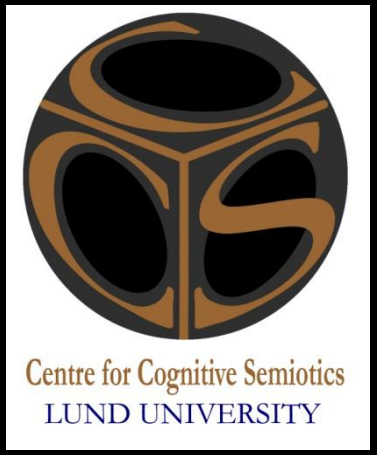
The Ladder of Meaning

Life, Consciousness, Culture, Signs and Language

***Lectures in Cognitive Semiotics*, ENS, Paris 2012**

Lecture 2



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Research questions

- Conceptual: what is meaning, consciousness, culture, signification and language – and what is their basic interrelation? (Lecture 2)
- Evolutionary: how did human-specific culture and language evolve? (Lectures 3-4)
- Developmental: how does the human mind, communication and language develop in childhood? (Lectures 5-6)
- Semantic: Why are human languages not (completely) arbitrary sign-systems? (Lectures 7-8)

Goal for this lecture

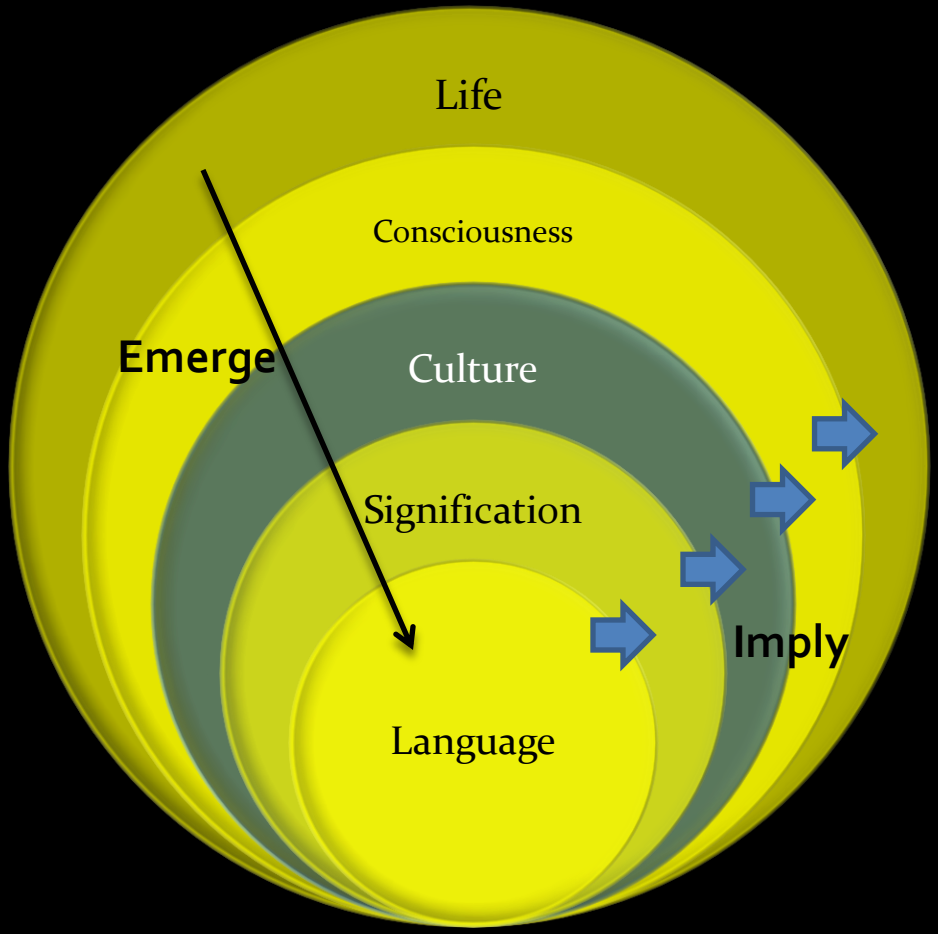
- A general cognitive-semiotic framework in which to situate the more specific questions
(cf. "the conceptual-empirical loop")
- "The Semiotic Hierarchy"

Zlatev, J. (2009a). The Semiotic Hierarchy: Life, Consciousness, Signs and Language, *Cognitive Semiotics*, #4: 169-200.

Zlatev, J. (2009b). Levels of meaning, embodiment, and communication. *Cybernetics and Human Knowing*. Vol 16, 3-4: 149-174.

- Revise this in relation to conceptual and empirical issues that have arisen since 2009:
"The Ladder of Meaning"

The Ladder of Meaning



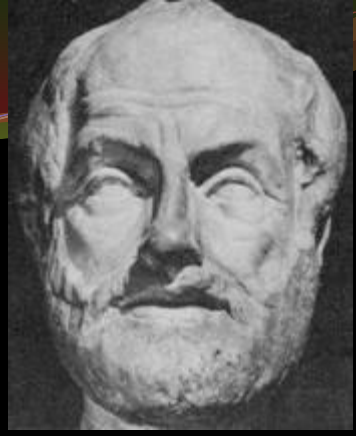
Scala naturae?

Hist. Sci., xiii (1975), 1–28

THE GREAT CHAIN OF BEING AFTER FORTY YEARS: AN APPRAISAL

William F. Bynum
University College, London

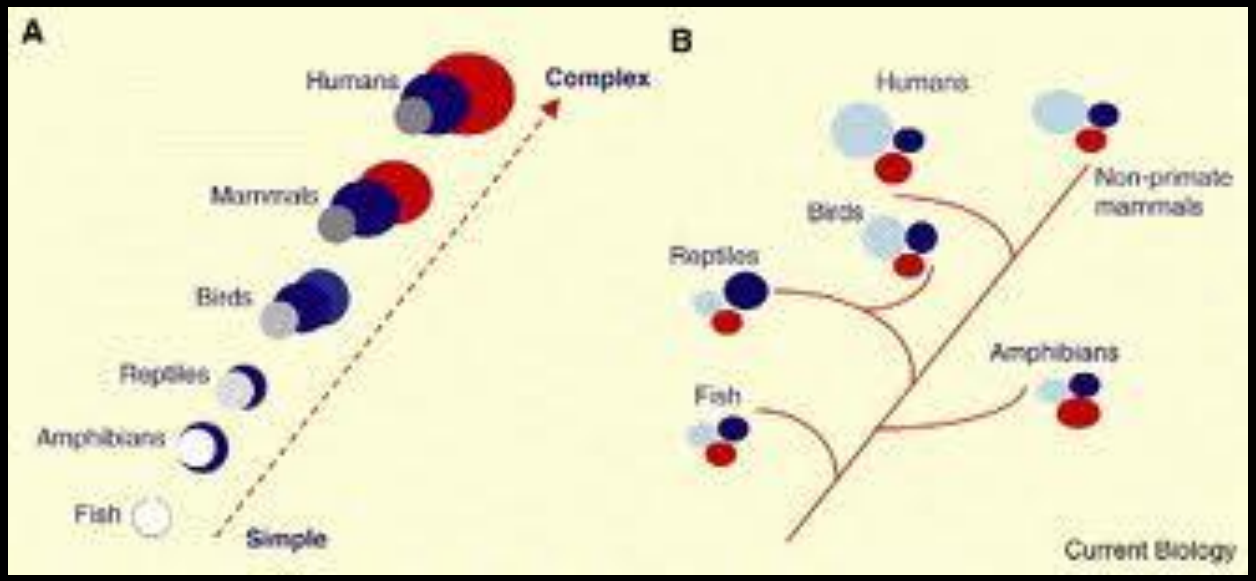
No, but with some affinity to *De Anima*



- ✓ "For the soul is… the first principle of living things" (Book I, Chapter 1)
- ✓ The soul is not Matter but Form ("organization"?)
- ✓ A (gradual) hierarchy between the "souls" of plants, animals and man (cf. "The deep continuity between life and mind")

- ○ "the complete unawareness of Aristotle to treat the problem of subjectivity within the general handling of the soul" (Lawson-Tancred 1986: 84)
- ○ A contingent relationship: the "highest" faculties (intellect) could exist in the absence of the lower.
- ○ Not an evolutionary, but "taxonomic" hierarchy.

But modern evolutionary theory is not “hierarchical” or stage-based…



1. We are not claiming that evolution is “teleological”, but that under some conditions, (qualitatively) new properties can emerge.
2. Some properties are the precondition for the evolution of others.
3. The concept of “evolution” is itself evolving (beyond “the modern synthesis”)

Overview

- A unified (cognitive-semiotic) theory of meaning
- The Ladder of Meaning
  1. Life
  2. Consciousness
  3. Culture
  4. Sign use (signification)
  5. Language
- Levels of "communication" and "cognition"

A unified theory of meaning?

- "Our conception of *meaning* has become increasingly fragmented, along with much else in the increasing 'postmodernization' of our worldview….

  While a certain degree of perspectivism concerning a multi-faceted concept such as meaning is certainly healthy and perhaps even necessary, this extreme fragmentation of views … is hardly defensible." (Zlatev 2003: 254-253)

Help from Semiotics?

- Is meaning a universal property of the universe, as in Pansemiotics (Peirce, Deeley, Mladenov…)?
- Is meaning a property of life as in Biosemiotics (von Uexküll, Kull, Hoffmeyer…)?
- Is meaning a human/culture-specific phenomenon as in Cultural semiotics ("Anthroposemiotics") (Saussure, Greimas, Hornborg…)?

An attempt at unification (1)

Meaning (M) is the relation between an organism (O) and its physical and cultural environment (E), determined by the value (V) of E for O.

$$M = V(O, E)$$

(Zlatev 2003: 256)

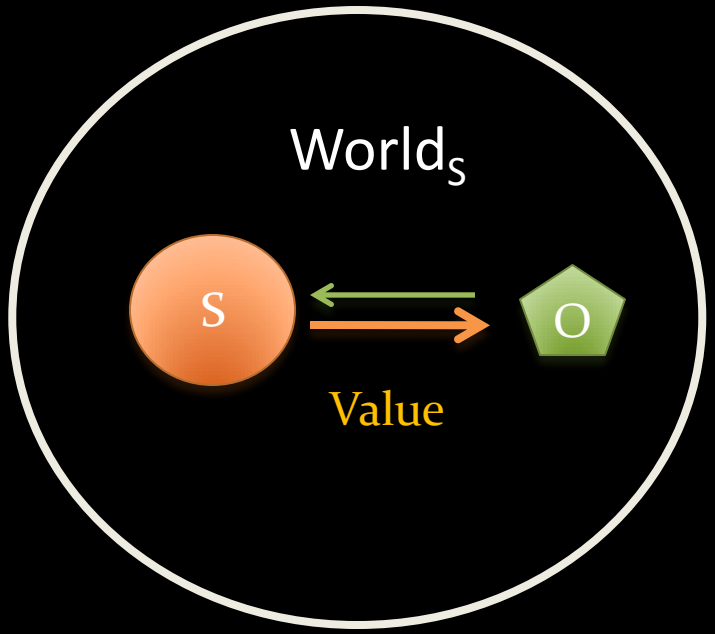
An attempt at unification (2)

The meaning of a given phenomenon, for a given subject, will be determined by the "type" of world … in which both are embedded AND the value of the phenomenon for the subject. If either p falls "outside" W, or its value for S is nil, p will be meaningless for S.

$$M(p, S) = W(p) * V(p, S)$$

(Zlatev 2009: 180-181)

- Meaning is (a) a bidirectional Subject-World relationship, (b) on several different levels

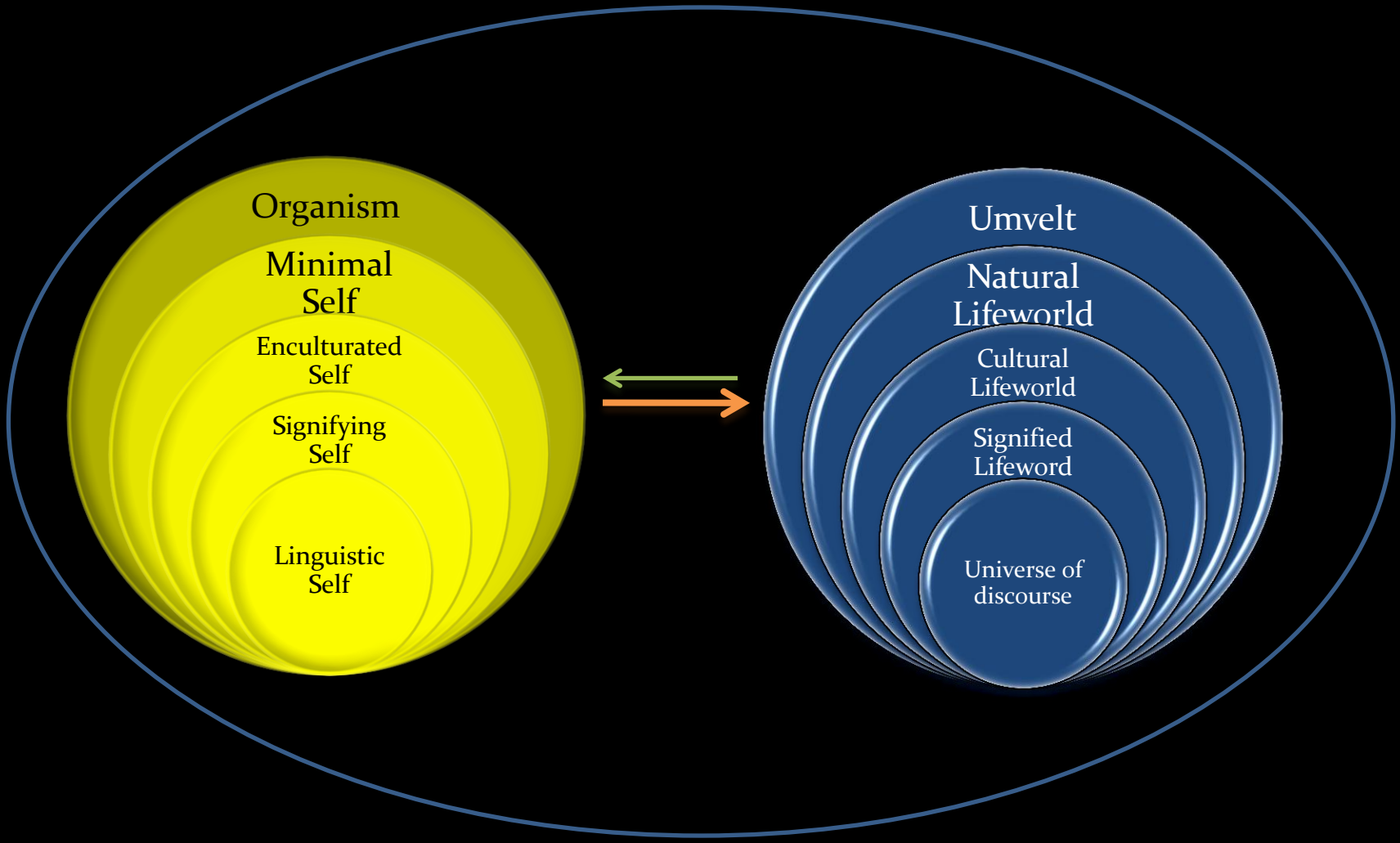


The Subject (S), in interaction with others, is co-constituted in relation to a meaningful, value-laden World (W).

Five levels of meaning

Level	Subject	World	Value system
1	Organism	*Umwelt*	Biological
2	Minimal self	Natural *Lifeworld*	Phenomenal
3	Enculturated self	Cultural *Lifeworld*	Cultural
4	Signifying self	Signified *Lifeworld*	Sign-based
5	Linguistic self	Universe of Discourse	Normative

The levels are inclusive



Implications

1. Meaning and cognition are nearly identical concepts, and "at the bottom" - properties of Life.
2. Consciousness is a "natural" outgrowth of Life: "the deep continuity of Mind and Life" (Thompson 2007).
3. Culture evolves under certain cognitive and social conditions, and can change the nature of further evolution.
4. Signification (sign use) evolves in the context of complex cultures, altering the nature of communication (and cognition)
5. Language evolves as a special kind of sign use, through bio-cultural co-evolution.

1. Life: *autopoiesis*

The essence of life?

- "The soul, then, is the cause and principle of the living body … as that from which the movement itself arises [formal cause], and as that for whose sake it is [final cause], and as the formal substance of ensouled bodies [formal cause]." (Artistotle *De Anima*, II/4)

- "… in terms of merely mechanical principles of nature we cannot even become familiar with, much less explain, organized beings and how they are internally possible." (Kant 1987: 282), *Critique of Judgment*

- "Mechanistic" accounts of nature, along the line of (neo-) Darwinism offer considerable advances in biology, but they cannot explain the origin and purposefulness (teleology) of life.

"The minimal organization of the living"

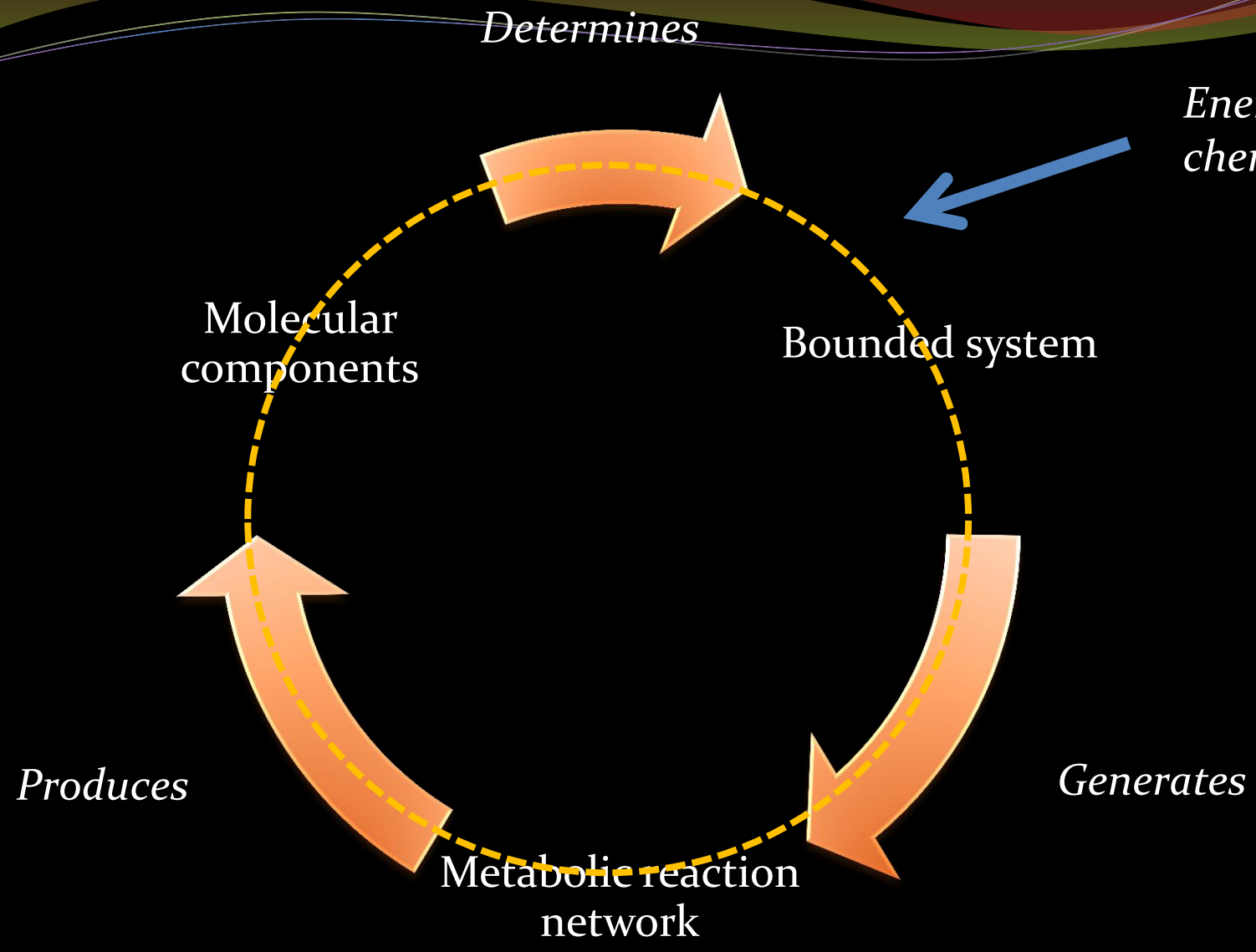
An autopoietic system—the minimal living organization—is one that continuously produces the components that specify it, while at the same time realizing it (the system) as a concrete unity in space and time, which makes the network of production of components possible. More precisely defined: An autopoietic system is organized (defined as unity) as a network of processes of production (synthesis and destruction) of components such that these components:

(i) continuously regenerate and realize the network that produces them, and

(ii) constitute the system as a distinguishable unity in the domain in which they exist.

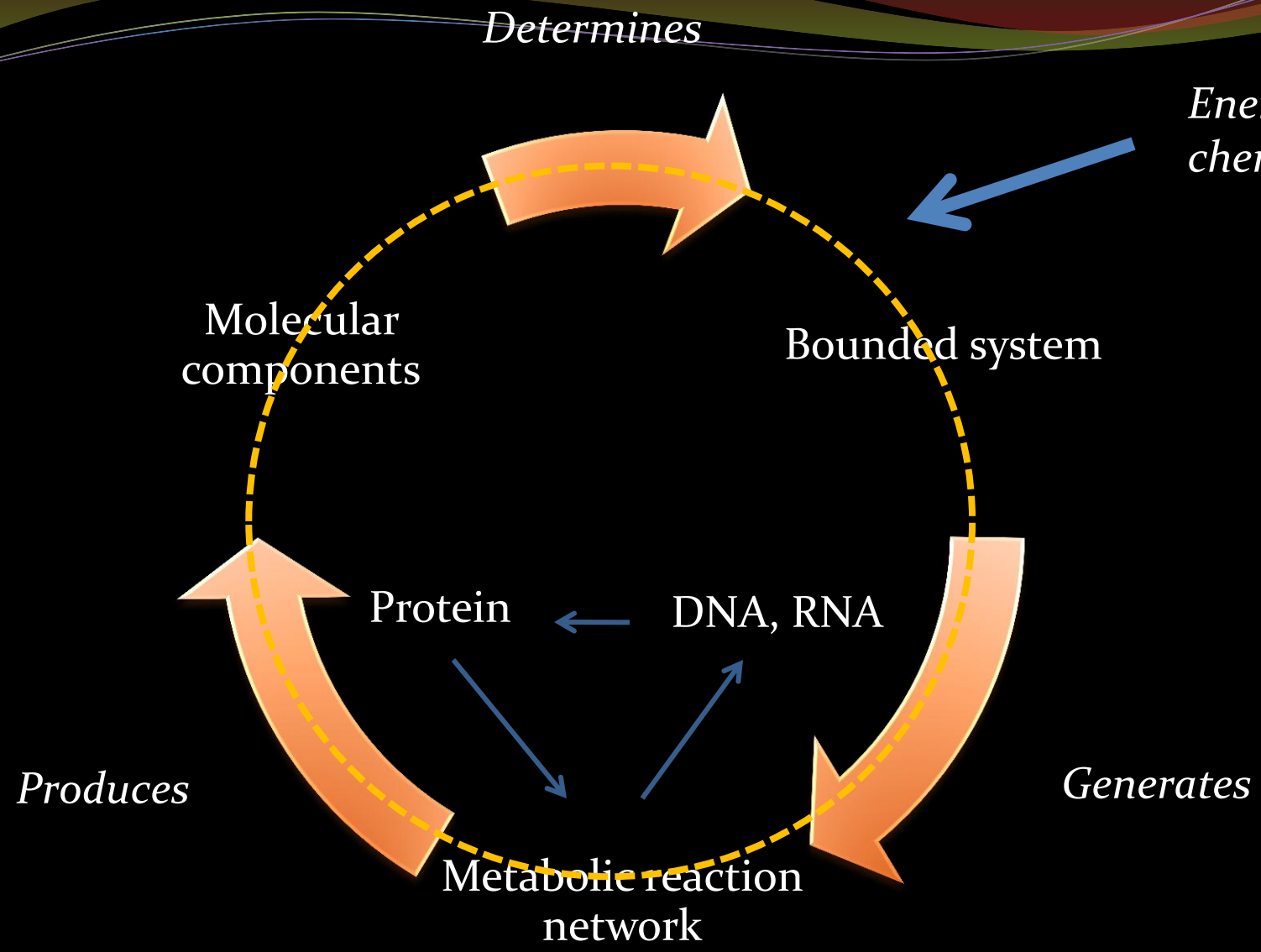
(Varela 1997, p. 75)

- Corresponding to Aristotle's "form" of living bodies?



The *organizational*, but not energetic, closure of an autopoietic system

(Thompson 2007: 101)



DNA/RNA version of autopoiesis

(Thompson 2007: 102)

Criteria

Entity	Unity with semi-permeable boundary?	Components produced by the network?	First two conditions interdepen-dent?	Autopoietic?
Virus	Yes	No	No	-
Crystal	Yes	No	No	-
DNA section	No	No	No	-
Autocatalytic Set	No	Yes	No	-
Machines	Yes	No	No	-
Mitochodria	Yes	Yes	No	-
Bacterium	Yes	Yes	Yes	Yes
Amoeba	Yes	Yes	Yes	Yes

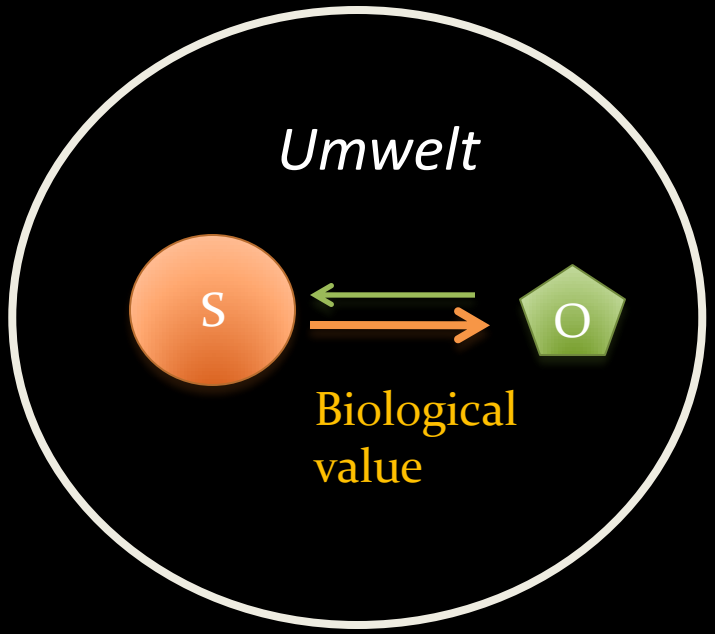
After (Thompson 2007: 103)

Necessary, but sufficient?

- "Purposes or aims, are not features of the organization of any machine (allo- or autopoietic); these belong to the domain of our discourse"… (Maturana and Varela 1980: 85): social constructivism?

- "Immanent purposiveness" (Varela 1997) = (a) to maintain identity and (b) sense-making "changes the physiochemical world into an environment of significance and valence, creating an *Umwelt*" (Thompson 2007: 147)

- Di Paulo (2005): Minimal autopoiesis gives only (a), for (b) active seeking to improve its conditions of self-production is required, i.e. cognition.



Level 1: Biological (organismic) meaning

But not consciousness

- “There is not good reason, however, for thinking that autopoietic selfhood … involves any kind of intentional access on the part of the organism to its self-making. Second, it seems unlikely that minimal autopoietic selfhood involves phenomenal selfhood or subjectivity, in the sense of pre-reflective self-awareness constitutive of a phenomenal first-person perspective.” (Thompson 2007: 162)

2. Consciousness: *sentience*

What is consciousness?

Not a "thing", but a number of different (though related) processes:

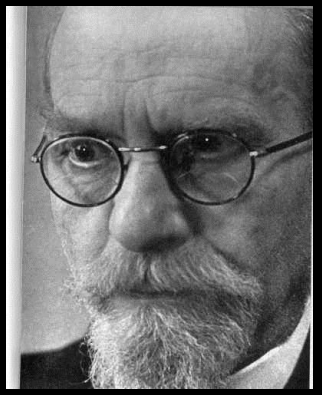
- Being aware of one's surroundings (perceptual consciousness)
- Experiencing feelings (affective consciousness)
- Being aware of one's own existence (self-consciousness)
- Being aware of "internal imagery" (imagination)
- Being able to reflect on a topic (reflective consciousness, "thought")
- Being aware of the experiences of others (other-consciousness, intersubjectivity)…

➢ At the root: Being aware: sentience

The precondition: A “minimal self” for which a phenomenal world appears

- “Pre-reflective self-awareness”
- “When I say ‘I’, I grasp myself in a simple reflection. But this self-experience is like every experience… a mere directing of myself toward something that was already there for me, that was already conscious, but not thematically experienced, not noticed.”

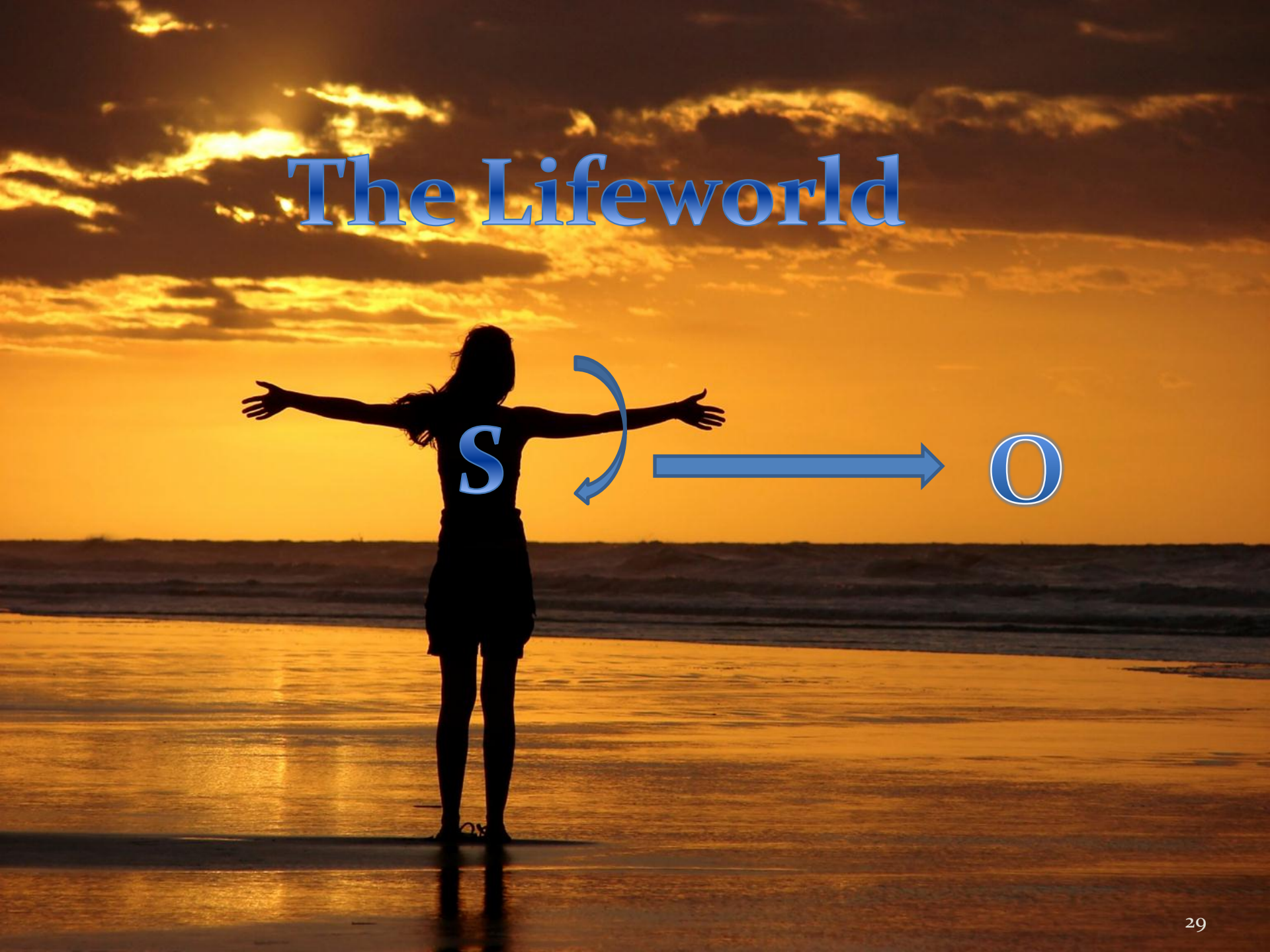
(Husserl 1973b: 492-793)



“… a consciousness has no need at all of a reflecting consciousness in order to be conscious of itself. It simply does not posit itself as an object.”

(Sartre 1957: 45)

The Lifeworld



A rich (but not too rich) notion of consciousness

- "Consciousness" consists all the way through of consciousness, and already sensation as well as phantasy is "consciousness". (Husserl 1912)

- Still - "passive synthesis": pre-conscious processes guide our perceptions, we often catch ourselves in the act (e.g. of noticing something attractive or repelling)

- We can understand these as resulting from Level 1 meaning/cognition

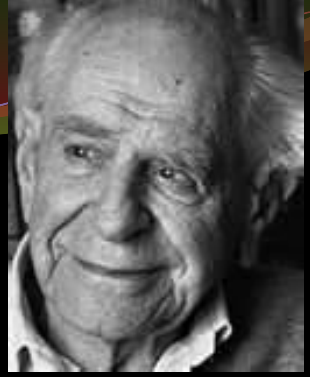
"Core consciousness"

- One of the argument for either eliminative materialism or for panpsychism is that "that there is no (biological) reason why consciousness should emerge".

- But "binding" elements of the *Umwelt* into coherent wholes ("objects", "scenes"), differentiated from the minimal Self, would be functional for behavioral flexibility and learning, especially for (higher) social animals.

➢ *Core consciousness* (Damasio 1994)
Primary consciousness (Edelman 1992, Baars 2000)

Karl Popper's World 2

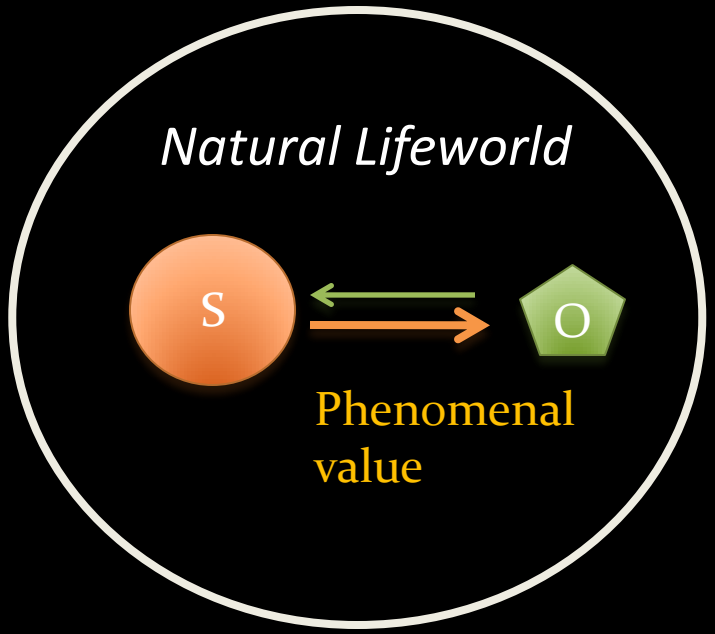


"Consciousness, World 2, was presumably an evaluating and discerning consciousness, a problem-solving consciousness, right from the start. … the original task of consciousness was to anticipate success and failure in problem-solving and to signal to the organism in the form of pleasure and pain whether it was on the right path or the wrong path to the solution of the problem."

(Popper 1992: 17)

Animal consciousness: evidence

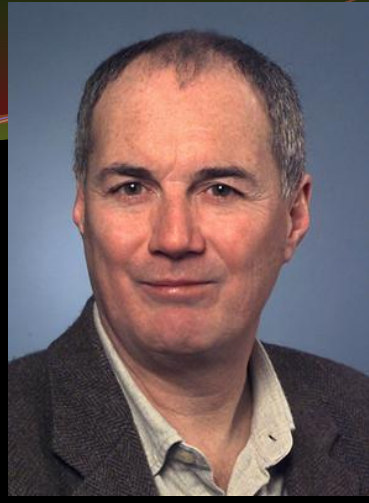
- Empathy: for animals most similar to us (mammals, birds)
- Ordinary language: "only of a living human being and what resembles (behaves like) a living being can one say: it has sensations; it sees; is blind, hears; is deaf; is conscious or unconscious" (Wittgenstein 1953 #281)
- Behavior: (e.g. mirror-self recognition - all the great apes, tamarins, elephants, dolphins…)
- Neuroscience: consciousness seems to be supported by the massively interconnected thalamocortical system (Edelman and Tononi 2001), and is characterized by high-frequency, irregular and low-voltage activity, essentially identical in monkeys, dogs, cats and rats (Baars 2005)



Level 2: Phenomenal meaning

3. Culture:
social transmission

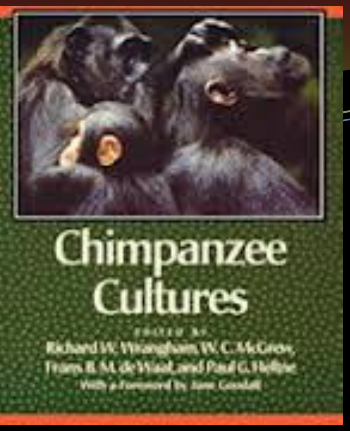
What is culture?



- "Intergroup differences in behavioral patterns and repertoires, which are not directly determined by ecological circumstances … which are learned and transmitted across generations" (Sinha 2006: 112)

- dialects in song-birds (Marler & Tamura 1964)
- sweet-potato washing by Japanese macaques, Koshima (Imanishi 1959)
- stone-handling by Japanese macaques, Arashiyama (Huffman 1996)

➢ Variation (mostly) in a single behavior pattern…

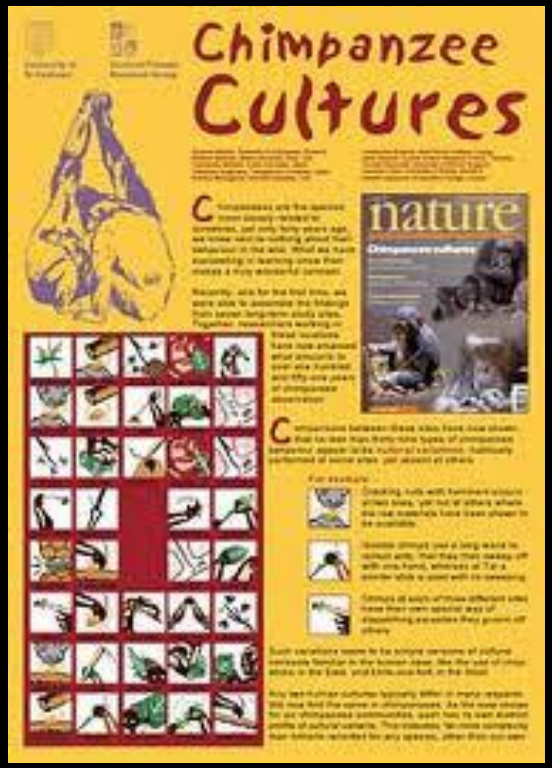


- "Human cultural traditions show universality, uniformity and history in a manner and degree that makes these traditions seem qualitatively different from the behavioral traditions of other animals. … How the behavioral and cultural traditions of chimpanzees are similar to and different primate species is a question that we have just begun to investigate systematically." (Tomasello 1996: 316)

Cultures in Chimpanzees

Nature, **399**, 682-685 (1999)

Whiten, A. [‡1], Goodall, J. [‡2], McGrew, W.C. [‡3], Nishida, T. [‡4], Reynolds, V. [‡5], Sugiyama, Y. [‡6] Tutin, C. E. G. [‡7], Wrangham, R. W. [‡8] and Boesch, C. [‡9]



By what kind of "social learning"?

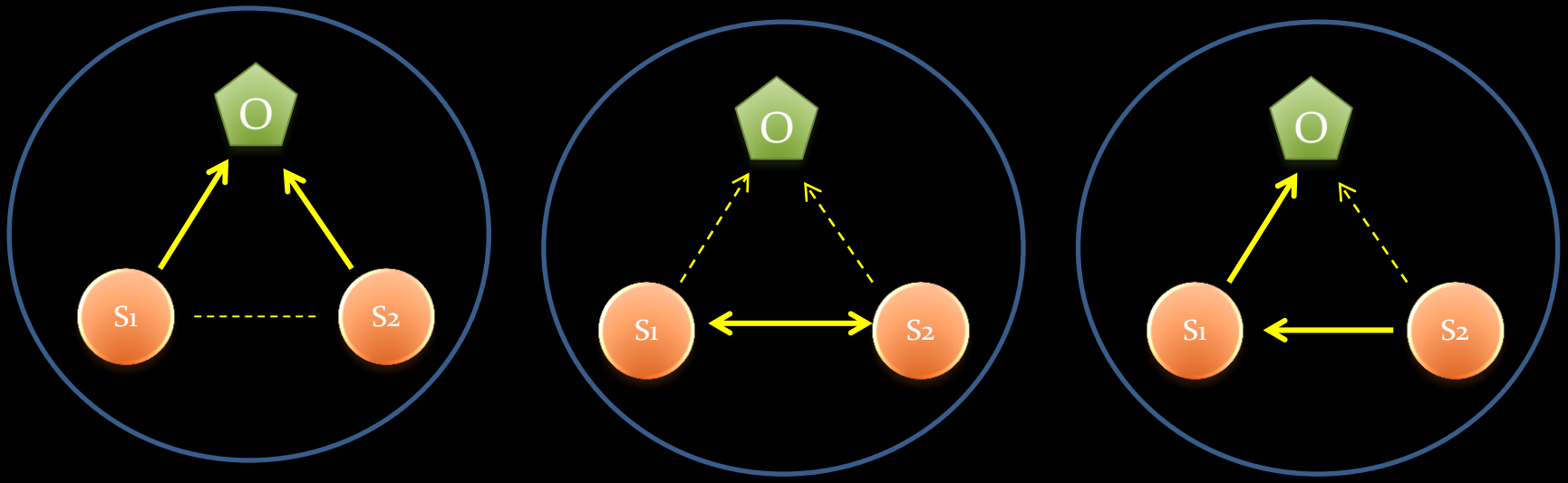
- *Emulation*: informing about the outcome of certain actions (Byrne 1998; Custance, Whiten and Fredman 1999)
- *Response facilitation*: informing about properties of objects (Byrne 1999)
- *Stimulus- and local enhancement*: helping individual learning (Tomasello 1996)
- *Imitation:*
  - of action sequences (with obvious goals) (Whiten 1998)
  - of truly novel actions, with novel goals, "cultural learning" (Tomasello, Kruger and Ratner 1993)
- *Teaching*: active demonstrations for the sake of novices, explaining the goals, when necessary

"Culture is an adaptation"

"Local and stimulus enhancement and imitation can lead to persistent behavioral differences among populations, but only imitation gives rise to *cumulative* cultural evolution of complex behaviors and artifacts" (= complex cultures) (Richerson & Boyd 2005: 108)

"Selection favors reliance on imitation whenever individual learning is error-prone or costly, and environments are neither too variable nor too stable." (: 118)

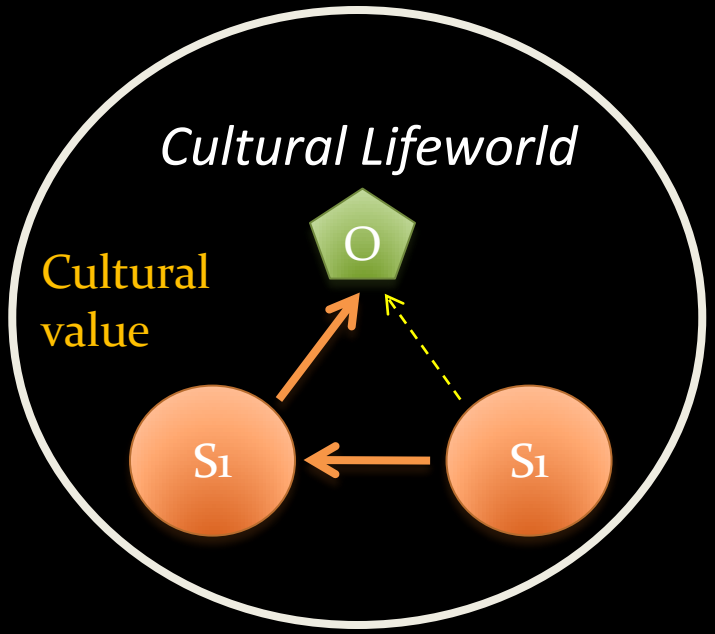
“Complex cultures”



Imitation is adaptive!

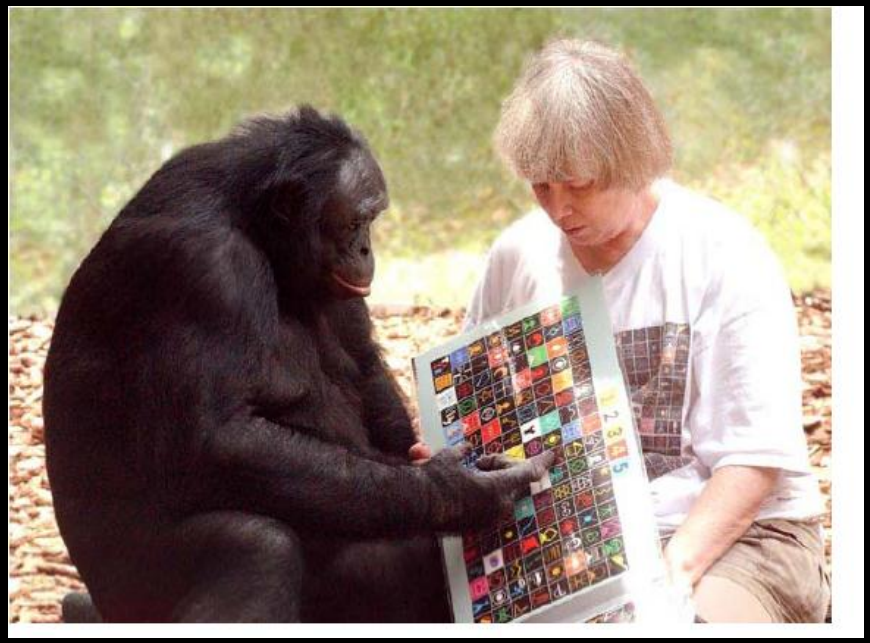
Culture and its preconditions

- "Culture is information [i.e. knowledge] capable of affecting individuals' behavior that they acquire from other members of their species [i.e. community] through teaching, imitation, and other forms of social transmission" (: 5)
- "secondary value selection" (1991), e.g. to boil drinking water or not?
- Changing and complex environment
- Enhanced capacities for intersubjectivity ("theory of mind") and imitation
- "fairly large populations of imitative minds" (: 138), the (troublesome) case of Tasmania
- Sign use?
- Language?



Level 3: Cultural meaning

.4. Sign Use: *“standing for”*



“Phenomenological semiotics”

“Thus, we can minimally define the sign by the following properties:

a) It contains (at least) two parts (expression and content) and is as a whole relatively independent of that for which it stands (the referent);
b) These parts are differentiated, from the point of view of the subjects involved in the semiotic process [...]
c) There is a double asymmetry between the two parts, because one part, the expression, is more directly experienced than the other; and because the other part, content, is more in focus than the other; [...]”

(Sonesson 2011: 25)

Signification (sign use)

A sign is used (produced or understood) by S, if and only if E (expression) *signifies* C (content) or R (referent), for subject S, so that:

- E and C/R are *connected*: in perceiving or enacting E, S indirectly perceives, or conceives of C/R
- E and C/R are *differentiated*: E is qualitatively different from C/R for S
- The relation is *asymmetrical* (E $\rightarrow$ C/R, not C/R $\rightarrow$ E)

Peirce reinterpreted by Sonesson

	Firstness	**Secondness**	**Thirdness**
Principle	*Pure iconicity*		
Ground (relation)	*Iconicity (similarity)*	*Indexicality (contiguity in space/time)*	
Sign type	*Iconic sign/icon*	*Indexical sign/index*	*Symbolic sign/symbol (based on convention)*

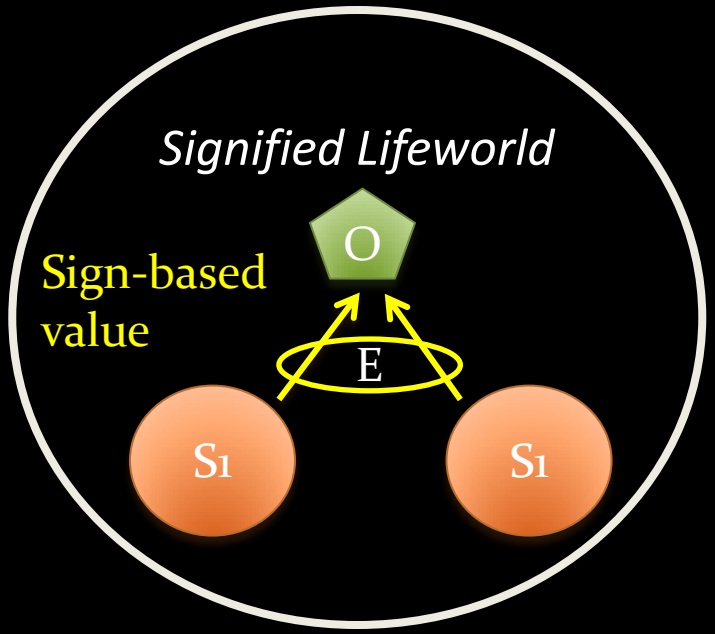
Signification by non-humans

- No animal in the wild has been demonstrated to use signs
- A number of species have been taught to use some sort of "protolanguage"
  - Chimpanzees and bonobos (Savage-Rumbaugh et al.)
  - Gorillas (Patterson et al.)
  - Orangutans (Miles et al.)
  - Grey parrots (Pepperberg et al.)
- But without training?

Types of “signs” used in experimental studies

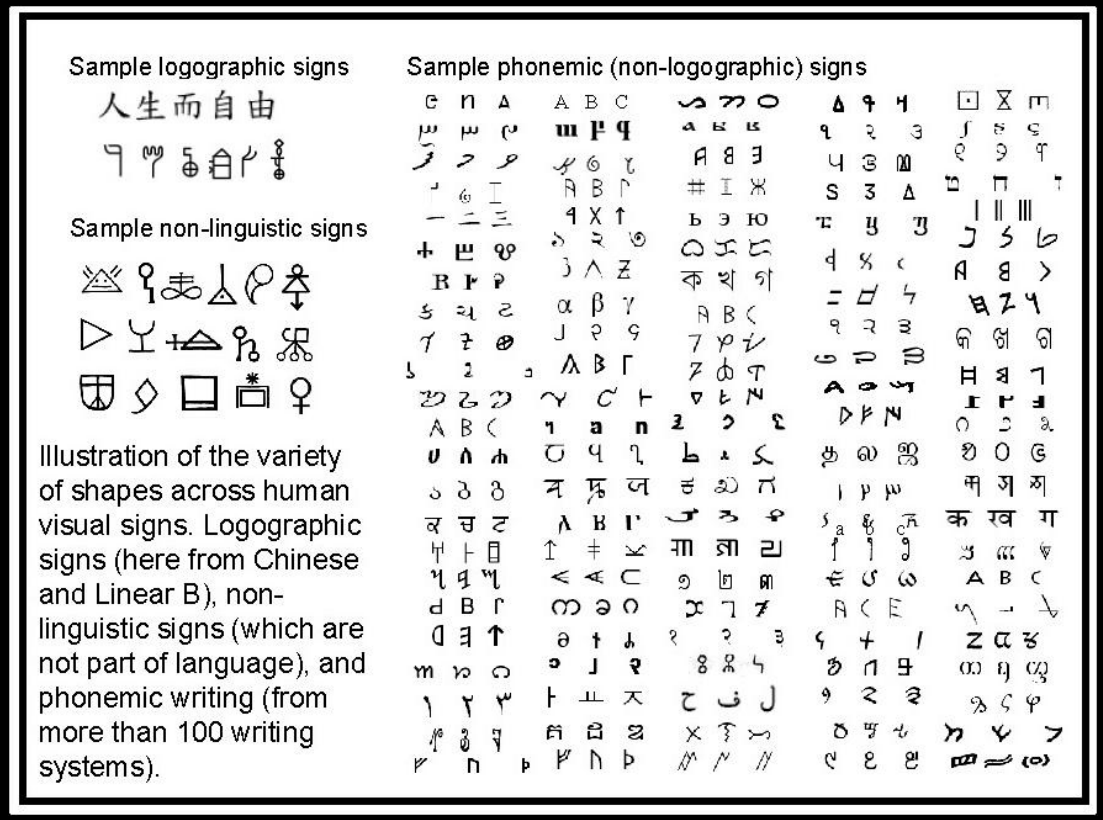
Vehicle	Bodily	Ground	Vector	Representation
Ostensive gaze	Yes	-	Yes	No
Proximal point	Yes	Indexical (+ Symbolic)	Yes	No
Marker	No/Yes	Indexical	No/Yes	No/Yes
Picture	No	Iconic (+ Symbolic)	No	Yes
Replica	No	Iconic	No	Yes

Chimpanzee study (Zlatev et al. in press)



Level 4: Sign-based meaning

5. Language: *normativity*



What is “language”?

“A (mostly) conventional-normative semiotic system for communication and thought.”

(Zlatev 2007, 2008)

Semiotic system = Signs in complex interrelations

a) Conventions and norms?
b) Communication?
c) Thought?

(a) Conventions and norms

- "A regularity R in the behaviour of members of a population P … is a *convention* if and only it is … common knowledge in P that, … (1) everyone conforms to R; (2) everyone expects everyone else to conform to R; …"

  (Lewis 1969: 76)

- Conventions are not just habits (regularities).
- The expectation that everyone (should) "conform to" them implies a normative aspect.

(a) Conventions of language

*John loves Mary. *Loves John Mary.*

*un chien, *une chien, une chienne*

*A dog is an animal. *A dog is a number.*

- The judgement that some expressions are correct (either grammatically or semantically), while others are not correct, is a pre-theoretical universal. (Itkonen 1978, 2003, 2008)

- Beyond judgements of correctness, there are also of judgments of congruence and appropriateness (Coseriu 1974, 1985)

Type of knowledge, "semantics", and conformity judgments

Type of Knowledge	**Semantics of**	**Conformity Judgments**	**Examples of non-conformity**
Elocutional (non-linguistic?)	Designation	Congruence	*??The five continents are four...*
Idiomatic	Meaning	Correctness	**The Europe are a continent.*
Expressive	Sense	Appropriateness	*?I dislike it.* (used as an apology)

Coseriu (1985)

(b) Communication

- Dance and Larson (1976, Appendix A) list 126 different definitions.

- Differ in at least:
  1. Degree of generality?
  2. Imply or not intentionality/purposefulness?
  3. Imply or not success?

(Dance 1970; Littlejohn 1999)

(b) Communication

- "Communication is the process that links discontinuous part of the living world to one another." (Ruesch 1956: 462) **too general**
- "It is the process that makes common to two or several what was the monopoly of one." (Gode 1959: 5) **too general + "success"**
- "Communication is the verbal interchange of a thought or idea." (Hoben 1954: 77) **too specific: "verbal", "success"**
- "Those situations in which a source transmits a message to a receiver with conscious intent to affect the latter's behaviors." (Miller 1966: 92) **too specific: too specific: "conscious intent"**
- "Communication is the transmission of information." (Berelson and Steiner 1964: 254) **vague: "information"?**

(b) Communication

"Communication is the transmission of meanings through different (bodily) expressions between two or more subjects." (Zlatev 2009b)

1. Generality: intermediate
2. Intentionality: non-committed
3. Success: uses the (often criticized) notion of "transmission", but does

   (a) Does not focus solely on the "sender", but on both parties and

   (b) Does not require in all cases for the sender's meaning to be *identical* with the that of the receiver: individual interpretation and collective negotiation

5 levels of communication

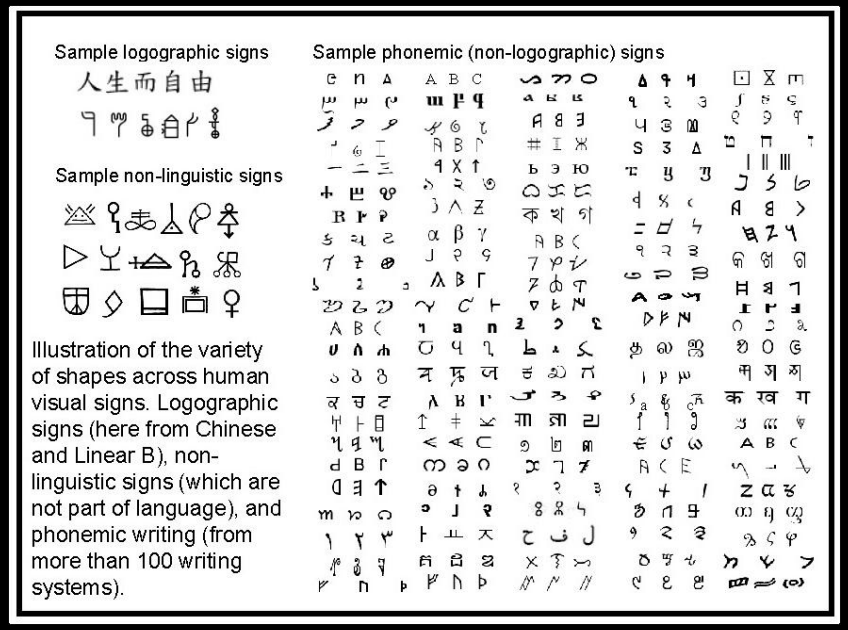
	Chanels		
Level	**Production: Body Perception: Vision/Touch**	**Vocal apparatus Hearing**	**Extra-bodily Vision, hearing…**
1	?	?	?
2	Bodily reactions	Cries	Traces
3	Intention-movements, Attention getters	Directed calls	Marks
4	Gesture, pantomime	"Vocal gestures"	Pictures
5	Signed language	Spoken language	Writing, Symbol systems

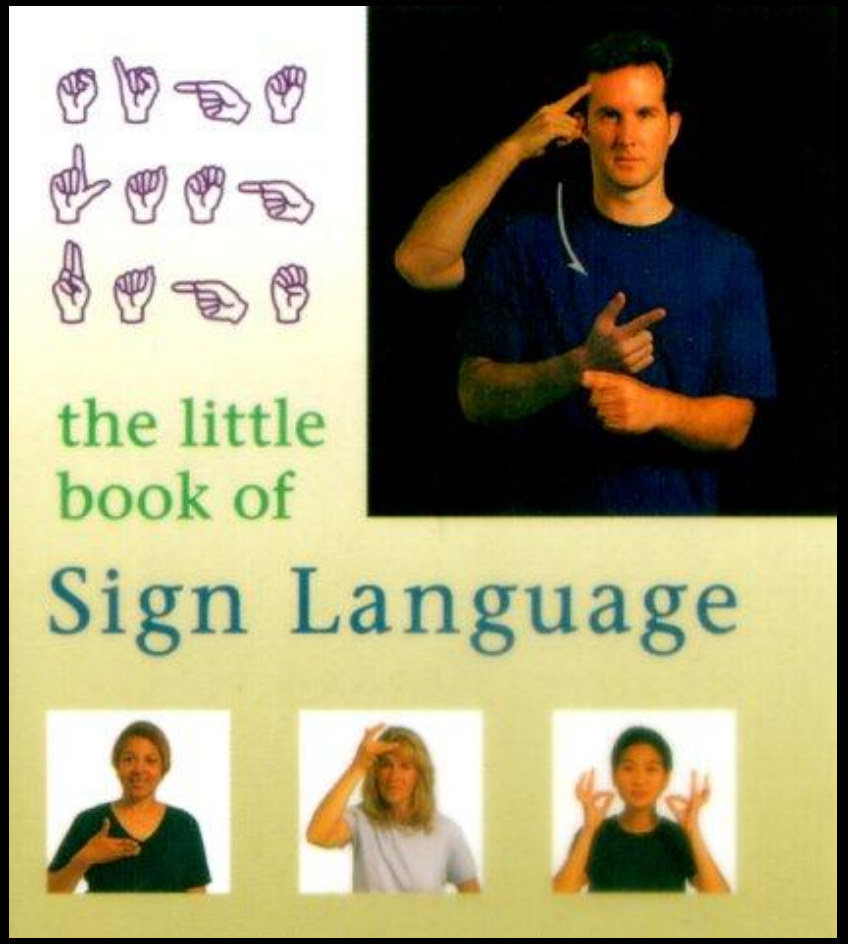
Level 2: Bodily reactions (such as *piloerection*)

Level 3: Socially learned signals

Level 4: Communicative signs

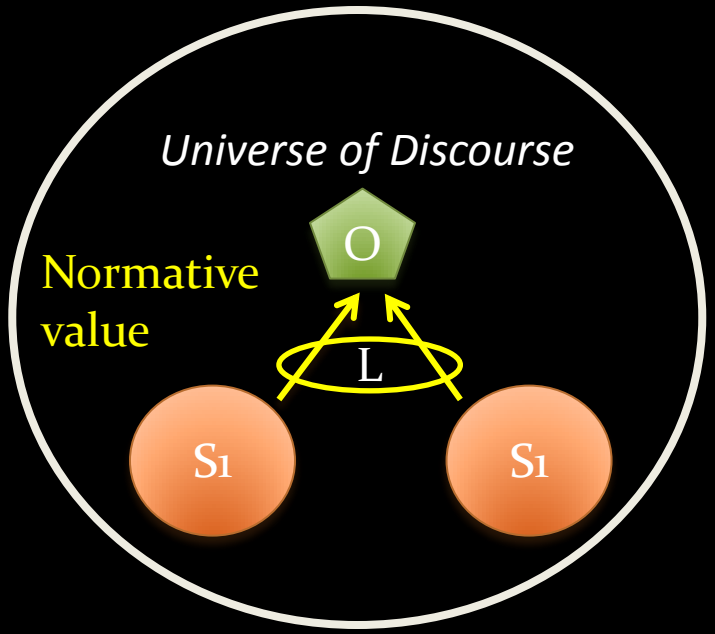
Level 5: Conventional (≠ “arbitrary”), normative sign systems





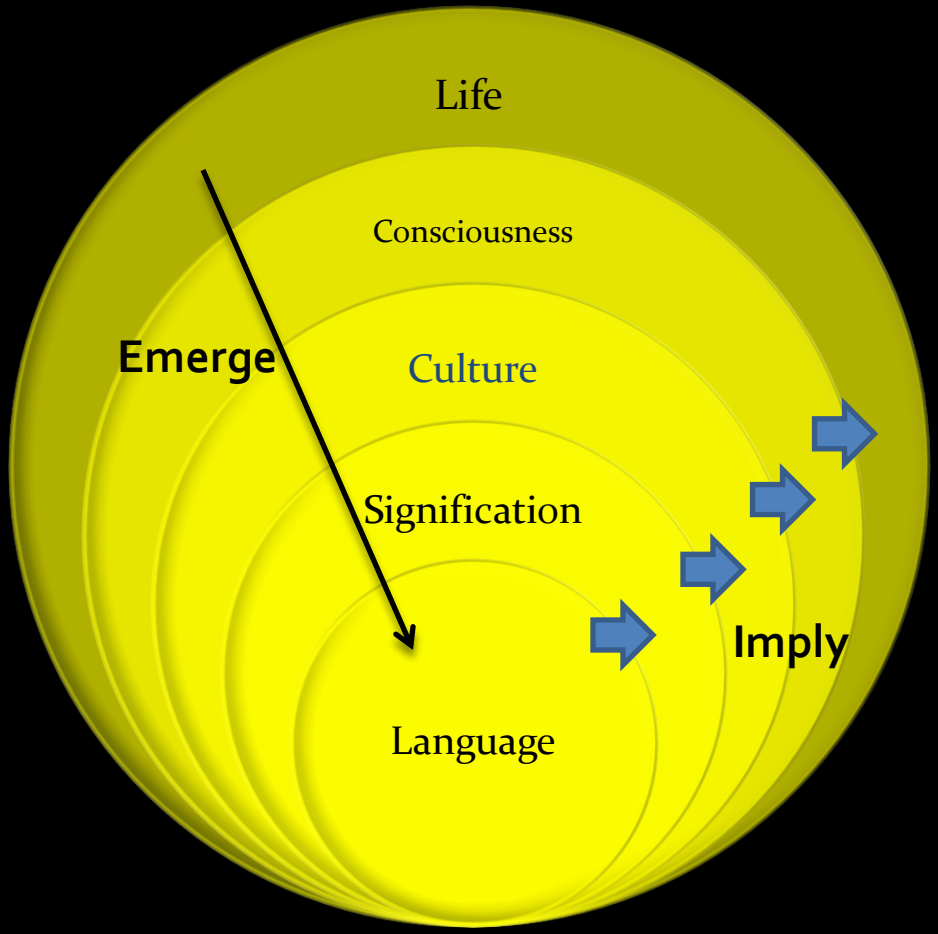
(c) Thought: Mediated cognition

Level	Subject	Type of cognition	Mediated by
1	Organism	Basic procedural memory "Sense-making"	-
2	(Minimally) Conscious self	Perception, "time-consciousness" (retention + protention)	-
3	Enculturated self	Episodic memory, anticipation	Mental imagery "Mimetic schemas"
4	Signifying Self	Communicative intentions, understanding the "sign function"	Internalized communicative signs
4	Linguistic self	Narrative, autobiographic memory, internal speech, complex planning	Nomrative representations



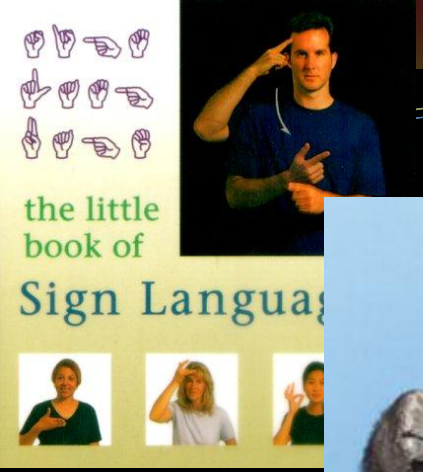
Level 5: Language-mediated meaning

The Ladder of Meaning



“The Ladder of Meaning”

- Instantiates one form of the Cognitive Semiotics program
- Shows how different kinds of “meaning”, “cognition” and “communication” can be both distinguished, and co-related
- Implies both continuity (“between life, mind and society”) and discontinuities (“thresholds”) in semiotic evolution
- Makes a small step to “mending the gap” between different semiotic frameworks (bio, phenomenological, cultural), and perhaps even between “Science and the Humanities”



Merci beaucoup!