

# Challenges for Ontological Engineering in the Humanities – A Case Study of Philosophy

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# Ontological engineer meets a humanist

- different, often conflicting, questions, methods, and answers
- pervasive (perverse?) use of ethnic languages
- diachronic and synchronic instability the technical terminology
- variability of terminology's meanings

# Ontological engineering as philosophy

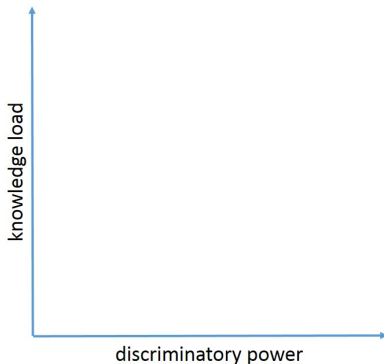
- origins [McCarthy, 1980]
- issues, e.g.,
  - do all material entities have temporal parts?
  - whether parthood is transitive?
  - etc.
- solutions

# Main engineering ontologies for philosophy

- 1 Indiana Philosophy Ontology
- 2 PhiloSurfical Ontology
- 3 Discovery project ontologies:
  - Scholarship Ontology
  - PhiloSpace Ontology
  - Wittgenstein Archive Ontology
  - Nietzsche Source Ontology
- 4 TheofPhilo thesaurus

# Main paradigms of ontological engineering for philosophy

- 1 discriminative vs non-discriminative
- 2 knowledge-laden vs knowledge-free



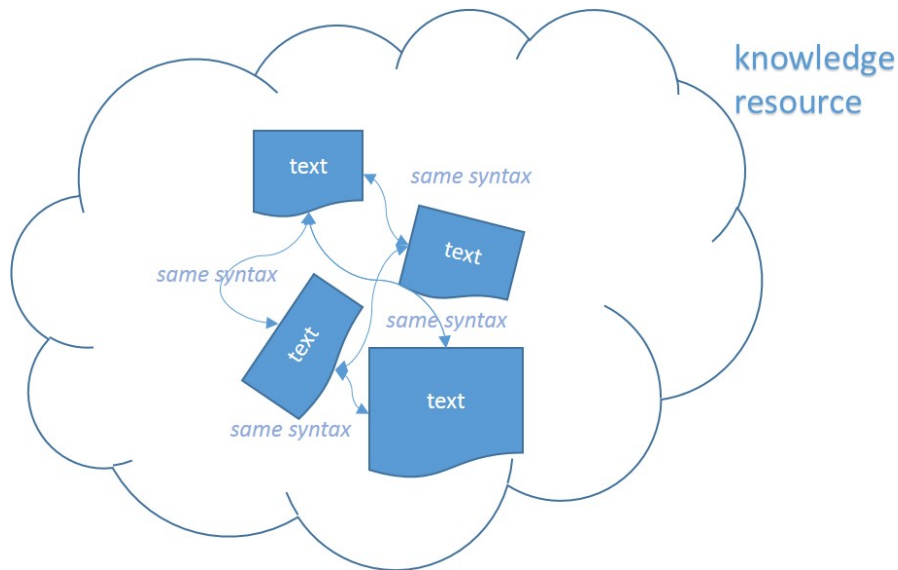
# Main paradigms of ontological engineering for philosophy – exemplification

	non-discriminative	discriminative
knowledge-free	Philospace	
knowledge-laden	InPhO	PhiloSurfical

# New paradigm – main distinctions

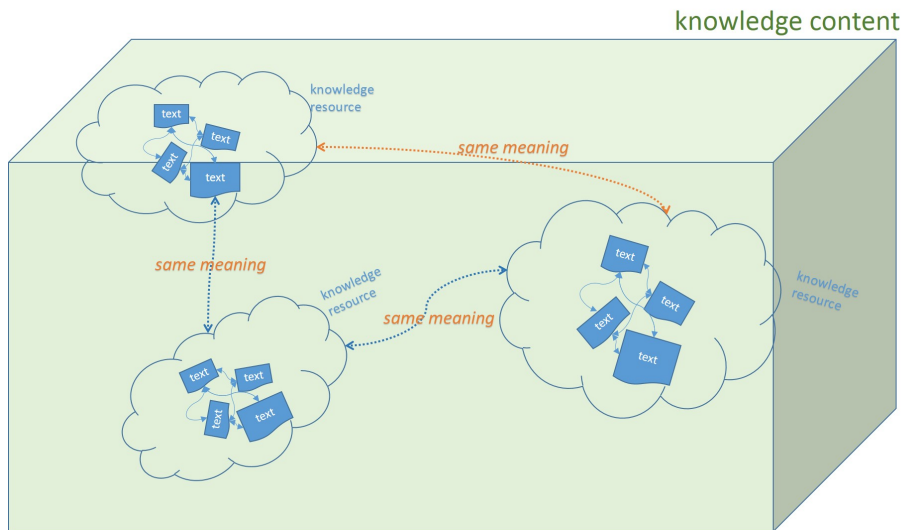
- knowledge objects
  - knowledge resource = information content entity from the Information Artefact Ontology
  - resource content = work in the Functional Requirements for Bibliographic Records
- interpretations
- agents

# Knowledge resources as abstractions over physical texts





# Knowledge contents as abstractions over knowledge resources



# New paradigm – resource contents (2)

- ① categories, e.g., processes, parthood, etc.
- ② propositions, e.g., parthood is transitive
- ③ propositional structures
  - theories, e.g., mereology
  - disciplines, e.g., ontology

# New paradigm – interpretations

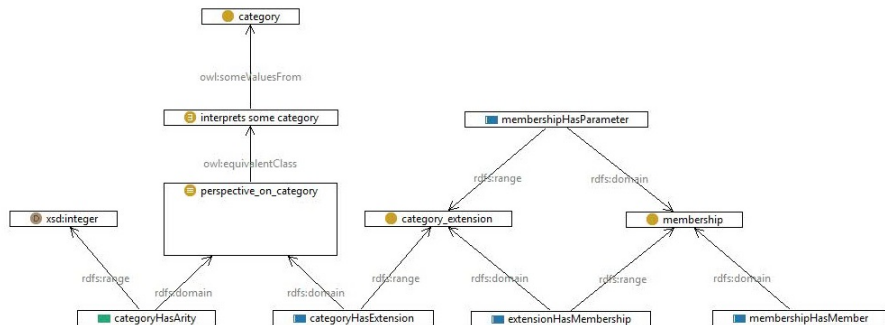
- extensional interpretations
  - simple
  - with parameters:
    - time objects
    - possible worlds (counterfactual situations)
    - ...
- intentional interpretations

- [www.metaontology.pl](http://www.metaontology.pl)
- an OWL 2 DL ontology (ALCRIQ(D)): 40 classes and 41 object properties
- minor extensions to the above design, e.g., adding the `ontological_mode_of_representation` class



<b>OntOfOnt</b>	<b>CIDOC CRM</b>	<b>IAO</b>
agent	owl:equivalentClass E39_Actor	rdfs:subClassOf BFO_0000030
category_extension	rdfs:subClassOf E70_Thing	rdfs:subClassOf BFO_0000141
membership	rdfs:subClassOf E70_Thing	rdfs:subClassOf BFO_0000141
resource_content	owl:equivalentClass E73_Information_Object	rdfs:subClassOf BFO_0000031
knowledge_resource	rdfs:subClassOf E84_Information_Carrier	owl:equivalentClass IAO_0000030

# OntOfOnt – reification patterns



- theoretical side
  - intensional interpretations
- applied side
  - (extensional) interpretation implementation



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McCarthy, J. (1980).

Circumscription - a form of Non-Monotonic Reasoning.

*Artificial Intelligence*, 13(1-2):27–39.