
What does it take to produce an interpretant?

Søren Brier

**Professor in the Semiotics of information, Cognition and
Communication**

**Institute of International Culture and Communication
Studies**

**Background in ethology, information theory and science,
interdisciplinary philosophy of science and philosophy**

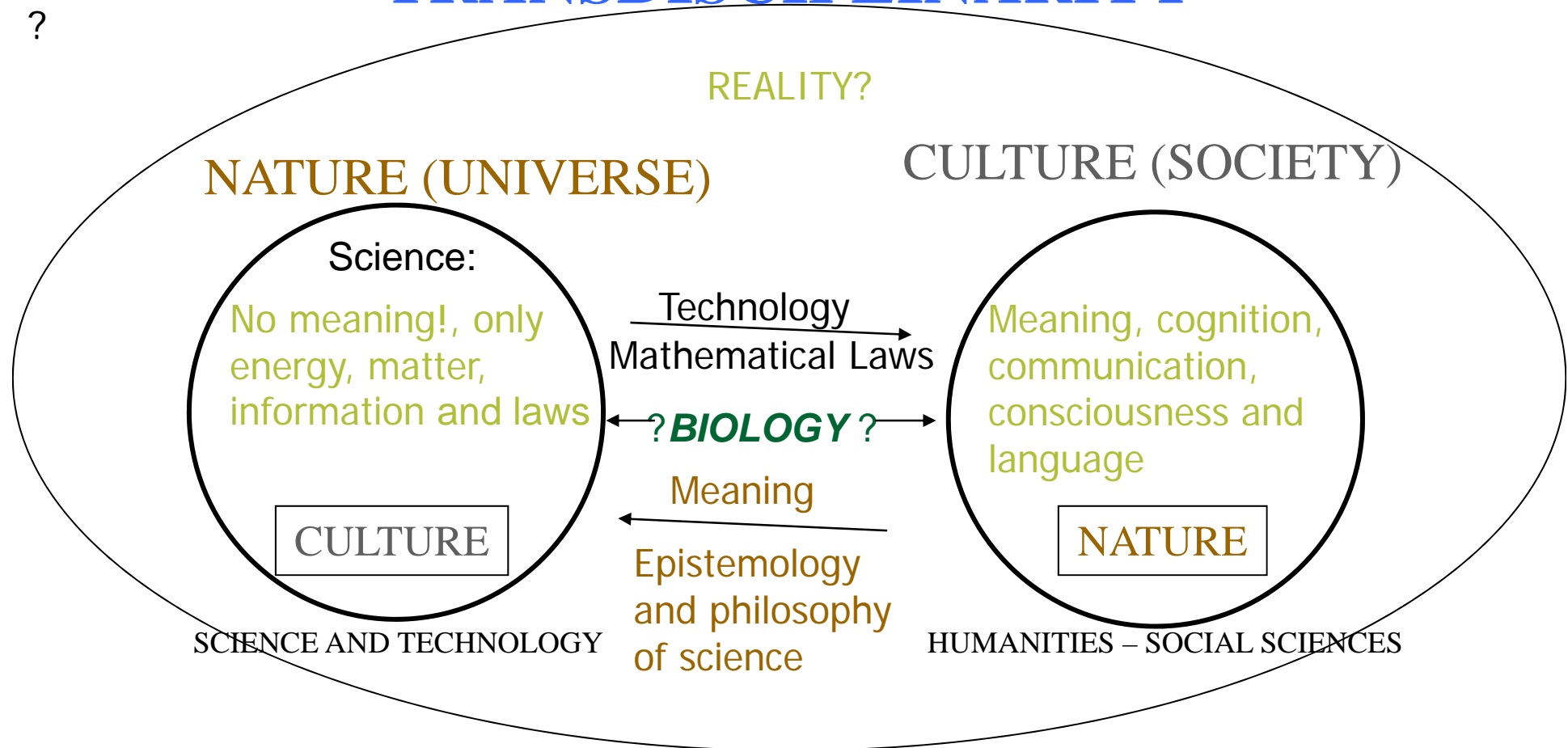
Copenhagen Business School

Code semiotics versus sign semiotics!

- A new paradigm, by the name of Code-semiotics, has been proposed from the level of the free-living cells up to brain level leading up to conscious embodied psyches.
- The code model develops **a non-Peircean functionalistic process concept of meaning** avoiding the concept of interpretation at cellular level and in all systems that do not build representations of the world through a nervous systems producing awareness and intentionality.
- I am going to compare critical this paradigm against a Peircean biosemiotics because it has so many interesting things to say and wants to stay clear of Peircean foundations to stay “scientific”. But what does mean? Kalevi Kull asks: **What kind of Wissenschaft is biosemiotics?**
- It deals with problems that I started to research on in 1978 in studying the cognitive models behind ethology (Lorenz, Maturana, Sebeok):
- The role of experience and feeling and their connection with meaning.

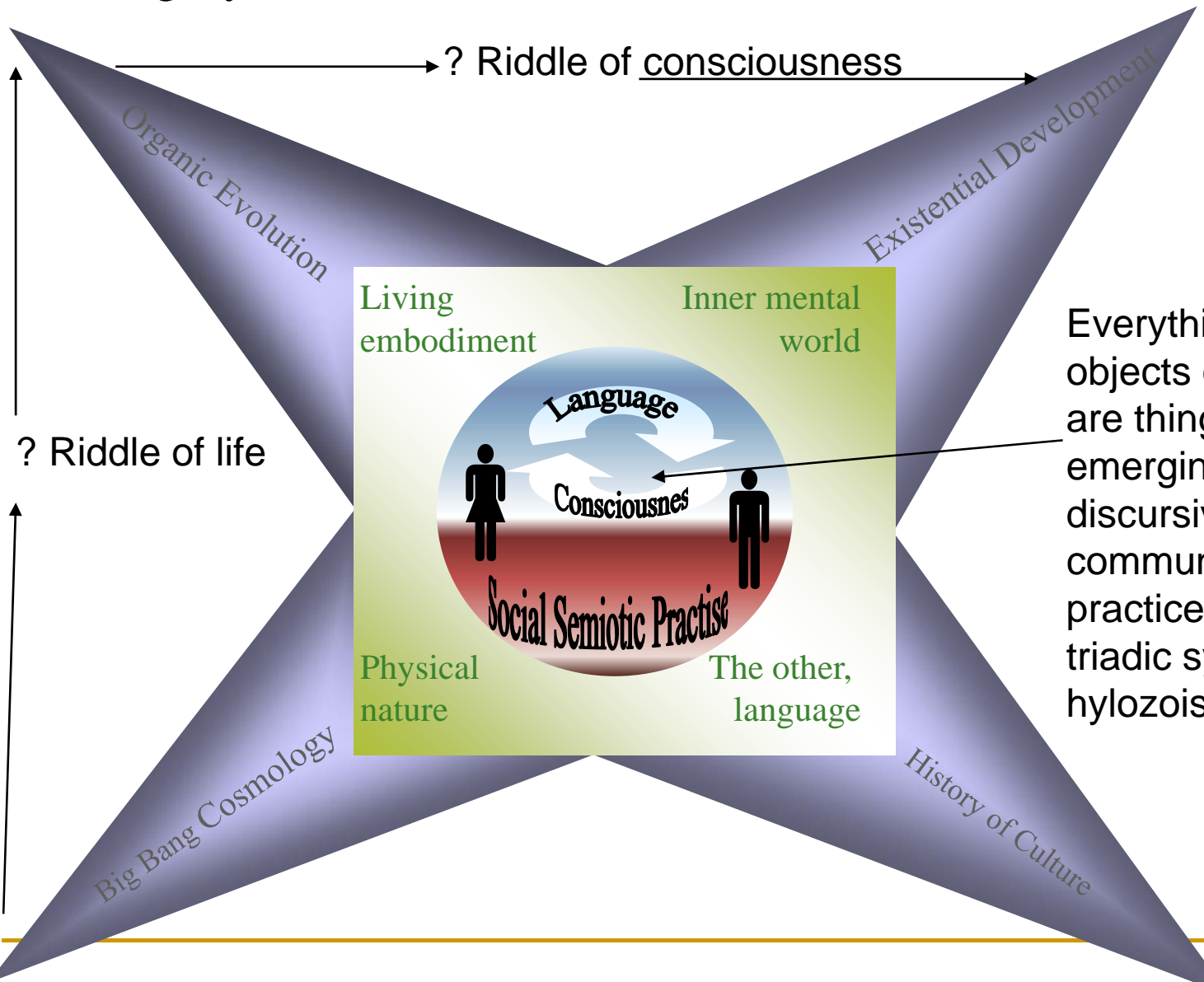
THE BASIC PROBLEM OF TRANSDISCIPLINARITY

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If we want by evolution to get out of dualism and into monism we seem bound to chose either a materialism, a pan-information-computationalism or a individual and social constructivism. Biology has the task to make theoretical models of life as well as consciousness and make these model fit with concepts of mind and matter.

Life/Living Systems **The Cybersemiotic Star** Inner Life/Consciousness



Matter/Energy

A shift of perspective

Sense/Meaning

The code-semiotic conceptual model

- **The Code model states that the necessary and sufficient condition for something to be a semiotic process is that A provides a conventional association between B and C, where A is a set of adaptors and B and C are the objects of two independent worlds, such as DNA and proteins.**
- **Thus a semiotic system is a triadic relation based on a code, which is produced by the same **codemaker**.**
- **Codes work in delimited environments in opposition to universal natural laws.**

The codemaker's nature and role

- According to that model, **the first semiotic system** in the history of life was the apparatus of protein synthesis (the ribotype). The interplay between DNA, RNA, enzymes and aminoacids does not need interpretation as the rules of the genetic code are virtually the same in all living systems!
- **A semiotic system is here defined as a triadic set of processes and objects linked by a code.**
- **But it is not triadic in the Peircean sense as the metaphysics does not entail his three categories plus synechism and hylozoism!!**

The codemaker creates new worlds

- Code-signs' conventions do not come into existence of by themselves.
- There is always an “agent” that produces them, and that agent can be referred to as a “codemaker”, because it is always an act of coding that gives origin to semiosis.
- The first codemakers created a world of proteins that could not exist without a genetic code!
- The connection only exist in the context of the cell.
- Living cells are build out of proteins that in a certain way are artificial.
- Through the coding process amino acids are combined inside the cell in ways that never happen outside the cell.
- **Living systems are then not natural but artificial! New idea!**
- **The coding creates new molecules that are special for cells and ~~creates the material basis for the living processes~~**

Code semiosis is before sign semiosis

- **Semiosis appeared therefore at the origin of life, whereas interpretation and mind came much later.**
- The Code model starts with a definition of semiosis that does not depend on mind, and describes an evolution of semiosis that eventually gave origin to mind and interpretation.
- **The emergence of mind was associated with the origin of a third type of semiosis which is called interpretive semiosis (like the Peircean, but it is not, as it does not build on the categories and hylozoism, tychism, synecism and agapism) Is the ontology then an informational and computational or systemic one??**
- Interpretation is regarded as a process that depends primarily on representations, memory and learning, and its origin is linked to the origin of perceptions, feelings, consciousness and qualia.

A subject in an interpreter, not an interpretant

- In the first animals, **the connections between sensory inputs and motor outputs were probably simple nerve-reflex arches**, but these could not evolve much because complex hard-wired circuits were necessarily slow and cumbersome.
 - The animals had to “invent” a new solution of **signal-processing**, and the only way was **the manufacturing of new objects by a new code**.
 - This was possible because the neurons of the intermediate brain are natural “adaptors” (they perform two independent recognition processes) so they were already suited to generate a code.
 - **The new “objects” that they produced were representations and feelings**, and **subjectivity was the overall result of this process**, because **one is a “subject” only when it has access to an internal world of its own making**.
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Is code semiotics a theory?

- Codes are usually defined as something a conscious intelligent being with agency designs with a purpose, most often as a part of communication be it by Morse code, flags or computer programs.
- **In Barbieri's theory molecules are the code makers and agency is transferred to them! It is a non-mental functional agency.**
- The code can work on the physio-chemical level without conscious interpretation, which normally demands a central nervous system.
- Thus is this paradigm cybernetical? Cybernetic information science works with differences and codes in a dualistic system. They do not have a triadic concept of signification. Maturana's autopoiesis and structural couplings is also an alternative to Peircean semiotics.

Codes before signs evolutionarily

- The main idea in “code-semiotics” is that codes are simpler than signs and therefore can be said to be before signs in evolution.
- Signs demands representation as a prerequisite to function and the main question is if that demands a nervous system because interpretation demands intentionality and we have no minds without nervous systems.
- But we are in biosemiotics interested in how code emerge through evolution, exactly because they are as important for life as Barbieri describes.

Is code semiotics an evolutionary theory?

- Eigen with his hyper-cycles and Kauffmann with his self-organized auto-catalytic loops Maturana and Varela with their theory of autopoiesis.
- Barbieri's highly critical towards these attempts and claims to solve the problem by **giving the molecular codemakers agency**, but an agency that is devoid of any form of mind-representation and interpretation!? But such a theory would have to explain from the bottom up how they got agency – else it is just a description.
- That living systems are not machines created by a more conscious and intelligent being is fundamental in the paradigm of natural sciences.
- Thus suddenly codes have to be created bottom up for autopoietic system instead of instead as top down from allopoietic systems like computers..
- **Can code-semiotics do this?**

The problem of emergence

Life evolves out of a world appearing to be sufficiently described by physics and chemistry without the life that biology has been invented to describe.

From the theory of life again consciousness is seen to emerge. Not many want to deny this description of the world.

The problem is that many mistakes it for a theory of how life and consciousness arises in the world and what these phenomena are.

But it only works in certain presumed ontologies: These I have analyzed in *Cybersemiotics: Why information is not enough to be:*

Paradigms of emergence

1. Bertalanffy's **general system theory** of holism and self-organization plus later developments including cybernetic information theory and Niklas Luhmann's autopoietic system theory.
 2. In **dialectical materialism** is build on a theoretical concept of matter as containing dialectical evolutionary forces and consciousness as a reflection of nature. It combines natural and historical materialism. For Engels it then was a theory of the evolution of life and mind. Further developed Leontief's activity theory.
 3. **Peircean triadic**, synechist, hylozoist, evolutionary agapistic triadic semiotics.
 4. **What is the ontological presumptions of code-semiotics** other than the received view of physics and chemistry? They have not been able to give at theoretical description of life and consciousness so far?
Barbieri: The chemical, the informational plus codemaking .
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Is code semiotics a new theory of emergence?

- Eigen with his hyper-cycles and Kauffmann with his self-organized auto-catalytic loops has both with marginal success attempted to explain how agency could develop from the interaction between molecules that did not have any agency themselves whatsoever.
- Barbieri's highly critical towards these attempts and claims to solve the problem by the molecular codemaker agency.
- As far as I can see he reasons from that since codes are important in life and code needs a maker then the macro-molecules involved in this must be the code-makers, ergo they must have agency, but an agency that is devoid of any form of mind-representation and interpretation.
- What is that?
- Alexei Sharow's agency-theory has life as a prerequisite. It does not attempt to explain it, as far as I have understood.
- Does Howard Pattee's theory solve the problem? I think it is still primarily a theory of science and as such does not offer a solutions to the problems code-semiotics try to solve.

Descriptions versus theories

- Defined from a Peircean biosemiotics code and informational signals are quasi-signs as they are dualistic phenomena and signs demands all three categories working together.
- Peirce's theory does not work without his paradigmatic framework of the three categories and the ontology those imply, but this is exactly what Barbieri want to avoid in order to make biosemiotics scientific.
- **I see the remaining problem in the paradigm to be to offer us a deeper theoretical explanation, not an addition to the received views description of evolution, because that has so far not produced a theory of experiential life and mind that can explain how signification arise in certain systems in our universe.**