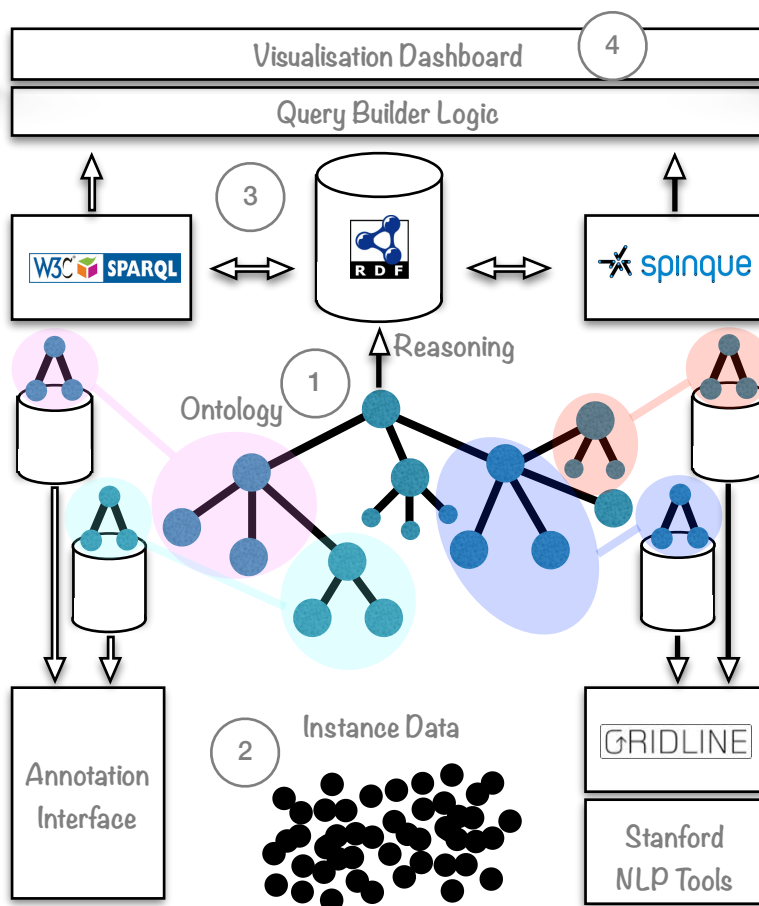


TimeCapsule

W. Klein², P. van den Hooff², M. Bron¹, F. Wiering¹, T. Pieters²
(1) Information and Computing Sciences, Utrecht University; (2) Freudenthal, Utrecht University

Goals

- Harmonisation of heterogeneous data sources relevant to historians studying the history of pharmacology
- Development of representation formats and semantic search algorithms allowing time and geography scoped views on data, i.e., time capsules
- Visualisation tools allowing historians to study trajectories of pharmacological knowledge



The Data

- Thesaurus of historical drug components
- Chronologisch woordenboek: ancestry of Dutch words
- PLAND: PLAntennamen in Nederlandse Dialecten
- BRAHMS: Botanical Research And Herbarium Management System
- Economic Botany Database
 - RADAR: distribution and occurrence of plants in the past
 - Monumenten register
- Erfgoedthesaurus: top thesaurus for CH
- Natuurbeelden: images of Dutch flora and fauna

1. Ontology Development



- Determine modelling requirements: a case study of the historical uses of Peruvian bark
- Identify suitable ontologies for reuse and extend these where necessary
- Formalise data models of provided data sets and map these models to our ontology

3. Query Builder Logic

- Allow users to build sophisticated queries that select particular time slices with respect to a topic as well as allow keyword search
- Under the hood: each instance datapoint is associated with a start and end point as well as other instances through relations specified in the ontology
- Develop scalable semantic search algorithms that select contextual information based on relations between instances and the user provided topic

2. Data Entry and Processing

- Populate ontology with instances through ontology driven data integration of (semi) structured data
- Evaluate utility of NLP tools for automatic extraction of instances from free text data (e.g., books, letters)
- Develop an annotation interface for (semi automatic) annotation of instance data; customisable per use case
- Use annotation data as training data for NLP tools

4. Visualisation Dashboard

- Spatiotemporal visualisation of pharmaceutical knowledge trajectories
- Under the hood: sample time capsules; plot each on a map; string maps together as aggregation or time

Contact: <http://www.projects.science.uu.nl/TimeCapsule/>

m.m.bron@uu.nl
w.klein@uu.nl
p.c.vandehooff@uu.nl

This research is supported by NWO under project no. 314-99-111

