Hunting for Inconsistencies in Multilingual DBpedia with QAKiS

Elena Cabrio, Julien Cojan, Serena Villata, Fabien Gandon
INRIA Sophia Antipolis, I3S - France. {firstname.lastname}@inria.fr

Scenario

QAKiS: a system for Question Answering over linked data, that allows to query DBpedia multilingual chapters using natural language.

DBpedia multilingual chapters contain different information w.r.t. English version (e.g. more specificity on certain topics, and fill information gaps):

i) different results can be obtained for the same query
ii) the combination of these query results may lead to inconsistent information about the same topic.

To reconcile information obtained by distributed SPARQL endpoints, an argumentation-based module is integrated into QAKiS to reason over inconsistent information sets, and to provide a unique and motivated answer to the user.

Semantic relations and their mapping in argumentation

QAKIS ARGUMENTATION MODULE EVALUATION:
- English, French and German endpoints
- a priori confidence score assigned to the endpoints
- bipolar fuzzy labeling algorithm to calculate arguments’ acceptability
- 25/58 QALD-2 questions (at least two endpoints providing an answer)

EXPERIMENT 1:
Input: the answers obtained from the different DBpedia endpoints, manually creating the SPARQL query
Performances (F-meas.) argument identification: 0.97; relation assignment: 0.72.

EXPERIMENT 2:
Input: NL questions submitted to QAKiS
Performances (F-meas.) argument identification: 0.72; relation assignment: 0.55 (the argumentation module is biased by QAKiS mistakes)