# KNOWLEDGE REPRESENTATION AND EXTRACTION

## Domain-related Ontologies:

Philosophy:

* Basic Formal Ontology <https://basic-formal-ontology.org/>
* DOLCE <http://www.loa.istc.cnr.it/wp-content/uploads/2021/11/DOLCE_FOUST_2022.pdf>
* PhilO <http://philosurfical.open.ac.uk/ontology/doc/>
* <https://www.researchgate.net/publication/220607689_Foundations_of_an_ontology_of_philosophy#fullTextFileContent>
* SUMO (Suggested Upper Merged Ontology) (interoperability)
* Formal Ontology for Information Systems (FOIS)

Resource: <https://philindex.org/>

Biology:

* Gene Ontology (GO)
* Plant Ontology (PO)
* Chemical Entities of Biological Interest (ChEBI)
* Phenotypic Quality Ontology (PATO)

Ecology:

* Environment Ontology (ENVO)
* Plant Environment Ontology (PECO)
* Trait Ontology (TO)
* Ecological Metadata Language (EML)
* Ocean Biogeographic Information System (OBIS) Schema

Literature:

* <https://drops.dagstuhl.de/opus/volltexte/2013/4149/pdf/p076-damiano.pdf>
* <https://drops.dagstuhl.de/opus/volltexte/2016/6711/pdf/OASIcs-CMN-2016-10.pdf>

## Theoretical string figures

* Gilles Deleuze and Felix Guattari 🡪 concept of rhizomes
* Karen Bard 🡪 posthuman approach and entanglements between humans and nonhumans
* Lynn Margulis 🡪 symbiotic relationships in the evolution of life on Earth
* Microbiology
* Indigenous scholars and activists

Braiding Sweetgrass" by Robin Wall Kimmerer

The work of Vandana Shiva

The Idle No More movement

* Latour 🡪 actor-network theory hybrid networks (rejection of dualism human/nature), (companion species), symmetric anthropology (sympoiesis), importance of storytelling and narrative in shaping the understanding of the world: construction of facts (tentacular thinking) **!=** scale H-micro (individual relationships) VS L-macro, political orientation H-feminist and anticolonialist perspectives for more equitable and sustainable future VS L-neutral or apolitical approach (?), language H-playful and poetic, neologisms VS L- dense and technical

## Tools

* **Book NLP:** to annotate entire books with linguistic categories (parts of speech, dependencies, named entities, WordNet supersenses), using CoreNLP . Also provides character name clustering, quotations and their speakers, some coreference resolution
* **word2vec** is a word embedding (vectorial representation) of words: given a corpus and some parameters, it builds an embedding model of corpus words; the model can be queried for the best associations or analogies between words

## Competency Questions

1. What are good practices to make kin?
2. What are the stories of sympoiesis told in the book?
3. What are the events that take place in the timescape Anthropocene?
4. What are the events that take place in the timescape Chthulucene?
5. What ecosystems are mentioned as endangered?
6. What are the neologism Donna Haraway mints and what is their meaning?
7. From what perspective is the story of x narrated?
8. In what context did the sympoiesis between x, y, z? What was the consequence of that? Why was that necessary?
9. What are different types of SF?
10. Who is the most quoted person in the book?
11. What are the three most relevant theoretic domains in Haraway’s narration?
12. What are the fictional stories invoked to rethink reality?
13. What is the book written by Anna Tsing that informed Haraway’s thinking
14. What are examples of Science-Art worldings for staying with the trouble?
15. Who practices tentacular thinking?

## Expected answers

## To do:

1. Build website for presentation
2. Parse text Knowledge Extraction with **BookNLP**
3. Trovare entities, cooccurrence of entities in events
4. Events recognition
5. Speaker recognition
6. Parse with **FRED** to explore hehehe
7. Refine CQ + define Expected answers
8. Build Ontolgy in protégé
9. Create RDF to create graph + entity linking
10. Formalize CQ in SPARQL query to test the ontology and knowledge graph
11. Geolocalize events and entities in a map and connect them?