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Ontologies, Terminologies, Information Models & Knowledge Repositories in DEBUGIT

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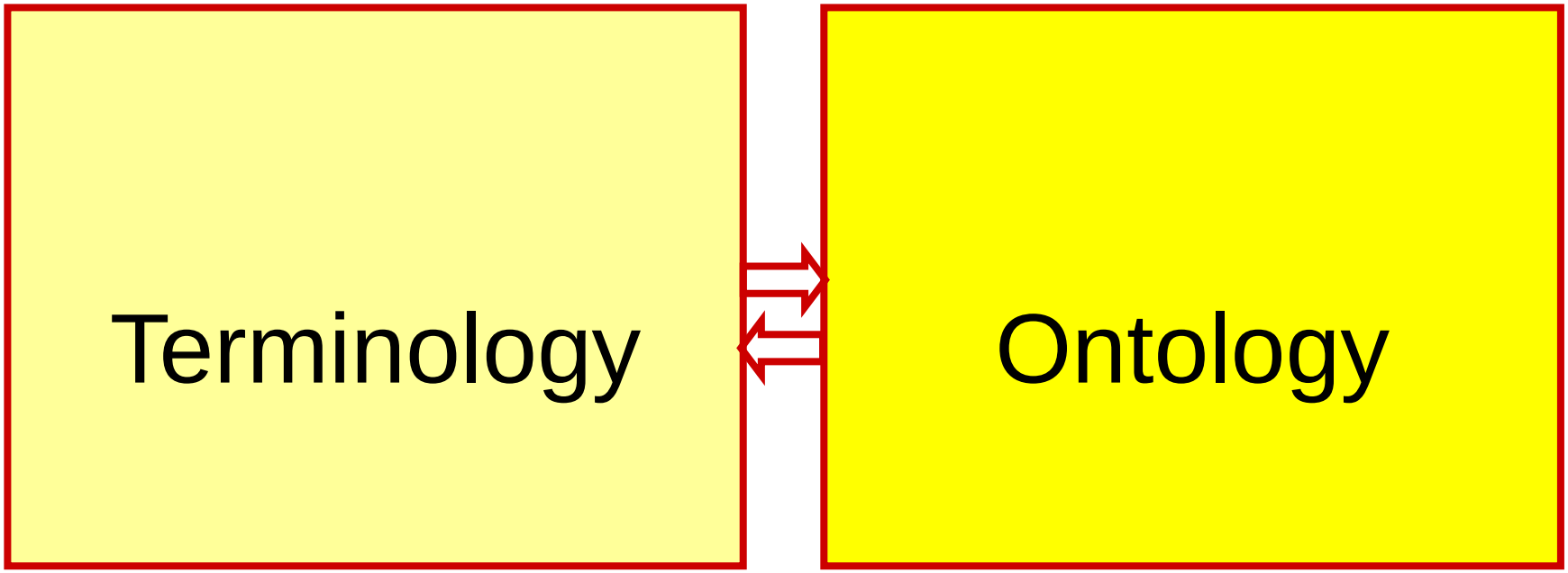
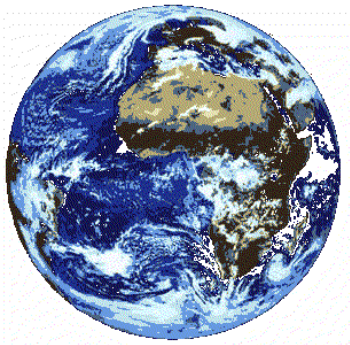

Terminology
Ontology

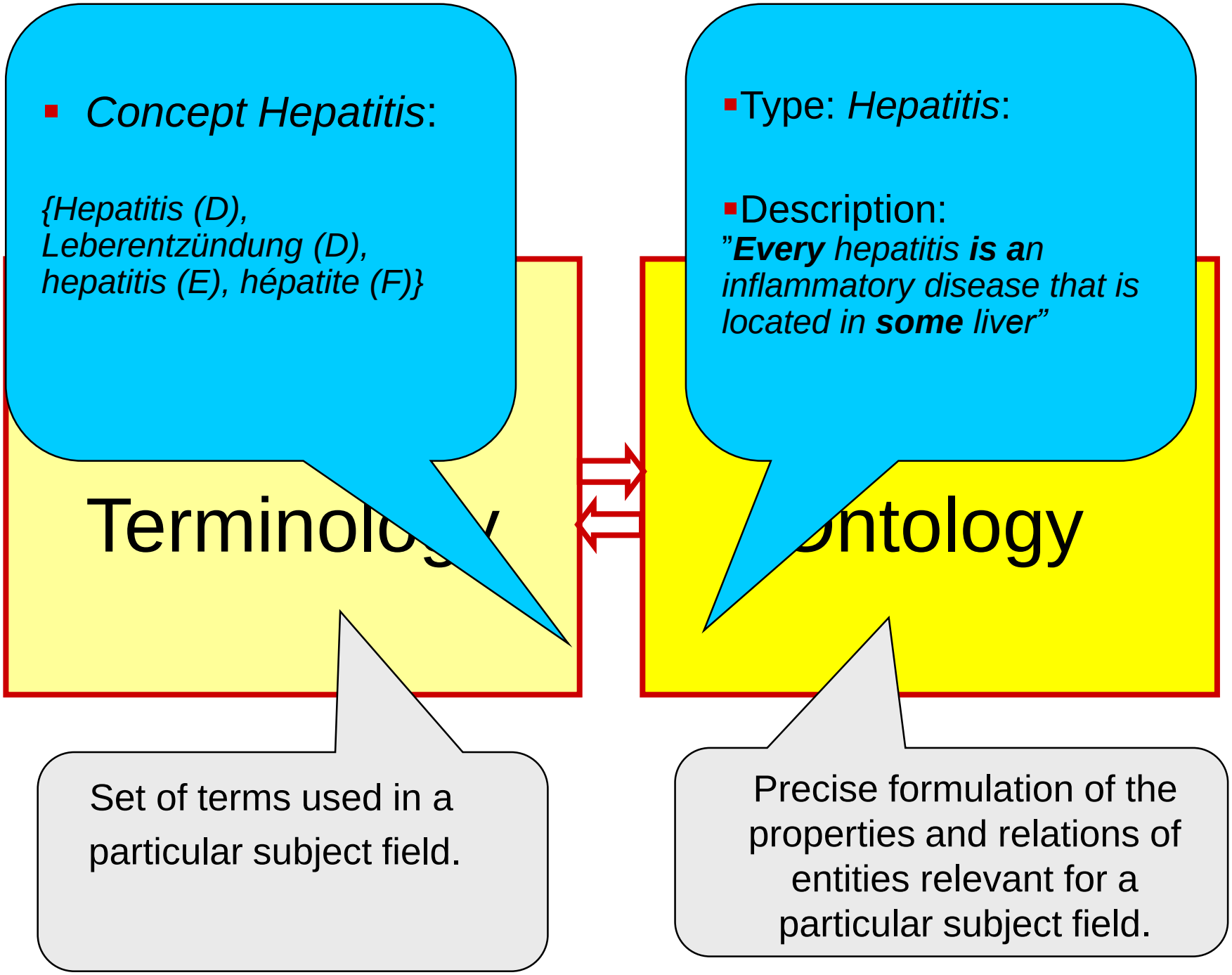


Terminology

Ontology

Set of terms used in a particular subject field.

Precise formulation of the properties and relations of entities relevant for a particular subject field.


Concept Hepatitis:
{Hepatitis (D), Leberentzündung (D), hepatitis (E), hépatite (F)}
Terminology
Type: Hepatitis:
Description:
"Every hepatitis is an inflammatory disease that is located in some liver"
Ontology
Set of terms used in a particular subject field.
Precise formulation of the properties and relations of entities relevant for a particular subject field.

Clinical Knowledge Repository

Generalized domain knowledge:

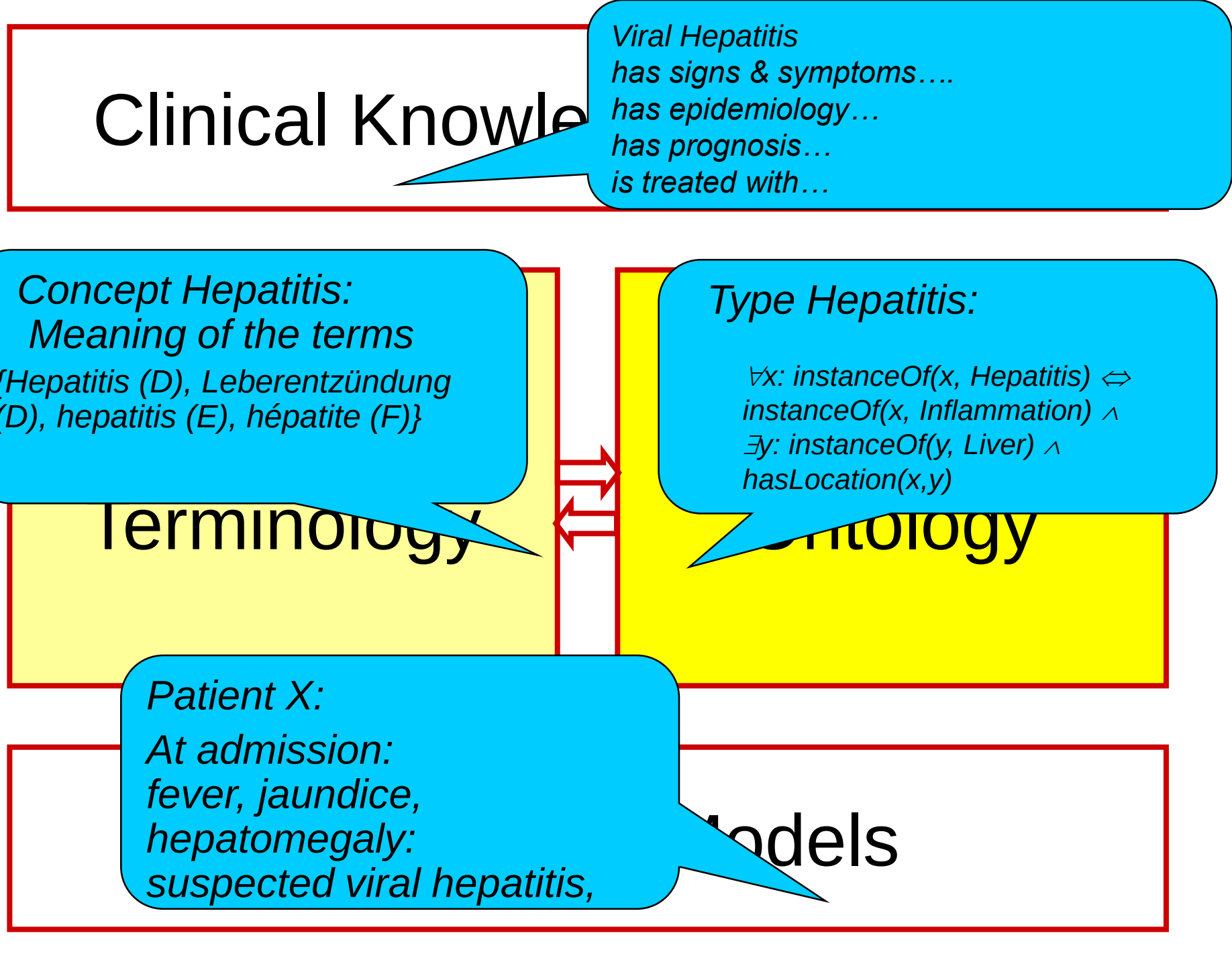
- Different degrees of evidence
- Controversial, hypothetical
- Probabilistic

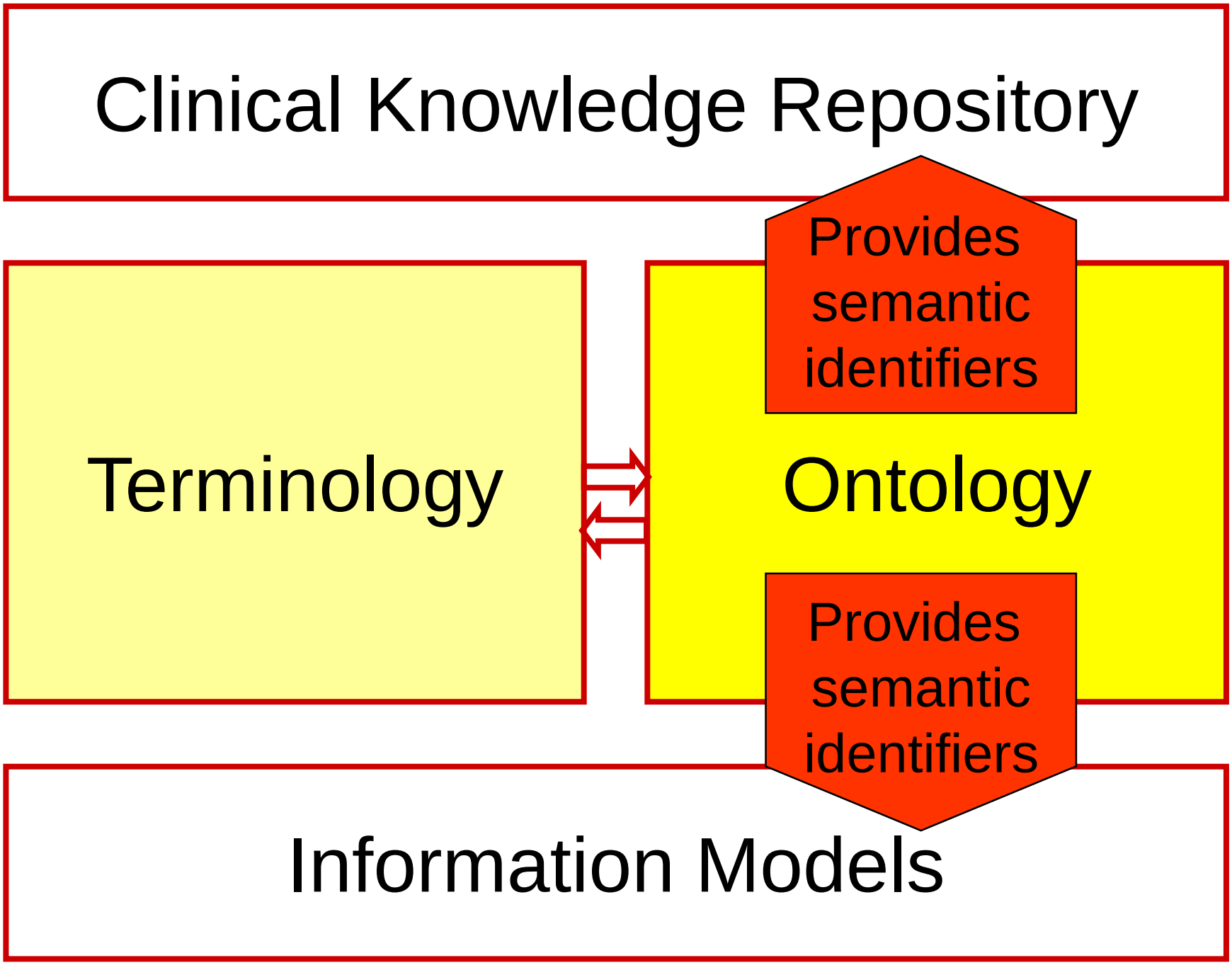
Terminology ⇨ Ontology

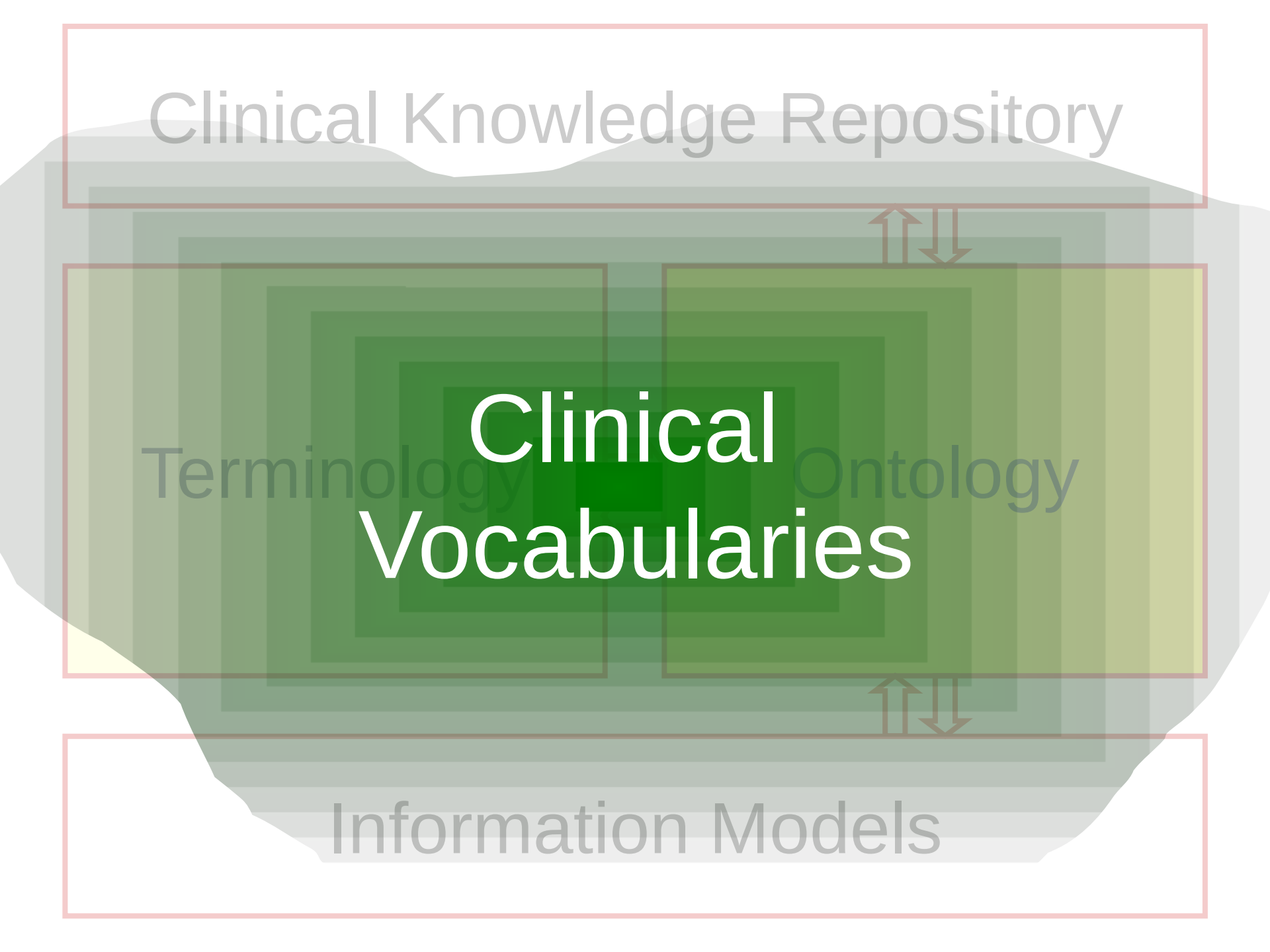
Repository of clinical data
of individual patients:

- observer / method dependent
- fuzzy, speculative, uncertain
- diagnostic hypotheses confirmed or ruled out

Information Models


Clinical Knowle
Viral Hepatitis
has signs & symptoms….
has epidemiology…
has prognosis…
is treated with…
Concept Hepatitis:
Meaning of the terms
{Hepatitis (D), Leberentzündung (D), hepatitis (E), hépatite (F)}
Terminology
Type Hepatitis:
∀x: instanceOf(x, Hepatitis) ⇔ instanceOf(x, Inflammation) ∧ ∃y: instanceOf(y, Liver) ∧ hasLocation(x,y)
ntology
Patient X:
At admission:
fever, jaundice,
hepatomegaly:
suspected viral hepatitis,
odels


Clinical Knowledge Repository
Provides semantic identifiers
Terminology
Ontology
Provides semantic identifiers
Information Models


Clinical Knowledge Repository
Terminology
Ontology
Clinical Vocabularies
Information Models

The role of the Ontology in DEBUGIT

- Shared language-independent semantic reference
- Used by Information Model and Knowledge repository
- Linked to multilingual terms where necessary
- First steps
  - Delimit conceptual scope
  - Create DEBUG-IT ontology re-using (and linking to) existing sources, especially SNOMED
  - Tools: Protégé
  - Representation language: OWL-DL