

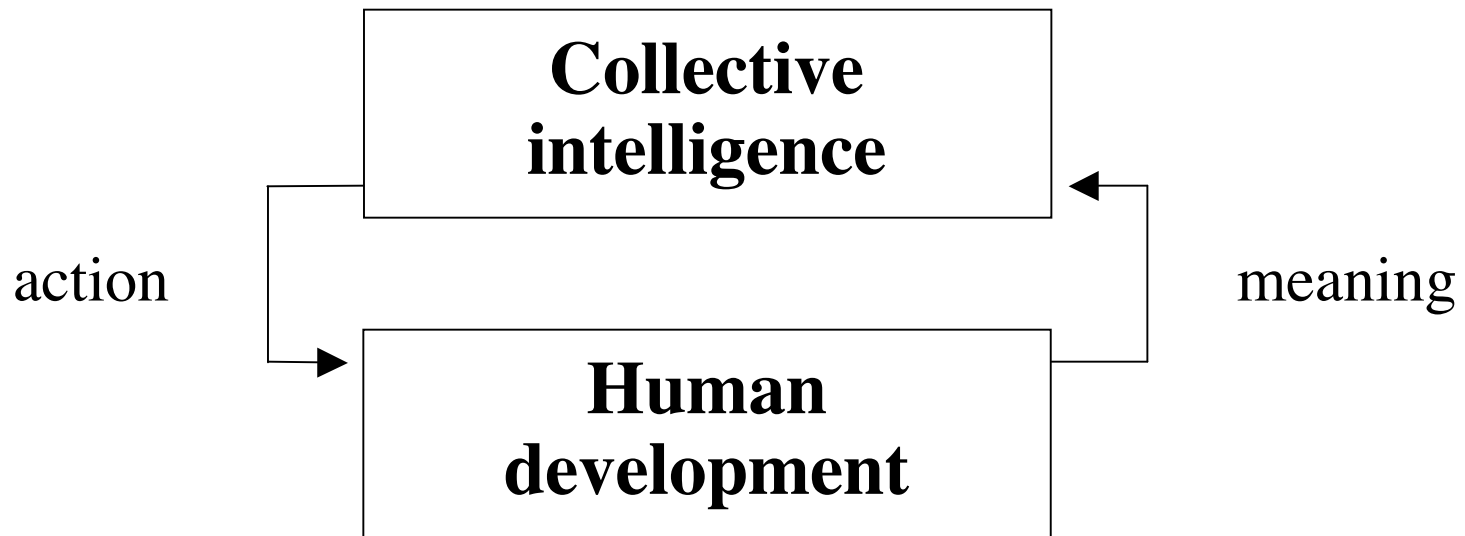
# Cognitive Augmentation Languages for Collective Intelligence and Human Development

CRICS, Salvador de Bahia

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# Dynamics of Human Development in the Cyberspace Era



A creative, diverse, evolving and complex self-organizing process

# Human Development

- Cultural heritages (transmission of)
- Democracy (political pluralism, peaceful and legal government change)
- Health and well-being of the whole population
- Human rights (equality of rights, freedom of expression and association, property rights...)
- Economic prosperity
- Education (long life)
- Innovation (technical, legal, administrative, economic, esthetic...)
- Peace and security
- Scientific research (fecundity and social benefits of)
- Sound environment

# Successive **Linguistic** Layers in Cyberspace's evolution

## Noosphere



Semantic Web + Visualization technologies +  
**Cognitive Augmentation Languages**

## Semantic Web



WWW+ Broadband + WIFI + grid computing +  
**XML + RDF + Ontologies + Intelligent agents**

## WWW



Internet + **URL + HTML**

## Internet



Servers + Telecom Networks + PCs +  
**TCP-IP + e-mail + FTP**

## PC



Computers + Micro-chips + **Application  
Software + WYSIWYG Interfaces**

## Computer



Transistors + **Formal Logic + Digital Coding  
+ Programming Languages**

# Cognitive Augmentation Languages

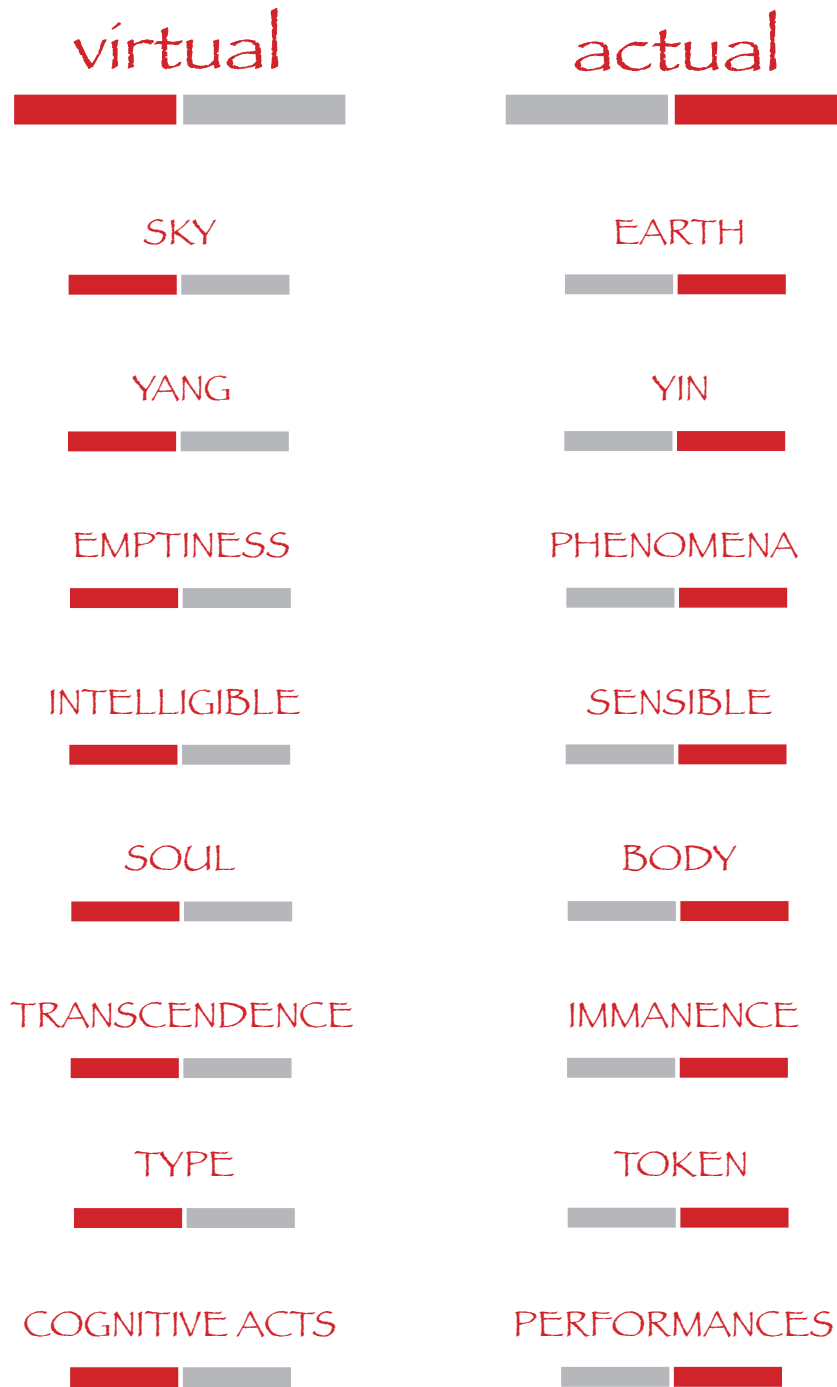
- Fully computable (including semantics and pragmatics).
- Cognitive augmentation through symbolic system.
- Cognitive addressing.
- Cognitive geometries for measurement and mapping of the cognitive space.

# P2P Metaphysics

- Each (virtual) community is at the center of an original and valid universe of meaning.
- Each community recognizes that the other communities are at the center of an original and valid universe of meaning.
- Except an inescapable *sustainability* in a context of global *interdependance*, there is no limit *a priori* to the development of new ontological standpoints.
- Communities share the coordinate system of an infinite cognitive space where semantic and pragmatic phenomena are measured, analysed, simulated and shared from every possible ontological standpoint.

- Information Economy Metalanguage: **IEMML**  
CAL developed at the Collective Intelligence Lab. of the University of Ottawa
  - Fractal grammar (same search and semantic distance algorithm from the phrase scale to the library scale)
  - Open possible creation of sub-languages for specialized domains (like health !), but all specialized languages share a common semantic coordinate system => automatic cross translation
  - Only two primitives, one pragmatic p. with 2 possible values, one semantic p. with 3 possible values.

## 2 pragmatic states of information





# 3 semantic states of information

sign

being

thing

semiotics

logic

symbol

state of mind

thing

proposition

judgement

state of things

vox

conceptus

res

economy

signifier

signified

referent

market value

property

utility

sign's foundation

interpreter

object

religion

cognition

Torah

Community of Israel

YHVH

intelligence

intellect

intelligible

Son

Spirit

Father

formal intelligence

emotional intelligence

practical intelligence

Koran

Umma

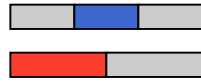
Allah

Dharma

Sangha

Buddha

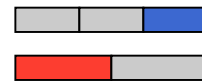
# INTENTIONS



# KNOWLEDGE



# SKILLS

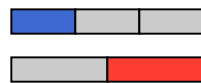


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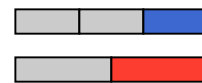
## 6 conditions of human development

virtual  
actual

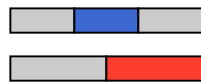
# DOCUMENTS



# EQUIPMENT



# PEOPLE



# human development interdependence

