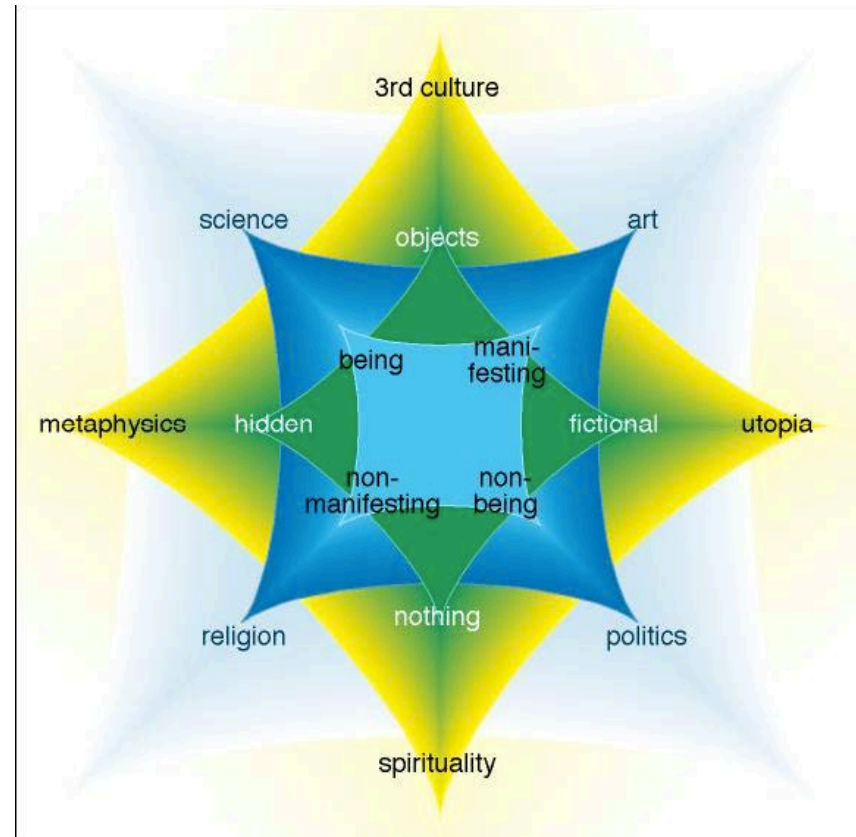


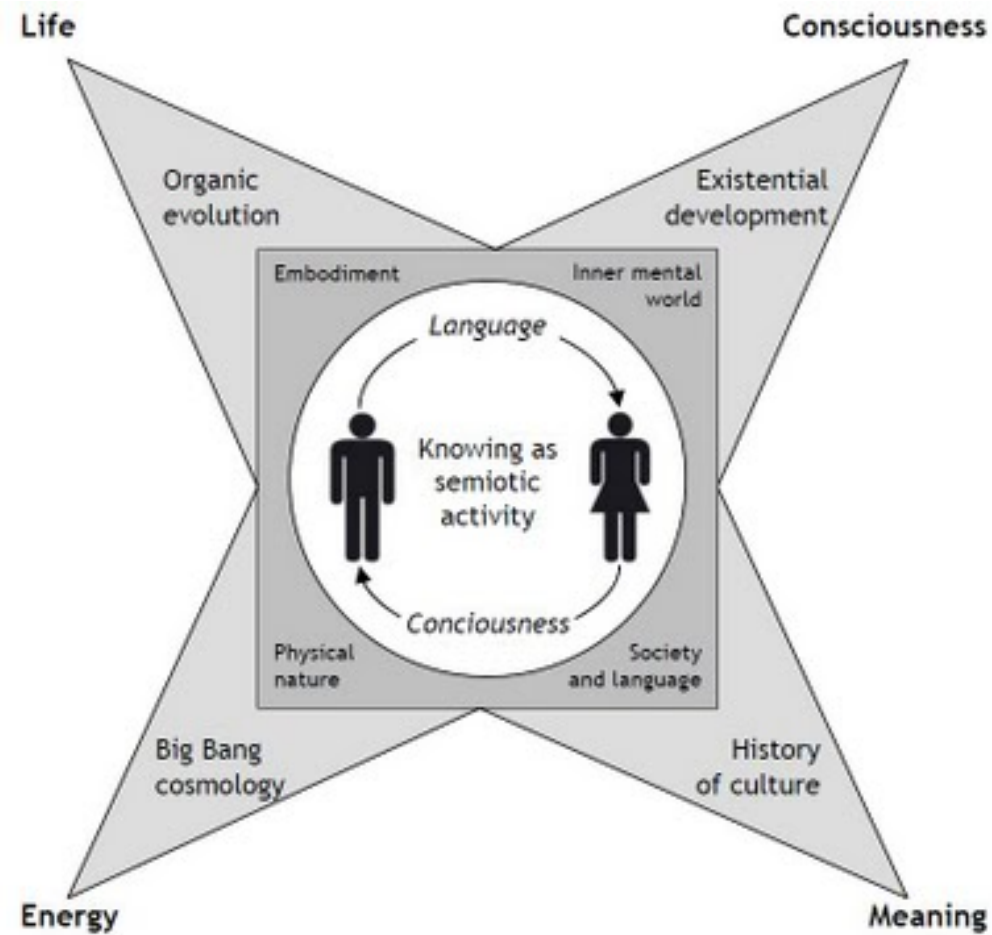
A Functional-Pragmatic Contribution to the Cybersemiotic Star

Ole Nedergaard Thomsen

The Cybersemiotic Star!



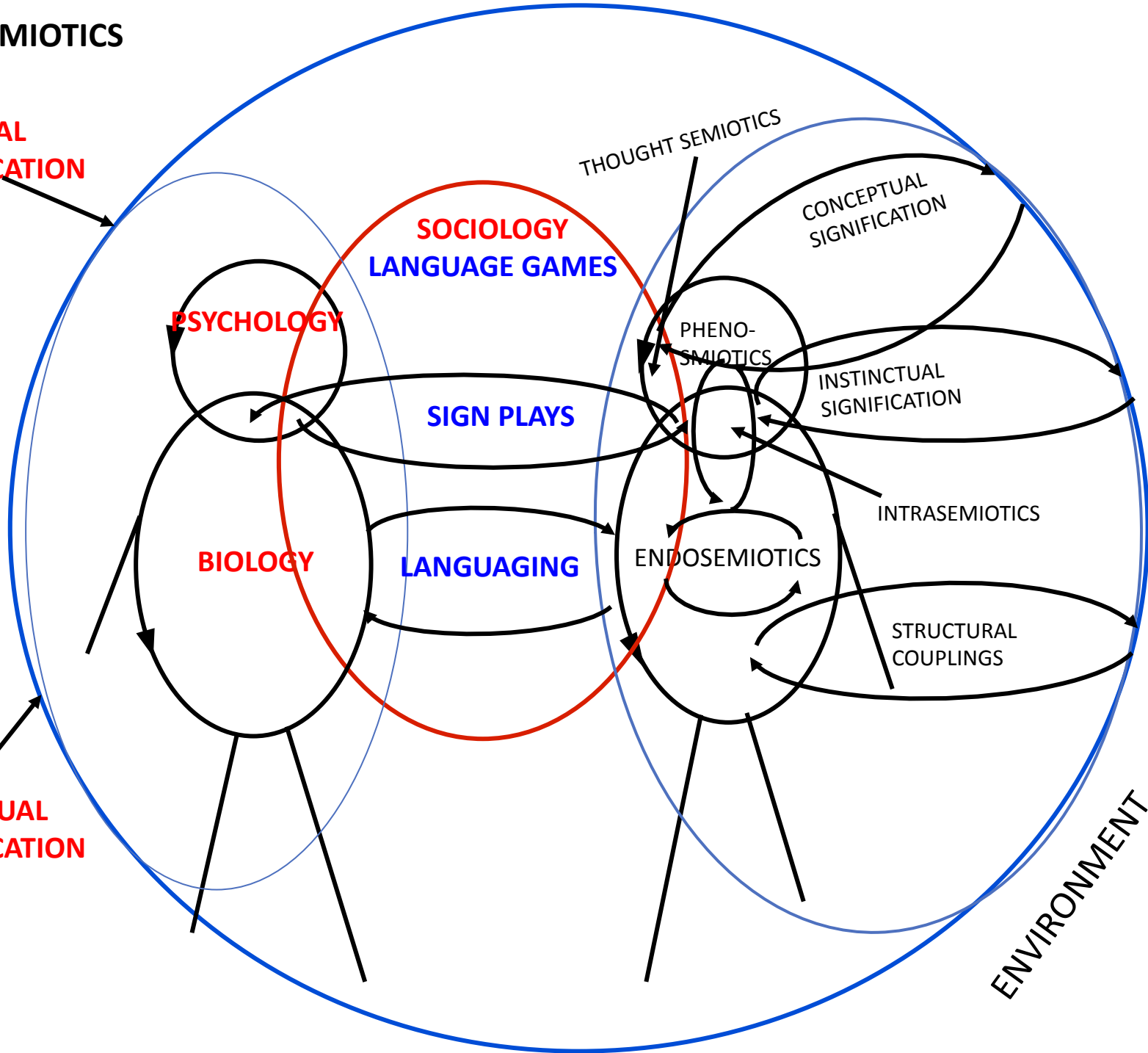
The Cybersemiotic Star



CYBERSEMIOTICS

**CULTURAL
SIGNIFICATION
SPHERE**

**INDIVIDUAL
SIGNIFICATION
SPHERE**



ENVIRONMENT

Cybersemiotics: The four dimensions, Absolute Naturalism

- 1. Physics-Chemistry
 - 2. Biology; Biological Anthropology
 - 3. Psychology
 - 4. Sociology, Linguistics
- Cybersemiotics
 - 1. (Physiosemiotics)
 - 2. Biosemiotics
 - 3. Psychosemiotics
 - 4. Sociosemiotics

Levels of exosemiotics

- Semiotic manifestation
- **Languaging**, physiology
- **Sign plays**
- **Language games**
- Physics-chemistry:
Hylo**pathism**
- (**Cognitive**) Biology_(Physiology)
- **Psycho**-biology (Ethology)
- (**Psycho**-)Linguistics
(social **psychology**)

The Nurture of Nature

- “(T)he pack structure emerges naturally in the communicative interactions of wolf pups raised together without adult tutors. The innate potential encoded genetically in motivational and emotional systems is expressed and responded to by others in a continuing process of communication. **The genes are, in effect, nurtured in the course of communicative interaction:** it is not nature versus nurture, rather **nature IS nurtured and indeed MUST be nurtured.**” (Ross Buck, in *Psychology Today*)

Levels of exosemiotics (1)

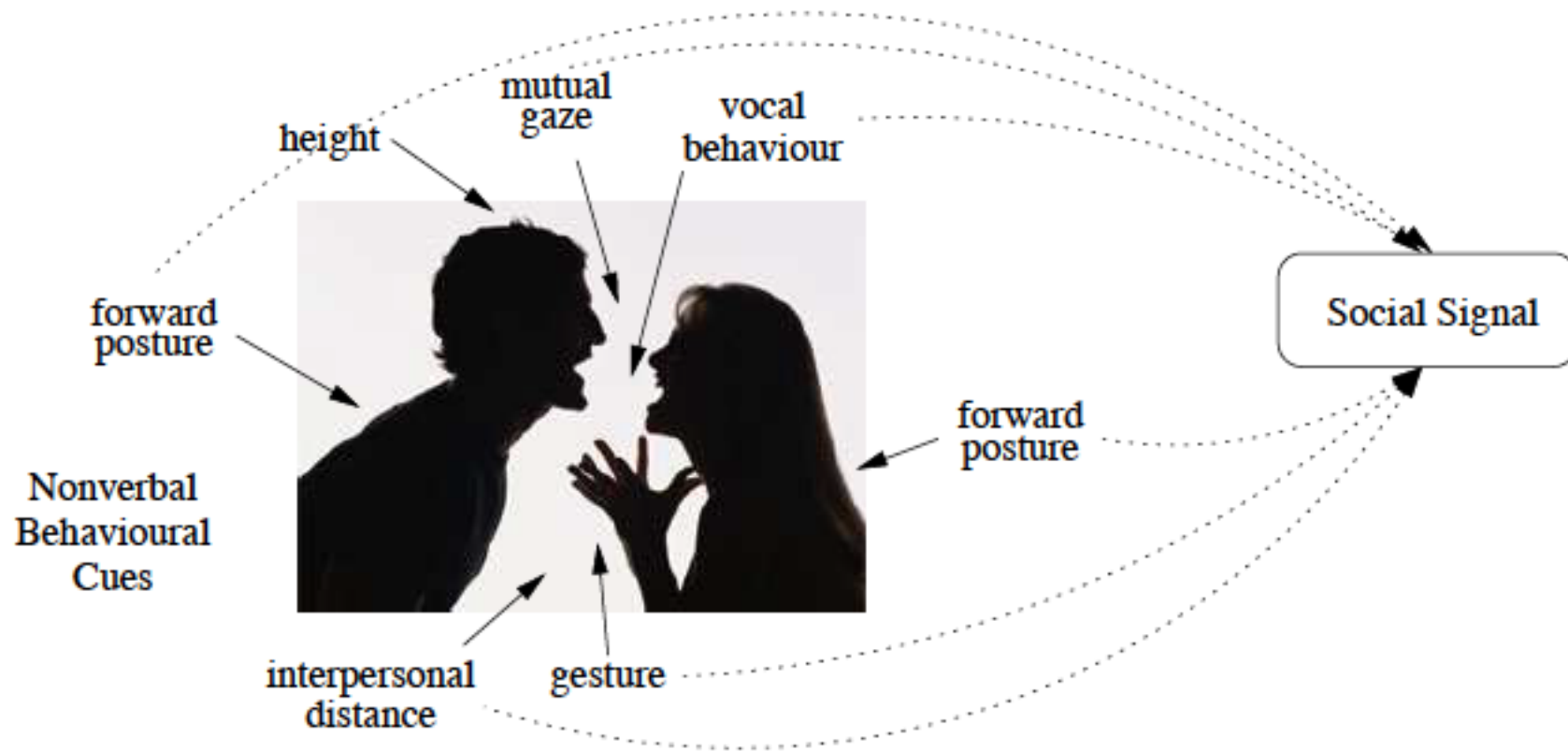
Semiotic manifestation (e.g. Fixed Action Pattern: Eyebrow flash)



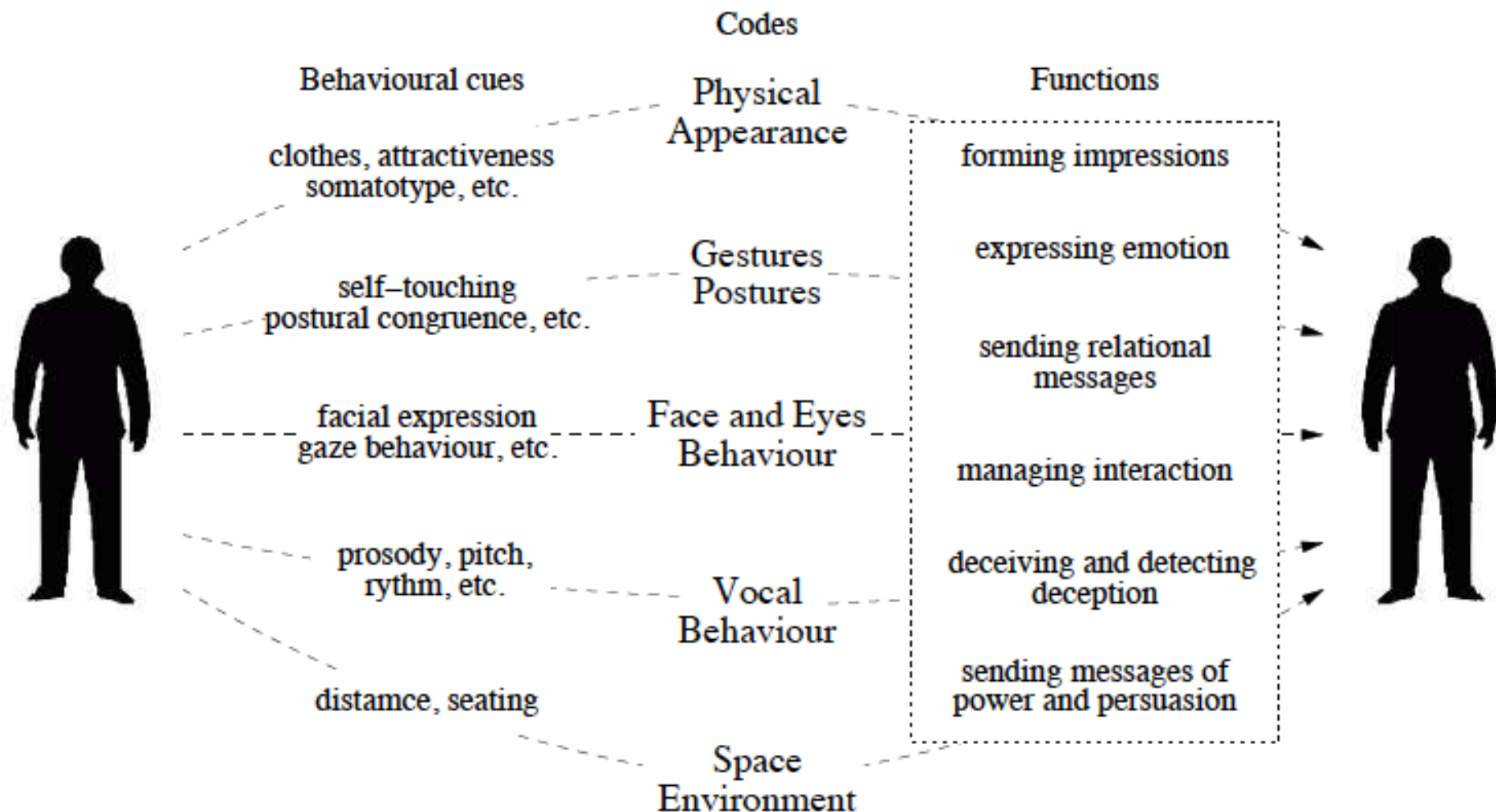
1. **linguaging** (emotional contagion, Tahir Square, Cairo 2011)



2. Sign plays (humans)



Sign plays (humans)



Levels of exosemiotics (2)

Sign plays



Language games



Total Communication/Integral Semiotics

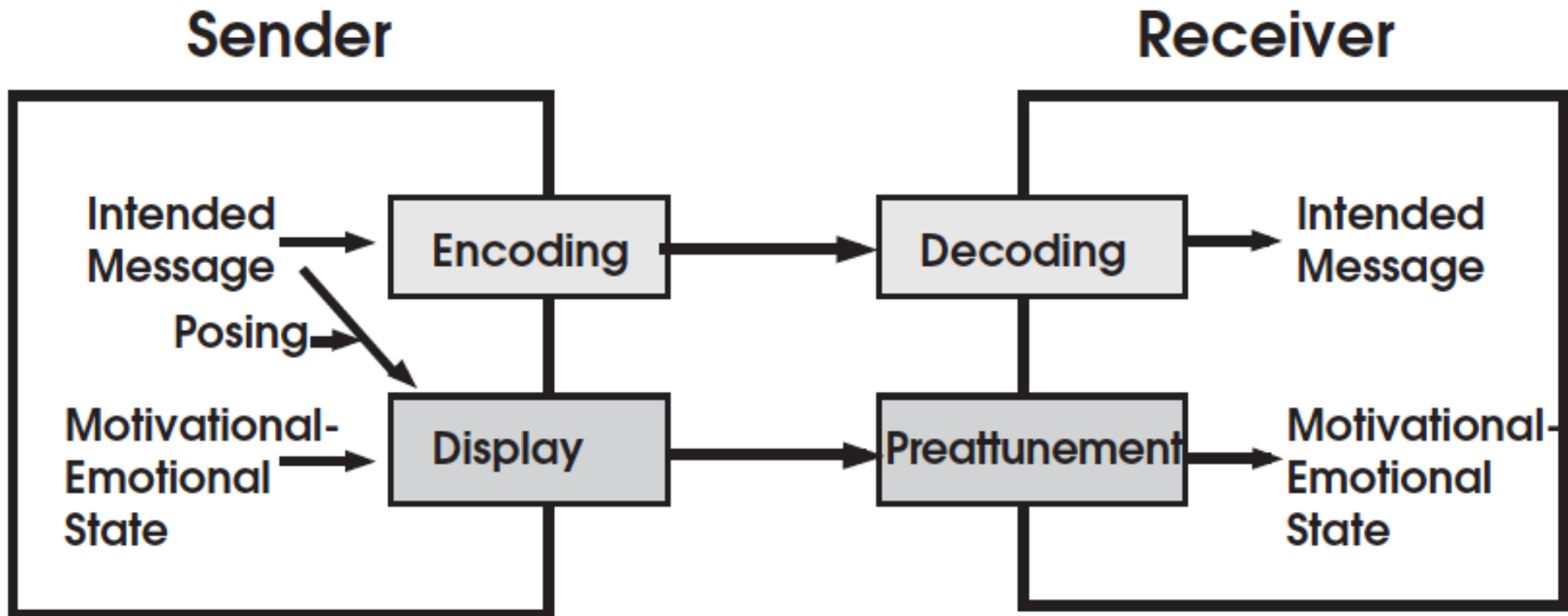


Total Communication

– Integral Semiotics

- – Each level subsumes the other(s): **telescoping**
- – I.e. (human) language games (3.) **integrate** sign plays (2.) and languaging (1.) into *total communication* (*Integral Semiotics*): implicational hierarchy:
- **languaging** > **sign plays** > **verbal language games**
- – I.e. we 'communicate' (and thereby also talk)
- **Persons**: **communicating bodies** (incl. de Saussure's 'talking heads') possibly with **technological extensions**

Hypókrisis/Actio



(Non-)Verbal language games



Biological foundation

- Biology (2.): genetic endowment for **self** (3.) and **society** (4.) – for **thinking** (3.) and **communicating** (4.)
- Biology: genetic endowment for **total communication** (**integral semiotics**), (species specific: homo sapiens & **loquens** → **cogitans** & **communicans**) ((phylogenetics))

Universal Communicative Competence

- **Universal Communicative Competence** for total communication ((essentials: **biological** "organ" of the mind-brain; uniform?; "genotype"; **phylogenetics**)), i.e. the biological foundation is not a domain-specific **UG**
- **Glossogenetic speciation**: socio-cultural evolution →
- **Culture- & language-specific Communicative Competence** ("phenotype"; **ontogenetics**)
- (E.g. the two kinds of German, i.e. in East vs. West Germany) ((contingencies: **socio-cultural instrument**))

Evolution of **Universal Communicative Competence**, not of UG!!!

- Any theory of the evolution of (verbal) language as an autonomous module (UG) is futile, insofar as:
- **Verbal communication** is telescoping the other evolutionary levels of communication in an **integrated whole**, which should be explained

'Verbal' language games: **cross-modal integration** (*InterPragmatics*)

- **Complex, multimodal & multimedial** level of communication, dominated by a central verbal tier:
- iconic **gesticulation** (holistic, e.g. motion event)
- indexical: **pointing**, nodding
- **symbolic: verbal** (sequential–compositional format)
 - vocal vs. (manual) signed; "spoken" vs. written
- postverbal, symbolic: **emblematic** (e.g. Victory sign)
- iconic: **pantomimic** (holistic)
- printing, pictorial, ICT, clothing, piercing, tattooing

Communicational Universals

- What has evolved biologically is a set of **universal pragmatic 'principles and parameters'** (**Universals, pragmatic faculty**)
- I.e. **deontological habit** (thirdness: **patterns of language use (inc. peripheral input-output systems)**); conventionalization, symbolicity (counting-as); creativity, generativity; semanticity, interpersonality, discursivity), Darwinian natural selection: here, favors agents that are **generalists**
- What has **not** evolved:
 - –A set of concrete semiotic conventions (i.e. epigenetic)
 - –Specific linguistic, abstract arbitrary principles (UG, domain specificity)

Enérgeia: Communication is process

- Communication is **semiotic interactivity/praxis** (secondness, **enérgeia**)
- Communicative **competence** is crystallized communication (thirdness, **dúnamis**), i.e. competence to perform, a processor, i.e. only **functional-pragmatic** principles are relevant
- Integral-semiotic **discourses** are occurrences, events, facts, objects, texts (firstness, **érgon**)

Communication and behavior

- Communicative/cultural **praxis** is integrated with non-communicative behavior (**sympraxis**)
- **C-induction/Deontology**: learning how to **coordinate**: learn to do what the others do (to be "in tune")
- **N-induction/Ontology**: learning (to understand and manipulate) the **natural**, everyday **world**

Communicative Competence

- – Is "shaped" by **processing** (acquisition, historical change; production & comprehension, retrieval & storage)
- – I.e. has evolved as an adaptation to **use** (processing efficiency)
- – We speak **to be heard to be understood, to be "followed"** (do as you are told!) (Jakobson)

Teleology: means-end model

- **End:** production; transmission, change: expressivity/expressibility, creativity, changeability, processability, cognitive usefulness (unconstrained process); recognition, comprehension; acquisition: impressivity, learnability, predictability; mutual intelligibility, minimizing memory load (economy, efficiency, least effort)
- **Means:** constraints: symbolicity (discrete symbols), alterity, normativity, regularity (analogy) vs. arbitrariness/irregularity (anomaly), frequency, digital coding (features, phonemes, morphemes, ...), incrementality, brevity, compositionality, working memory capacity, ambiguity avoidance; iconic and economic motivations; diagrammatic iconicity, metaphoricity, metonymy

- Expressibility/expressivity → complexity
- Ease of processing (incl. learning) → simplicity
- Ease of production/articulation → simplification of the comm. signal (less informative comm. signal)
- Ease of comprehension/recognition → precision of the comm. signal (more informative comm. signal)

“Central Processing Unit” (CPU)

- **Embodiment**: CPU = CNS, brain, cortex, ... → **body**
- Ergo: communicative competence as a **mental faculty** (for **thining-for-communicating** and for **communicating**) is **physiologically implemented**
- Cognition and communication are some of the **functions** of the “CPU”. **CPU** has evolved so as to be able to **perform** these **functions** (of growing complexity: **languaging** < **sign plays** < **verbal language games**), the functions in the first place being constrained by the CPU (e.g. sensory-motor control); spiraling adaptation/co-adaptation

CPU \leftrightarrow communication

- **Broca's area**: sequential (compositional) and other types of procedural learning, memory constraints \rightarrow acquisition & processing & change; mirror neurons for motor actions and communication (incl. language)
- general cognition, for total communication, incl. linguistic communication

The Nurture of Nature

- Culture-gene co-evolution:
- Culture exerts selection pressure on genes, and genes exert selection pressure on culture, simultaneously
- Fit (mesh) between: Communication-culture and genetically evolved mental mechanisms (processing constraints)
- Memetics \leftrightarrow Genetics (co-adaptation)

Evolutionary circularity

- Phylogeny: Proto-constraint (UCC1) shapes proto-communicative competence (CC1)
- Ontogeny & Glossogeny: CC1 → CC2 → ...
- Phylogeny: UCC1 → UCC2
- Phylogeny ← Ontogeny → Glossogeny

Biology/embodiment and the **tripartite psyche/mind**

2nd dimension: Biology (genetic)

Species-specific endowment, innate prerequisites for communication:

- 1. **Languaging** (neural basis for intersubjectivity – mirror neurons; imitation)
- 2. **Sign plays** (instinct to learn)
- 3. **Language games** (incl. language instinct)

3rd dimension: Psychology

The tripartite psyche/mind
Communicative intelligence

- 1. **Unconscious reflexive**
- 2. **Motivation, emotion**
- 3. **Self-consciousness, free will, accountability**; thinking-for-communicating, incl. LoT)

The tripartite Signification Sphere

Individual Signification Sphere

Cultural Signification Sphere

- 1. Information
- 2. Instinctual signification
- 3. Linguistic-semantic
(universal vs. lg.-culture
specific) signification

Cognitive Semiotics

Psychology (input to total communication)

Subjects, subjectivity

- 1. Unconscious, reflexive (embryonic semiotic) →
- 2. Motivation, emotion →
- 3. Self-consciousness, → reason (*zoon politikon*), reciprocity, free will

Human culture: Soc. coord.: Total Communication; **nurture** of nature

Intersubjectivity

- 1. **Reflexive languaging** (e.g. bee communities)
- 2. **Sign games** (animal culture)
- 3. **Language games** → social facts, institutions, incl. verbal languages

Modality & Mediality: **Manifestation**

2nd dimension: Biology, Physiology:
Articulation & perception

- 1. Languaging →
- 2. Sign plays →
- 3. Language games →
 - auditory specializations
 - vocal anatomy

1st dimension: physics,
chemistry: the medium

Objectivity

- 1. **Honest social signals**
- 2. **Ethological displays** (e.g. scents, colors, movement)
- 3. **Multimodal & multi-medial displays**: whole body + extensions, audio-visual signals, ETCETERA!!!