Integrative evolutionary Communication – towards a *Cybersemiotic* foundation of *Functional Discourse Grammar*

Søren Brier (*sb.ikk@cbs.dk* and *uk.cbs.dk/staff/soeren_brier* where you find free papers) & Ole Nedergaard Thomsen (*one.ikk@cbs.dk*), Depart. of International Culture and Communication Studies, CBS.

**Part 1: Cybersemiotics** (Brier & Nedergaard Thomsen)

**Part 2 (next session): Towards a Cybersemiotic Discourse Pragmatics** (Nedergaard Thomsen & Brier).
Cybersemiotics
A transdisciplinary paradigm integrating second order cybernetics and Peircean semiotics

Søren Brier
Professor in the semiotics of information, cognition and communication, CBS.
Ed. Cybernetics & Human Knowing
Søren Brier

*Cybersemiotics: Why Information is not Enough*,

Toronto University Press 2008. Also a Google book

A transdisciplinary philosophy and sociology of science study integrating ethology and Peircean biosemiotics with second order cybernetics and system science (Luhmann) and embodied Cognitive linguistics.
The semiotic functional grammar connection

- As opposed to a generative view of grammar as a universal code, the object of investigation of (functional) linguistics and semiotics should be the ‘natural language users’ in semiotic social interaction.

- The grammatical component has therefore to be integrated into the model of a natural language user as a ‘functional discourse pragmatics’.

- Linguistic communication is primarily cognitive and communicative embodied meaningful action and interaction where language is only one of the instrumental resources.
Functional Discourse Grammar and Peircean semiotics

- Functional mimics, body postures, and gestures driven by instinctual as well as embodied motivation and semiotic coordinated interaction form the ground layer on which language communication is built.

- Natural languages are unique through their grammars. But the grammars are not creating the meaning of communication per se.

- The hypothesis is that Peircean semiotics can be integrated with the current linguistic model of Functional Discourse Grammar through a Peircean biosemiotics that is pragmatic and functional.

- The goal is an integrated verbal and non-verbal, multimodal semiotic model performing productive and receptive discourse acts of total, integrative communication.
The language and communication link

- Evolutionarily viewed, communication was before language and cognition.
- Cognition was before communication (Sebeok’s modeling system).
- Communication and cognition were embodied before they became conscious, as we see it in social animals like bees and ants.
- Functional mimics, body postures, smell, touch, taste, sounds and gestures driven by instinctual motivation makes up a semiotic level.
- Under that is a level of quasi-semiotic level of pure embodied reflex-interaction with the environment and with other members of the species, based on a cybernetically informational level of differences.

But what are the connections between layers and from where do meaning arise? Top or bottom, nature or culture or both?
Hierarchy of sciences and arts

- Humanities
- Social sciences
- Psychological "sciences"
- Biological sciences
- Chemical sciences
- Physical sciences

View on the foundation of information/signification

- Semiotical view
- Informational view
The Mentalese Model of Explanation

- Jerry Fodor (1975) is the most prominent scholar among those who argue that words are instruments by means of which we express ideas, which we have before they are verbally expressed.

- In other words, the “language” of thought is not the language in which we express our thoughts, but something more fundamental and universal.

- Fodor postulates a universal language of thought, which he calls _Mentalese_, which differs from the language of public speech, by means of which it is expressed in an individual language, such as English, French, or Chinese.

- W. Nöth: “Signs, tools, and intelligent machines”, Cybernetics & Human Knowing, 16:3-4.
Self-consistent constructivism

“...The task of constructivism is to describe a system's operation within its own domain of description and account for the constitution of its identity and the conditions of its continued persistence in its own terms. ... constructivists need to find a way of putting the knower into a known that is constructed so as to keep the knower viable in practice.”

(Klaus Krippendorff 1991)
The phenomenological view

- Actually there is even a position that considers itself as more fundamental than any social or natural scientific foundation; namely phenomenology. It is also the base of C.S. Peirce’s semiotics, but in a slightly different evolutionary semiotic formulation than the Europeans.

- Both Husserl, Heidegger and Merleau-Ponty tells us that consciousness is the self-generated core of our life-worlds, which are before anything that wissenshaft can define.
The phenomenological stance

“Science has not and never will have, by its nature, the same significance qua form of being as the world which we perceive, for the simple reason that it is a rationale or explanation of that world. I am, not a ‘living creature’ nor even a ‘man’, nor again even ‘a consciousness’ endowed with all the characteristics which zoology, social anatomy or inductive psychology recognize in these various products of the natural or historical process – I am the absolute source, my existence does not stem from my antecedents, from my physical and social environment; instead it moves out towards them and sustains them, for I alone bring into being for myself ...the tradition which I elect to carry on,”

(Merleau-Ponty. The phenomenology of perception (1966) p. ix)
The view from the middle!


- The grand materialistic-informational narrative takes us from view 1 to 4 in one story using the problematic concept of emergence to describe the qualitative jumps between the four.

- If we leave this logical positivistic unity of science approach and accept the qualitatively differences between the approaches instead and accept to encompass them all four at the same time developing knowledge from the middle of intersubjective embodied communicative and empirical discursive knowledge.
Living embodiment

The other, language

Life/Living Systems

Inner Life/Consciousness

Organic Evolution

Existential Development

Big Bang Cosmology

History of Culture

Matter/Energy

Sense/Meaning

The Cybersemiotic Star

Language

Inner mental world

Physical nature

The other, language

Social Semiotic Practise

Warzawa 2010
The body’s brain as observer

- How did the body’s brain come to experience anything at all?

- Very few scientists think that a robot can ever experience anything.

- Experiential life itself is the basis for the observing and communication that makes scientific research possible. Second order observation.
The observer and second order cybernetics

“I have the theory of observing, I am myself an observer, so I am doing the observing,

I am including myself into the loop of argumentation. And in which way can I handle that?

... a serious attempt was made to cope with the epistemological and the methodological Grundlagen propositions that appear if you begin seriously to include the observer in the descriptions of his observations.

With ... Maturana’s autopoietic system ... we can start here with a biological theory of autonomy, because if we do not stipulate autonomy, observation is not an act of interaction or something like that, observation would just be a transducer kind of an idea, the concept of observation will not appear, only the concept of a transducer, a recorder" (von Foerster, 1981, p. 104)
AUTOPOIETIC EPISTEMOLOGY
In Jacob von Uexküll’s cybernetic cognitive biology like in autopoiesis the perceptual object is created interactively.

_Uexküll’s functional circle_ that demonstrates his semiotic concept of objects in a cybernetic recursive process between receptors and effectors. Biosemiotics has interpreted Uexküll from a Peircean semiotics!
Luhmann’s triple AUTOPOIESIS

- Biological Auto-POIESIS
- Psychological Auto-POIESIS
- Socio-Communicative Auto-POIESIS

Inter-penetration

Individual Signification Sphere

Games
Mutual structural couplings are the basis for the ability of communication to establish interpenetration and interpretation actualizing a common reality.
A sign is what an object presupposes!

- Peircean semiotics develops a general theory of all possible kinds of signs, their modes of signification and information, and whole behavior and properties.

- Semiotics is the study of semiosis and is an inquiry into the conditions, which are necessary in order for representations of objects to function as meaningful signs. A system need to be living in order to produce intentional signs. A biosemiotics is developed.

- Differences that makes a difference becomes part of semiosis. They are seen as signs! If not they are not seen at all.

- Semiotics is the theory of the conditions, which determine the truth of signs. Logic presupposes semiotics!
Peirce’s semiosis

1. Representamen (the sign vehicle)

2. Object (a relevant aspect of reality)

3. Interpretant (embodied social practical understanding)
Peirce’s semiotics as epistemology

1. Peirce’s theory of signs can be seen as a theory of reasoning and cognition, asserting that all modes of thinking depend on the use of signs.

2. Every thought is a sign.

3. Every act of reasoning consists of the interpretation of signs.

4. Semiosis is a process of cooperation between signs, their objects, and their ‘interpretants’.

5. Semiosis, both in form of signification and communication, is an important part of what makes living systems transcend pure physical, chemical and even informational explanations.

6. Signs, in the process of semiosis, are semiotic agents with a certain developmental autonomy of their own.
The evolutionary epistemology

- Perception is biologically, psychologically and social-cultural structurally coupled at the same time in order to make the observing system survive and procreate!

- Peirce says that is why we are so good at guessing the habits of nature and make true classification (universals).

- Ultimately ontology is indeterministic evolutionary (chaos with a tendency to take habits) with triadic emergences as sign out of nothing-ness.
The difference between the signs of animals and those of human language is that the former are genetically replicated, whereas the latter are replicated by learning, that is, in the form of sign tokens (re)produced from some earlier token or tokens of its type that the speaker has heard.

In the long process of their replication, cultural signs never lose their character of being also natural signs.

Like the nonverbal signs of animals, words and sentence patterns survive as sign types by being reproduced in the form of their tokens.

All cultural signs have their own “reasons for survival”
Iconicity

Onemato poetica
Body image
Metaphors

Sign games
Ritualization
Symbolization

Semiotic phaneroscopic motivation

embodiment and autopoiesis

Categorization

conceputal signification

Animals

Prey or Mate?

IRM

instinctive cognition & behavior

Humans

Bachelor?

IRM = innate release mechanism (Lorenz) & ICM = idealized cognitive mechanism (Lakoff)

Sign Stimuli

Stimuli

Language games

Conceptual signification

IRM

IRM= innate release mechanism (Lorenz) & ICM= idealized cognitive mechanism (Lakoff)

Animals

Humans

Bachelor?

Prey or Mate?

IRM

instinctive cognition & behavior

(IRM= innate release mechanism (Lorenz) & ICM= idealized cognitive mechanism (Lakoff))
Embodiment

Physical nature

The other & language

Inner mental world,

Social Semiotic Practise

Life/Living Systems

Matter/Energy

Organic Evolution

Big Bang Cosmology

Existential Development

History of Culture

Sense/meaning
INTERNAL SEMIOSIS

THOUGHT SEMIOTICS

ENDO-SEMIOTICS

PHENO-SEMIOTICS

SOCIO-COMMUNICATIVE AUTOPOIETIC LANGUAGE GAMES
ECOSEMIOTICS

Socio-communicative autopoietic language games

Individual signification sphere

Conceptual signification

Instinctual signification

Structural couplings

Environment
EXOSEMIOTICS

SOCIO-COMMUNICATIVE AUTOPOIETIC LANGUAGE GAMES

SIGN GAMES

Information through Structural couplings