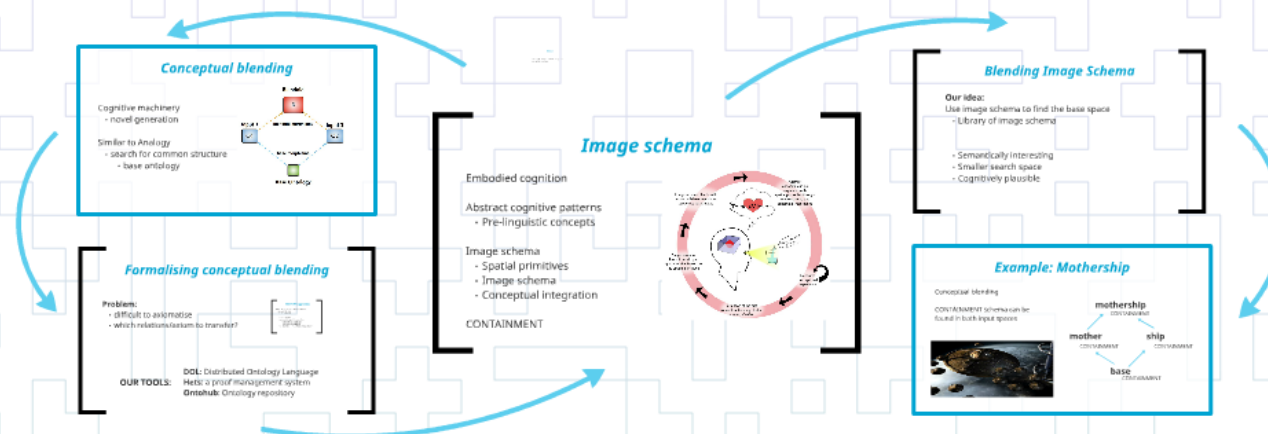


On the cognitive and logical role of image schema in conceptual blending



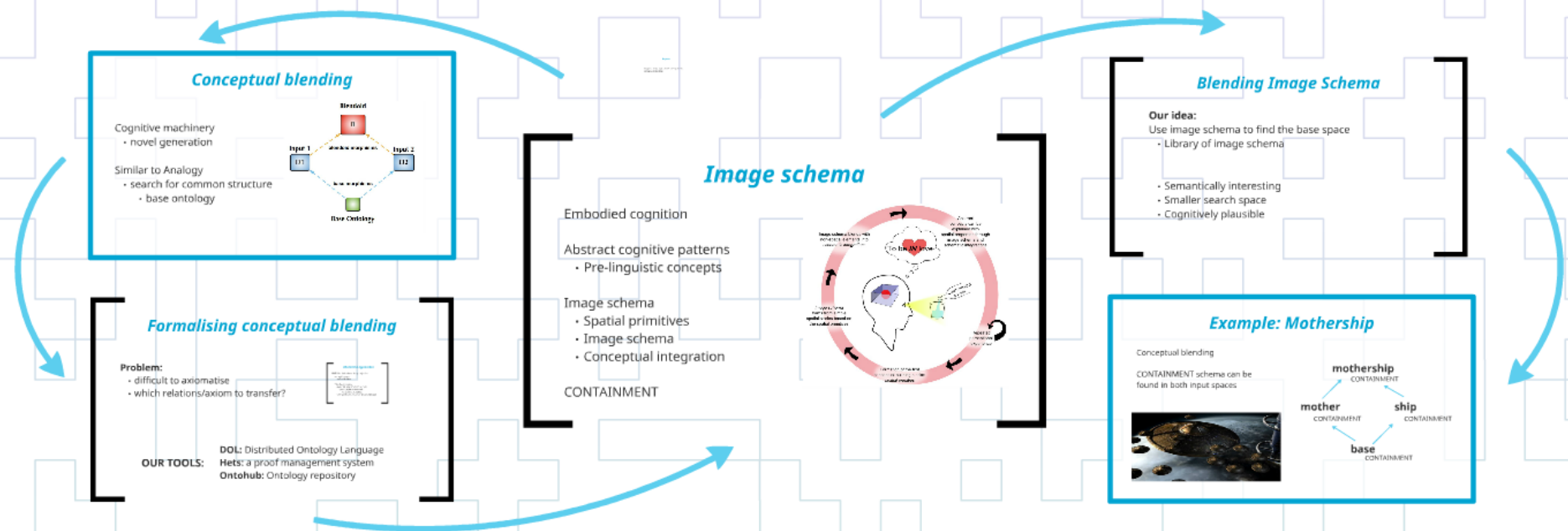
Maria Hedblom, Oliver Kutz, Fabian Neuhaus
19 November 2014 - Oberseminar

Thank you for your attention!

The project GOINVENT is funded by the Federal Republic of Germany and the state of North Rhine-Westphalia within the Special Collaborative Programme for Research of the European Commission, under EC-Open Data number 61000.



On the cognitive and logical role of image schema in conceptual blending



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Image schema

Embodied cognition

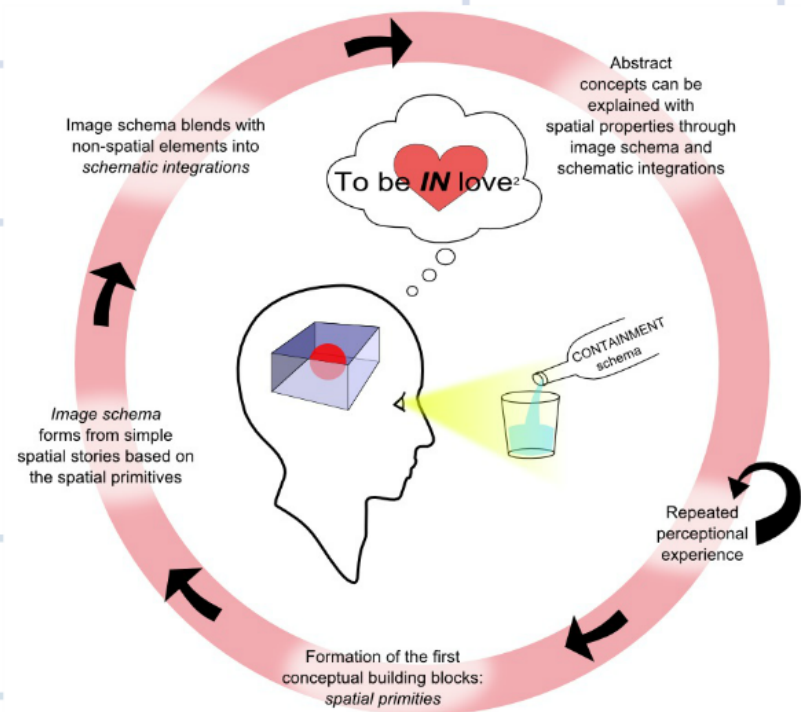
Abstract cognitive patterns

- Pre-linguistic concepts

Image schema

- Spatial primitives
- Image schema
- Conceptual integration

CONTAINMENT



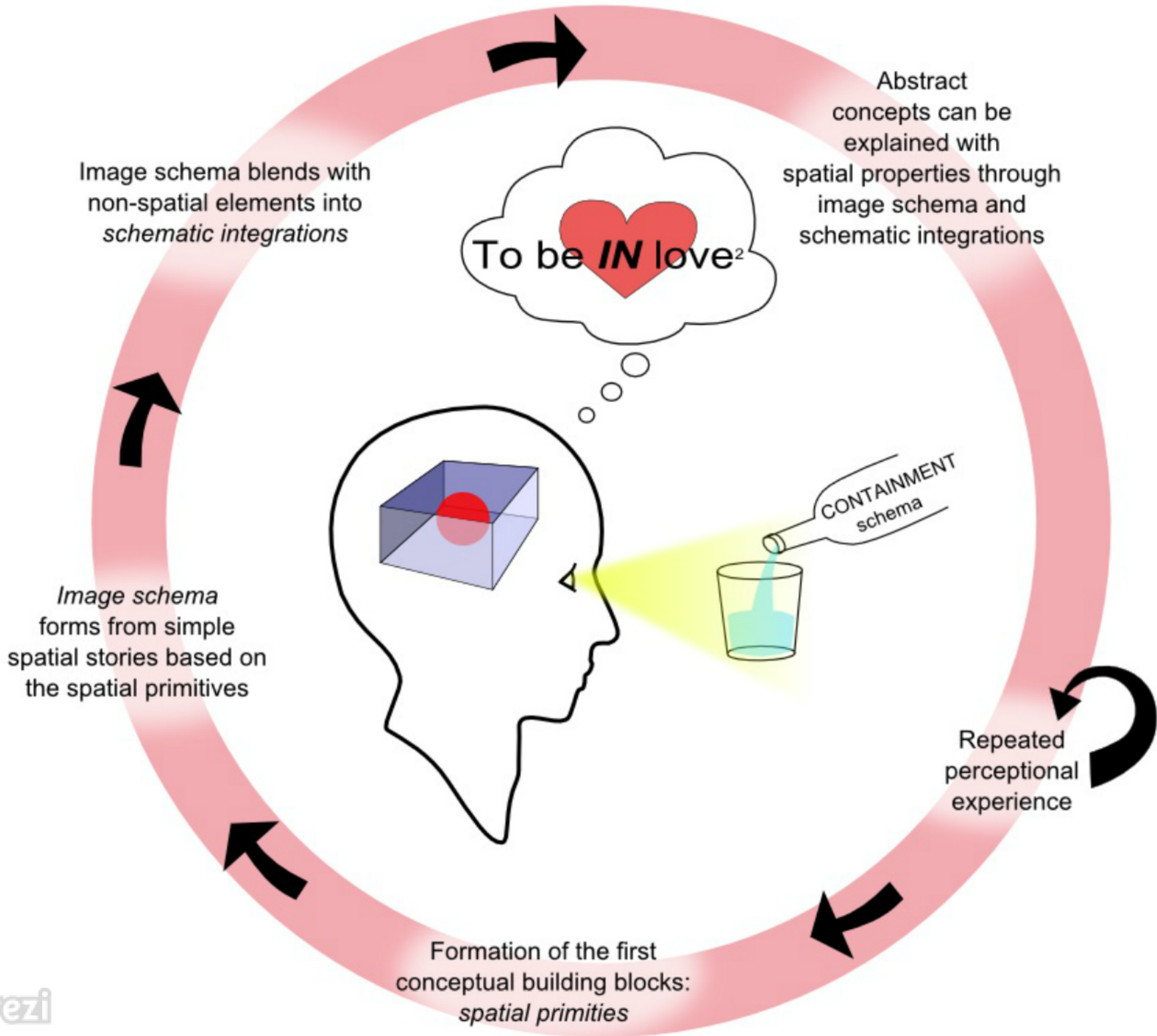


Image schema

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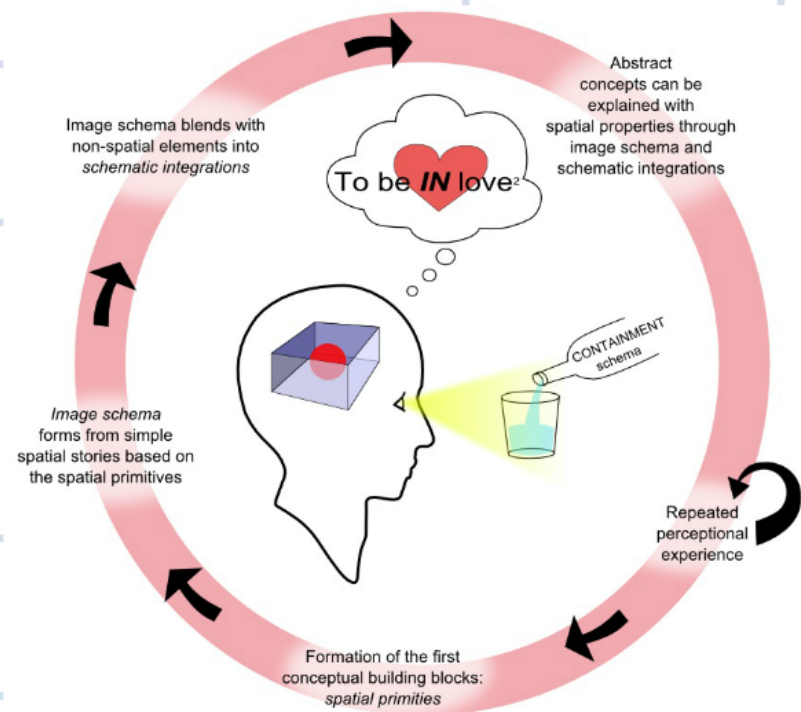
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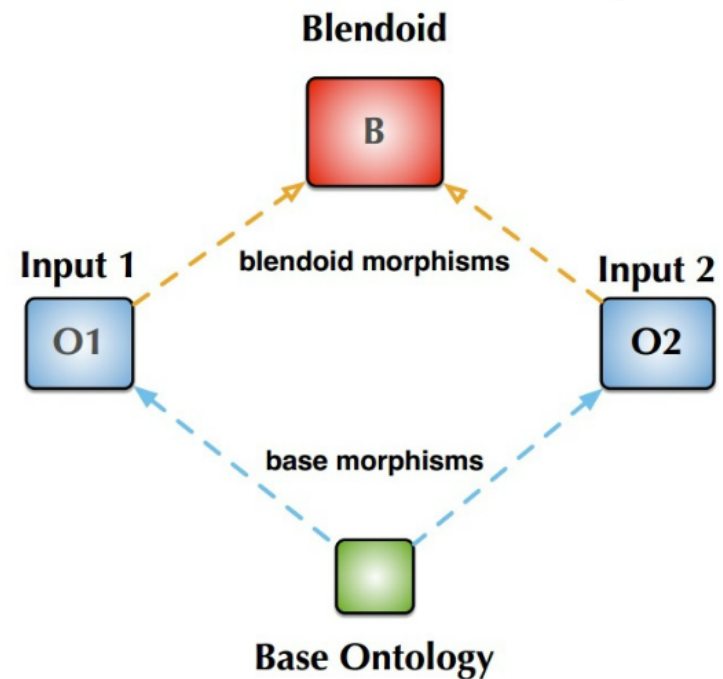
Conceptual blending

Cognitive machinery

- novel generation

Similar to Analogy

- search for common structure
- base ontology



Formalising conceptual blending

Problem:

- difficult to axiomatise
- which relations/axiom to transfer?

Alternative approaches

HDTP: Heuristic driven theory projection

Analogical engine
• anti-unification

Two disadvantages:

- potential large n° of anti-unifiers
- purely syntactic approach
= no cognitive relevance
- only works on richly axiomatised ontologies

OUR TOOLS:

DOL: Distributed Ontology Language

Hets: a proof management system

Ontohub: Ontology repository

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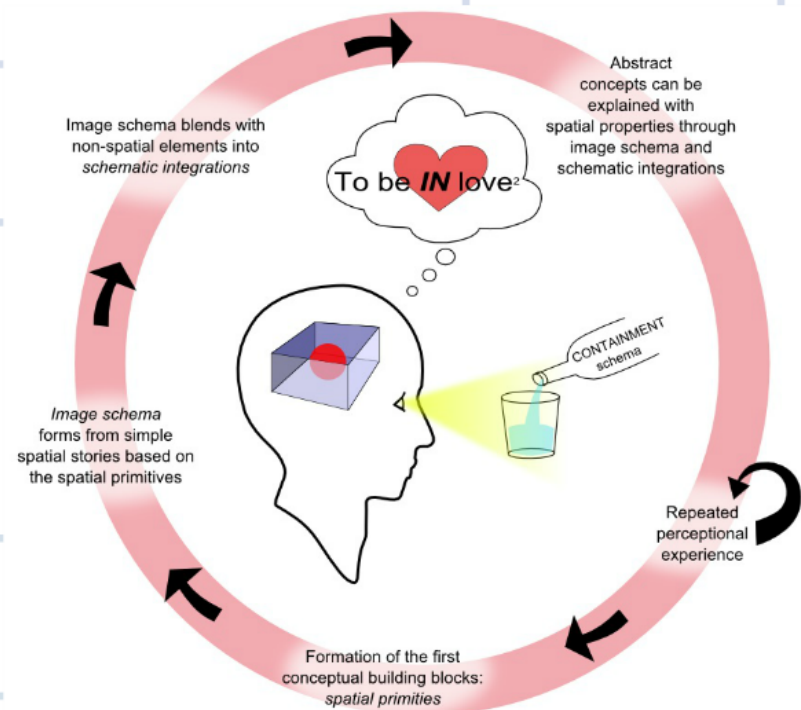
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CONTAINMENT





Blending Image Schema

Our idea:

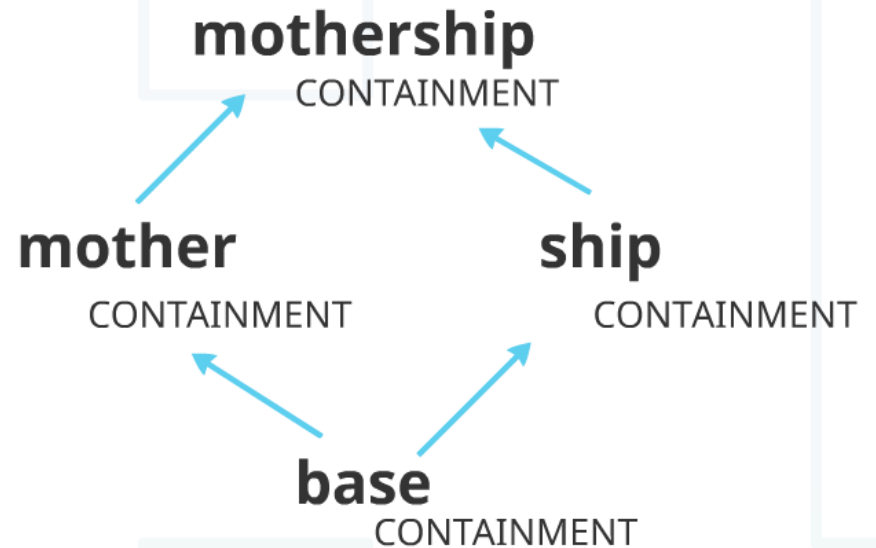
Use image schema to find the base space

- Library of image schema
- Semantically interesting
- Smaller search space
- Cognitively plausible

Example: Mothership

Conceptual blending

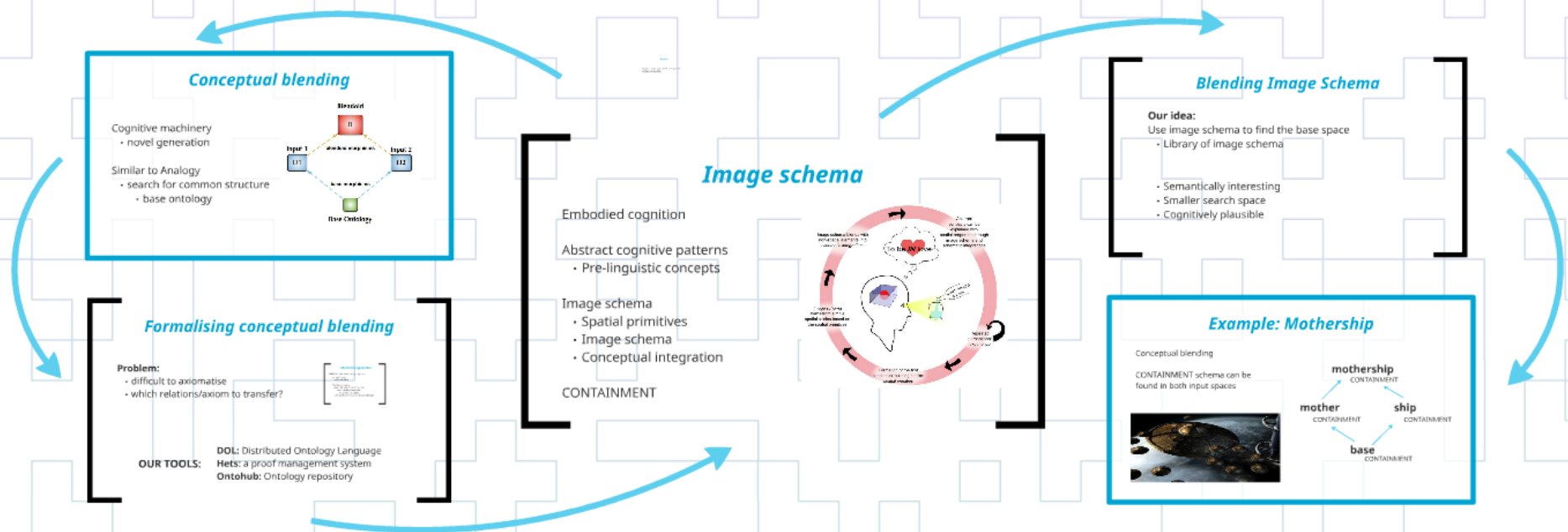
CONTAINMENT schema can be found in both input spaces



Purpose

Image schema to guide the base space in conceptual blending

On the cognitive and logical role of image schema in conceptual blending



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CO
INVENT

Concept
Invention
Theory

The logo features the word 'COINVENT' in a large, bold, dark grey sans-serif font. Above the 'CO' is a teal speech bubble containing a solid teal circle. To the right of the speech bubble, the words 'Concept', 'Invention', and 'Theory' are stacked vertically in a smaller, teal, sans-serif font.