General Natural Language Processing Translation Strategy and Simulation Modelling Application Example

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Content

Introduction

Introduction:

- Orgiton Theory → Units of Energy, Material and Information.
- Epistemology
- Cybernetics

Research Questions & Goal:

(1) General Method → Translate the natural language of every language in the world toward computational processing.

(2) Use mechanistic abstractions → Computational model that depicts functionally as a computational and informational model the directed meaning dimension of the underlying expressed language.

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Epistemology I

Epistemological model by Emma Ruttkamp, 2006: (i) intended system (ii) conceptual model (iii) axiomatic method.
$\rightarrow$ cybernetic or orgiton model:

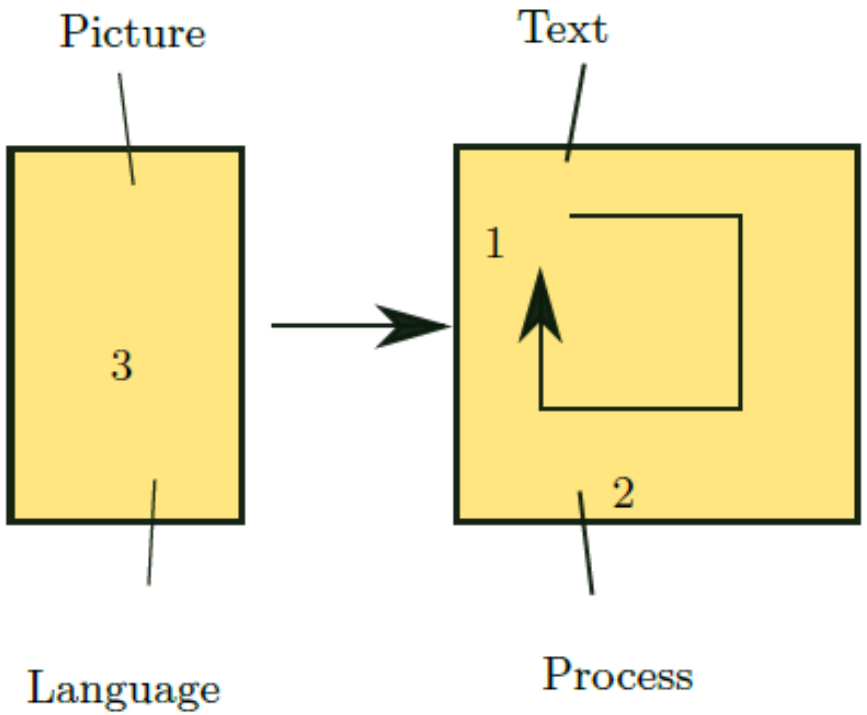

Figure 1: Knowledge-o-(I)

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Epistemology II

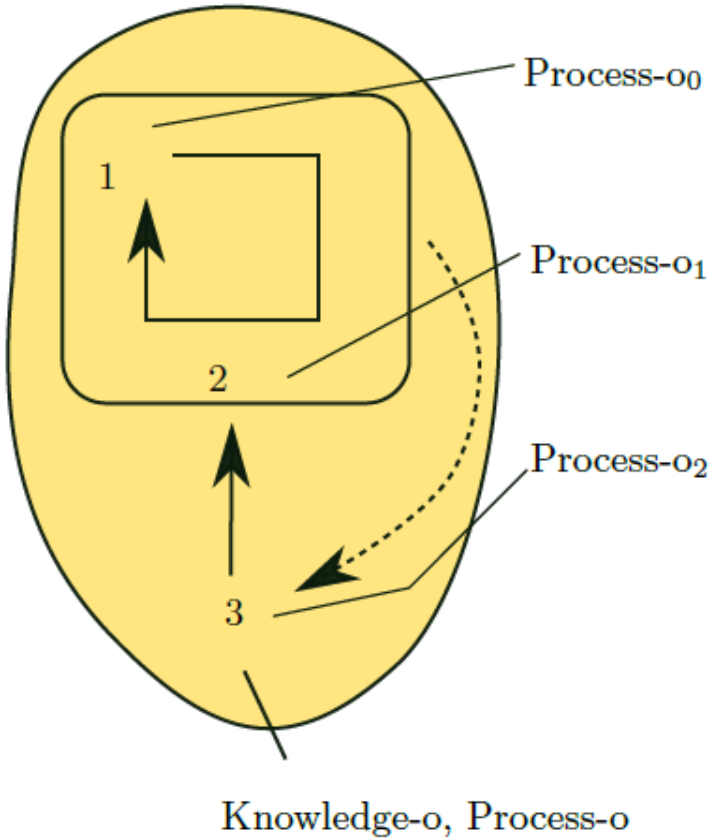

Figure 2: Knowledge-o (II)

Axioms-Base I

Axiom 1

A minimalistic set of the process description is the natural language axiomatisation.

Axiom 2

The sentences translate to a process performed by the symbolic language computational representational system.

Axioms-Application I

Axiom 3

Follow a path.

Axiom 4

A path is the connection of points in space.

Axiom 5

Follow is in terms of the track, copy the track and do it yourself.

Axioms-Application II

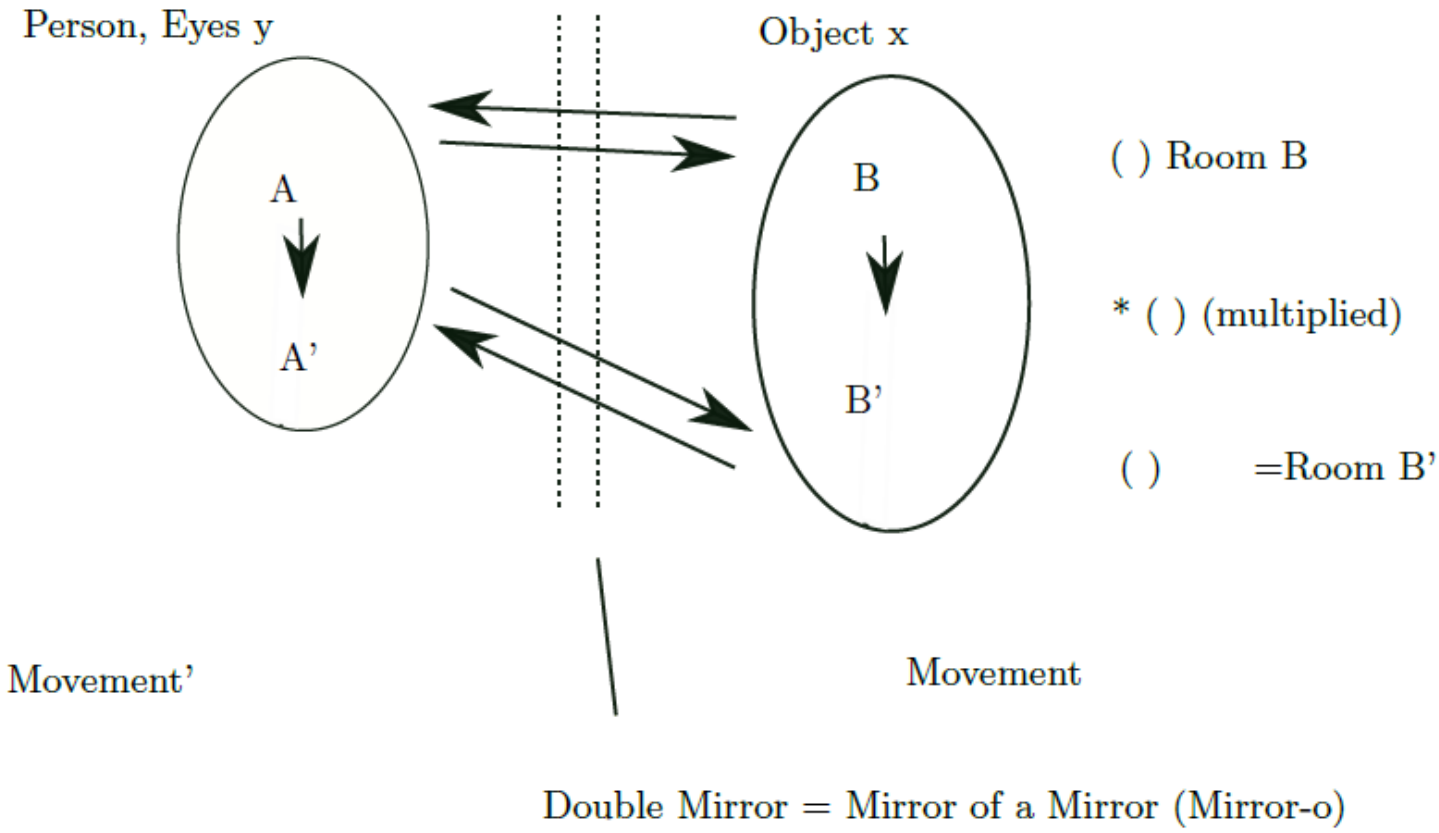

Figure 3: Mirror-o

Axioms-Application III

Axiom 6

We observe points in space.

Axioms-Application IV

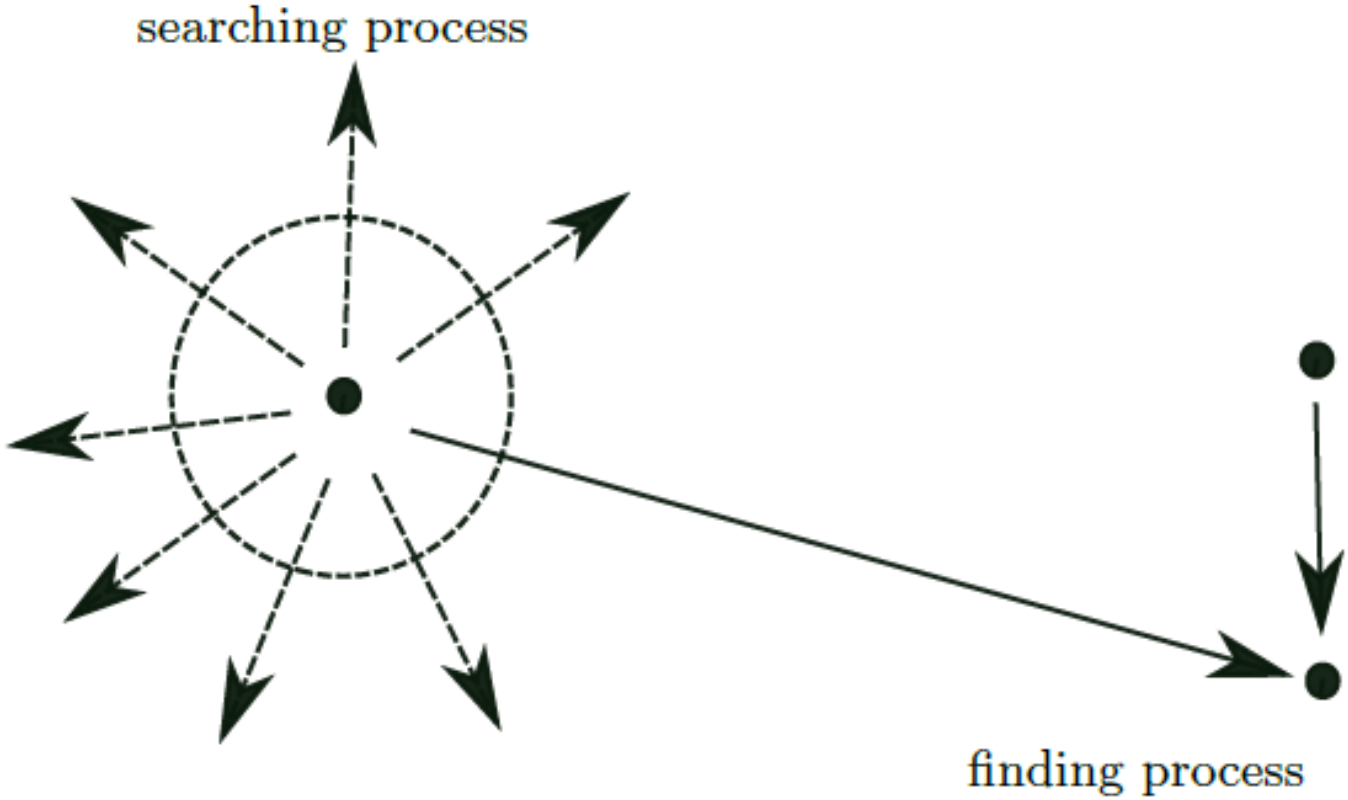

Figure 4: Search-Find-o

Conclusions and Outlook I

Summary and Conclusions:

- We have first given a basic axiom set for computationalisation of natural language (first two axioms).
- Four axioms as an example.

Recommendation for application of this model:

(1) Fully formulate problem.
(2) Divide process chain in languages or disciplines.
(3) Translate to neighbour problem or discipline.
(4) Close the loop.

Outlook:

- Translate natural language more directly into computing.

$\rightarrow$ Further develop automatisation process using increasingly complex symbols and machines networks.

Thank you cordially for your attention!

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PS.: The presentation can later also be found at:

http://www.dr-heiden.com/Vortraege.htm

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