This idea thoroughly reflects his anti-Darwinism: "Where Uexküll deals with the origin and differences between animal species, he limits himself to attributing them to the general teleology of nature and its 'active factors,' the *Baupläne* or plans for construction (which also perform the task of keeping the mutual relationship among species in harmony). (Brentary 2009: 646—647)

"WHEN A DOG RUNS, IT MOVES ITS LEGS. WHEN A SEA URCHIN RUNS, IT IS MOVED BY ITS LEGS."

https://www.youtube.com/watch?v=PlsxpTXHKVo

Sea Urchin

https://www.youtube.com/watch?v=UXduJ9w0UMw

Dog

ONCE AGAIN: WHY UEXKÜLL FOR COGSEM

- ▶ Why does semiotic in general care for Uexküll's work?
- What's the point of biosemiotics?
- What does Uexküll tell us about animal perception?

RELEVANCE OF UEXKÜLL'S WORK

- ► The Umwelt works as an analytical tool to make sense of organismic environments, at least conceptually. It's become a technical term for semiotics in this respect.
- We do not actually need to accept the expensive metaphysical commitments to idealism made by Uexküll to see the usefulness of the concept.
- Embodied cognition has made use of his theories in this sense to some degree of success: If cognition is not only considered as something that happens inside of a subject, but as a correspondence and relation between subject and environment, we are already in the realm of Uexküllian thought.

- There may be practical applications in AI (Ziemke and Sharkey 2001), ecological psychology (Järvilehto 2009) and obviously biosemiotics.
- ► How viable could that be?

UP NEXT

Semiotics and phenomenology, the development of semiotic systems that investigate human and animal experience and perception.

Lotman

Sebeok

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