

# Enriching Wordnets with New Relations and with Event and Argument Structures<sup>\*</sup>

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**Abstract.** This paper argues that wordnets, being concept-based computational lexica, should include information on event and argument structures. This general approach is relevant both for allowing computational grammars to cope with a number of different lexical semantics phenomena, as well as for enabling inference applications to obtain finer-grained results. We also propose new relations in order to adequately model non explicit information and cross-part-of-speech relations.

## 1 Introduction

Wordnets are electronic databases developed along with the same general lines of the so-called Princeton WordNet, an electronic database of English [1,2] containing nouns, verbs, adjectives, and adverbs. This database is structured as a network of relations between *synsets* (a set of roughly synonymous word forms). Several other wordnets have since been developed for many other languages and the number of relations adopted by the system has been enlarged (see for instance EuroWordNet [3]). In this paper we will show how wordnets can be integrated with a finer-grained lexical description framework in order to deal with various complex lexical semantics phenomena in a general and systematic way. Such an extension can be used both for deep lexical semantics analysis in computational grammars, and for a finer-grained linguistic knowledge-base in inference and question answering systems.

In Section 2 we will discuss the hyponymy/hypernymy relation. Following [4] we propose augmenting wordnet synset nodes with rich lexical-semantics descriptions which allow to explicitly capture the semantic inheritance patterns between hyponyms and hypernyms. We discuss some technical issues concerning this approach and provide a more general alternative view of semantic compatibility. Section 3 is dedicated to the verbal lexicon, focusing on argument

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