Meaning generation for animals, humans and artificial agents.
An evolutionary perspective on the philosophy of information

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Abstract:

Meanings are present everywhere in our environment and within ourselves. But these meanings do not exist by themselves. They are associated to information and have to be created, to be generated by agents. The Meaning Generator System (MGS) has been developed to model meaning generation in agents following a system approach in an evolutionary perspective. The agents can be natural or artificial. The MGS generates meaningful information (a meaning) when it receives information that has a connection with an internal constraint to which the agent is submitted. The generated meaning is to be used by the agent to implement actions aimed at satisfying the constraint. We propose here to highlight some characteristics of the MGS that could be related to items of philosophy of information.

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1) Information and Meaning. Meaning generation   (https://philpapers.org/rec/MENIAM-2)

   * **Meanings do not exist by themselves.**

   * **Meanings are meaningful information generated by agents submitted to constraints:**

     - **Stay alive**

     - **Look for happiness**

     - **Limit anxiety**

     - **Valorize ego**

     - **Avoid obstcle**
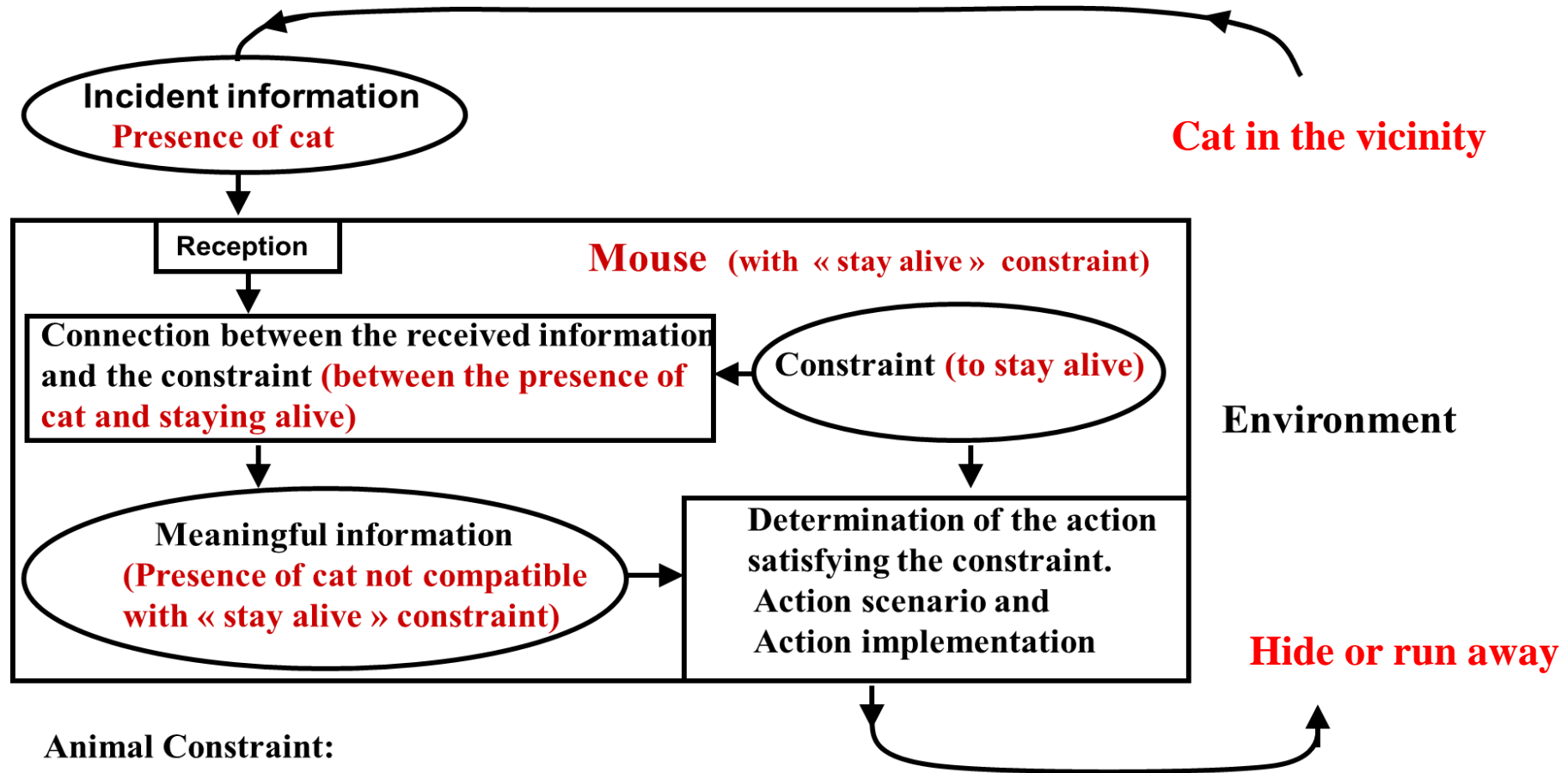
     - **….**

   * **Meanings are agent dependant.**

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2) Meaning generation for animal life.

(https://philpapers.org/rec/MENCOI)

Meaning Generation (mouse seeing a cat)

Animal Constraint:
- **Stay alive (individual & species)**
- **Live group life**

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3) MGS as a system for animals, humans and AAs   (https://philpapers.org/rec/MENCOI)
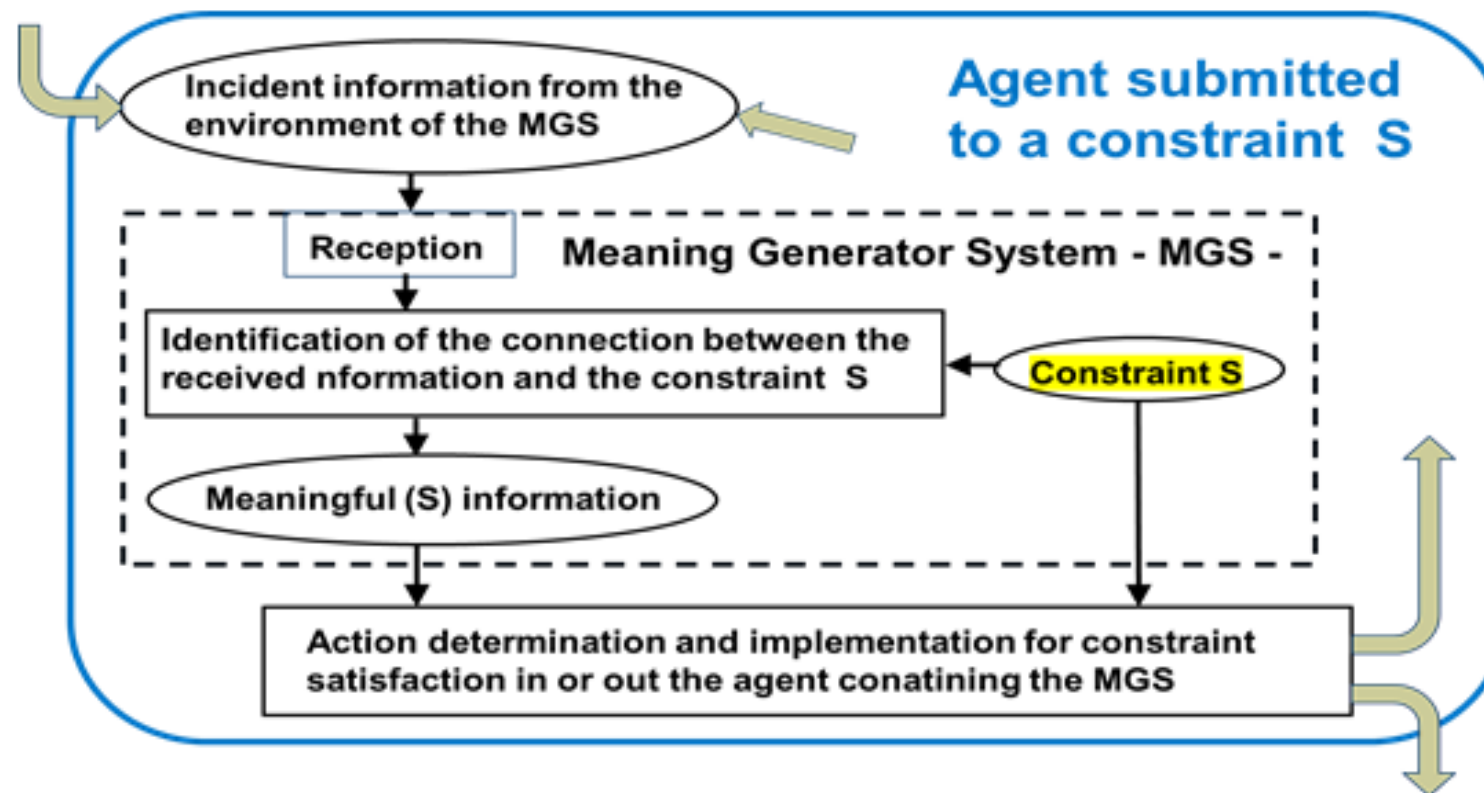
MGS: System approach

Animal constraints :
 (Intrinsic)
 - *Stay alive (individual & species)*
 - *Live group life*

Human constraints:
 (Intrinsic)
 - *Limit anxiety*
 - *Look for happiness*
 - *Valorize ego, ...*

Artificial Agent constraints:
 (Derived)
 - *As programmed*

* Generated meaning (meaningful information):

 - Connection between received information and constraint.

 - Leads to action implementation for constraint satisfaction.
 (action: physical, biological, mental. Can be in or out of agent).   C. M.

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4) Characteristics of the MGS

* MGS => What the meaning is and what the meaning is for.

* MGS: system approach & evolutionary usage. Agents: Animals, Humans, Artificial Agents.

* MGS: entry point for philosophy of mind.
  - Evolutionary scenario for self-consciousness   (https://philpapers.org/rec/MENPFA-3)

* MGS usable for AAs with constraints coming from human designer (derived constraints).

* MGS => Normativity, Teleology, Agency, Autonomy.
  - Normativity: constraint can be satisfired or not.
  - Teleology: constraint to be satisfied => final cause.
  - Agent: "entity submitted to internal constraints and capable of action to satisfy the constraints".
  - Autonomous agent as agent that can satisfy its constraints by its own.

* MGS => Meaningful representations as networks of meanings.

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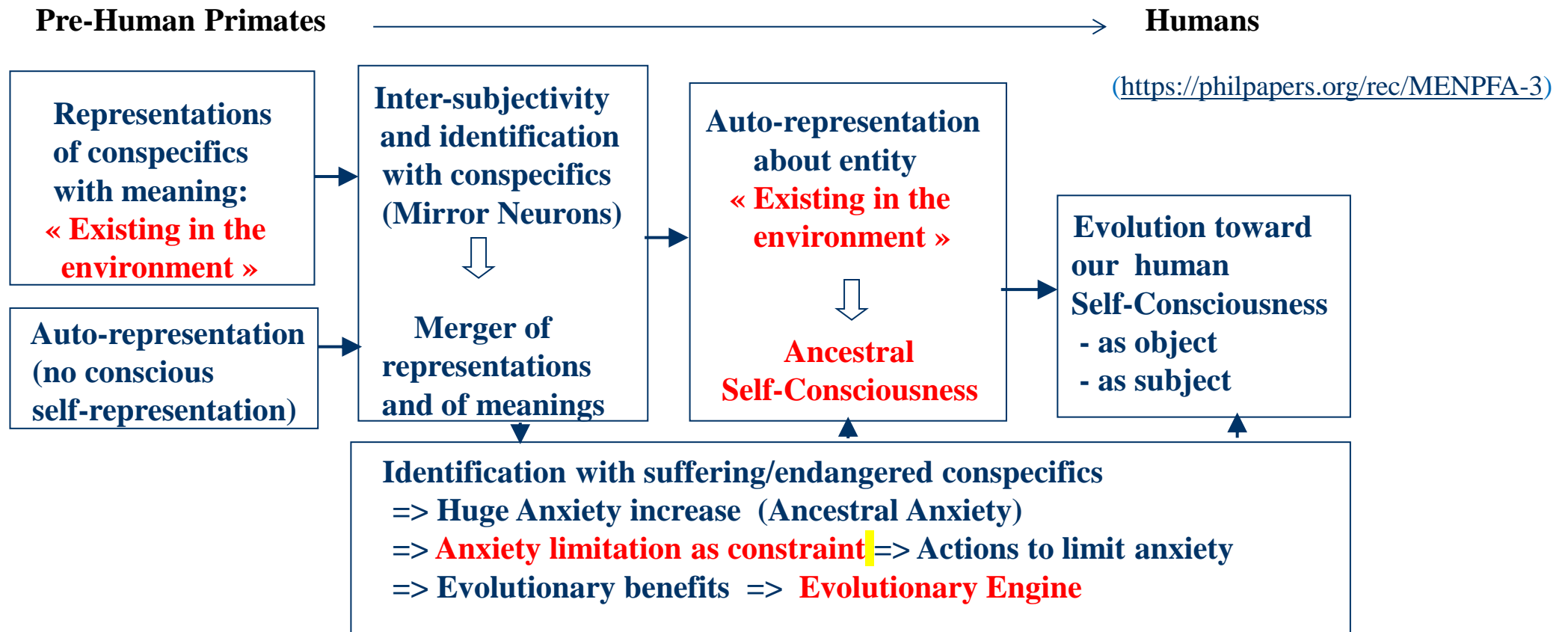An evolutionary perspective on the philosophy of information**

5) MGS and Evolution. Human Self-Consciousness and human constraints

Pre-Human Primates ⟶ Humans

(https://philpapers.org/rec/MENPFA-3)

Representations of conspecifics with meaning: « Existing in the environment »

Auto-representation (no conscious self-representation)

Inter-subjectivity and identification with conspecifics (Mirror Neurons)

Merger of representations and of meanings

Auto-representation about entity « Existing in the environment »

Ancestral Self-Consciousness

Evolution toward our human Self-Consciousness - as object - as subject

Identification with suffering/endangered conspecifics
=> Huge Anxiety increase (Ancestral Anxiety)
=> Anxiety limitation as constraint => Actions to limit anxiety
=> Evolutionary benefits => Evolutionary Engine

* Evolutionary scenario => Self-consciousness unconsciously interwoven with anxiety management.

* Unconscious anxiety limitation processes as key driver of human minds. Much more than assumed so far.

* Human Constraint: Limit anxiety, Look for hapiness, Valorise ego, …

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6) Meaning generation and artificial intelligence (TT, CRA, SGP) (https://philpapers.org/rec/MENTTC-2)

* MGS usable for Artificial Agents where constraints are derived from the designer.
- No animal/ human intrinsic (natural) constraints in today AAs.
- AAs contain meaning generation processes derived from the designer.

* MGS usable for Turing Test, Chinese Room Argument, Symbol Grounding Problem :
- To understand a question is to give it a meaning, to generate a meaning.
- Animal or human constraints cannot today be transferred to AAs.
  => With today AI:
      - TT is to fail
      - CRA is right
      - SGP has no solution

* Future (strong) AI by extension of animal/human constraints to AAs.
- Artificial Life as key for AI.

* Ethical concerns related to management of derived human constraints by AAs.

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7) Philosophy of Information and MGS

Philosophy of Information: semantic information as well formed, meaningful and truthful data.

Subject	Philosophy of Information	MGS
Meaning (meaningful information)	Semantic Information Mostly declarative type	Definition of meaningful information
Meaningless information	Exist only as data	Definition of meaningless information
Meaning generation & its evolution	Not explicited	One MGS for animals, humans and AAs (1)
Truthful data	Part of semantic information	Not explicited
Symbol Grounding Problem	Solutioned by communicating AAs	MGS => SGP has no solution (2)
Agency & autonomy	Agent as autonomous	Definitions for agency & autonomy (3)
Naturalization of meaning	Several perspectives (P16, P4, SGP)	By naturalization of constraints in MGS
Ethics	Computer ethics	Constraints in animals, humans and AAs

(1) MGS models meaning generation for animals, humans and AAs in an evolutionary perspective.
(2) MGS => usage of AAs introduces semantic componnet (derived meanings) => violation of the Zero semantic condition.
(3) Agent; entity submitted to internal constraints and capable of action to satisfy the constraint.
    Autonomous agent as capable to satisfy its constraint by its own.

* PI and MGS address different domains (meaning generation, data, evolution, truth, ...).
* Some incompatibilities (meaningless information, SGP, …).
* PI and MGS to exist as parallel threads with synergies to be determined.

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