AceWiki: A Semantic Wiki Using
Controlled English

Tobias Kuhn

Department of Informatics and Institute of Computational Linguistics,
University of Zurich, Switzerland
tkuhn@ifi.uzh.ch
http://www.ifi.uzh.ch/cl/tkuhn

Abstract. We present AceWiki that shows how controlled English —
concretely Attempto Controlled English (ACE) — can give semantic
wikis an intuitive interface while supporting a high degree of expressivity.

Semantic wikis combine the philosophy of wikis with the concepts and techniques
of the Semantic Web. Semantic wikis seem to be a very promising approach to get
the domain experts better involved in the creation and maintenance of ontologies.
However, we see two major problems with the existing semantic wikis. First, most
of them have a very technical interface that is hard to understand and use for
untrained persons. Second, existing semantic wikis support only a relatively low
degree of expressivity (mostly just “subject predicate object”-structures) and do
not allow the users to assert complex axioms. In order to solve these problems,
we propose to use controlled natural language for semantic wikis.

Controlled natural languages are subsets of natural languages that are con-
trolled (in both syntax and semantics) in a way that removes or reduces the
ambiguity of the language. Recently, several controlled natural languages have
been proposed for the Semantic Web [5]. Attempto Controlled English (ACE)
[1] is one of them. While looking like natural English, it can be translated auto-
matically and unambiguously into logic (e.g. OWL). Evaluation has shown that
ACE is understood very well, very quickly, and without training [3].

We developed AceWiki [2] that is a semantic wiki that tries to solve the
identified problems of existing semantic wikis by using a subset of ACE as its
knowledge representation language. The goal of AceWiki is to show that semantic
wikis can be more natural and at the same time more expressive than existing
systems. Figure 1 shows a screenshot of the AceWiki interface. Evaluation has
shown that untrained people are able to use AceWiki [2].

AceWiki supports a wide range of English constructs: nouns, proper names,
verbs, adjectives, plurals, passive voice, pronouns, relative phrases, disjunction,
quantifiers, negation, cardinality restrictions, anaphoric references, and more.
In order to enable the easy creation of ACE sentences, users are supported by
an intelligent predictive text editor [4] that is able to look ahead and to show
the possible words and phrases to continue the sentence. Furthermore, AceWiki
seamlessly integrates a reasoner that gives feedback to the users, ensures the
Fig. 1. This is the AceWiki interface. Articles consist of declarative ACE sentences and ACE questions (in black) and of unrestricted natural language comments (in gray).

consistency of the ontology, shows its semantic structure, and answers queries that are formulated as ACE questions.

In general, AceWiki shows how controlled natural language can bring the Semantic Web closer to its end users.

References