

AceWiki: Controlled Natural Language for Semantic Wikis

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Introduction

- Semantic Wikis
 - Semantic Web meets Web 2.0
 - Community based knowledge acquisition
- Can we reproduce the **success of Wikipedia** for Semantic Wikis?
 - “Normal” users should be able to understand, modify, and extend the semantics
 - Natural language is familiar to everyone. RDF and OWL are not!

AceWiki approach

- Wiki articles in **controlled natural language**
- Authoring tool helps the user to create valid sentences
- Formal semantics is not acting behind the scenes, but is represented by the article texts

Attempto Controlled English (ACE)

- Developed at the University of Zurich
- Formal language with a **restricted English grammar**
- Interpretation rules
- ACE texts can be translated automatically and unambiguously into **first-order logic**
- ACE supports: quantification, negation, conditional sentences, modality, active & passive voice, singular & plural, relative clauses, conjunction & disjunction, anaphoric references, pronouns, variables, commands, queries, macros, arithmetics

AceWiki

<http://attempto.ifi.uzh.ch/acewiki>

protein

Word

word class: noun
noun form: protein

Hierarchy

upward:
Every protein is a molecule . ▶

Individuals

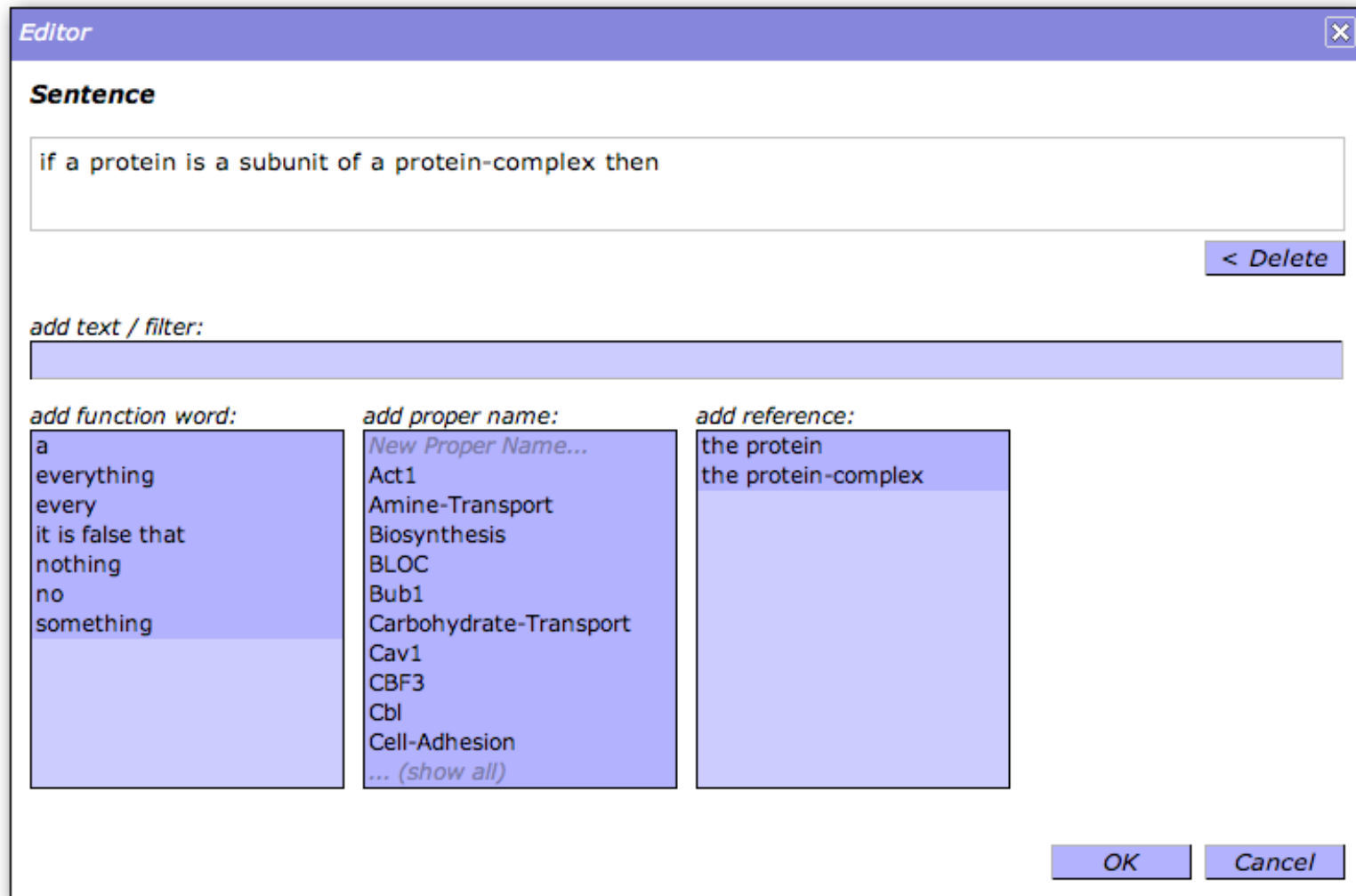
Act1 is a protein . ▶
Bub1 is a protein . ▶
Cav1 is a protein . ▶
Cbl is a protein . ▶
CHES1 is a protein . ▶
... [show all](#)

add...

every protein interacts-with a protein . ▶
Act1 is a protein that binds Cbl and that localizes-to Nucleus . ▶
if a protein is a isoform of GAR1 then the protein interacts-with every subunit of Myb . ▶

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Hypothesis

- Controlled Natural Languages like ACE are **suitable and sufficient** for representing formal knowledge in the Semantic Web in general, and in semantic wikis in particular.
- **Suitable**: Users prefer CNL over other formal languages
- **Sufficient**: No other formal language is needed (at least on the surface level)

Future Work

- Extend AceWiki
 - Undo facility / History
 - Persistent storage
 - Integrated reasoning
 - Rules
- Empirical user studies
 - Target groups:
 - scientists that are not computer-scientists
 - people with no academic background

Thank you for your attention!

Questions & Discussion