

## Towards a Representation of Verbal Semantics -- An Approach Based on Near-Synonyms

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### Abstract

In this paper we propose using the distributional differences in the syntactic patterns of near-synonyms to deduce the relevant components of verb meaning. Our method involves determining the distributional differences in syntactic patterns, deducing the semantic features from the syntactic phenomena, and testing the semantic features in new syntactic frames. We determine the distributional differences in syntactic patterns through the following five steps: First, we search for all instances of the verb in the corpus. Second, we classify each of these instances into its type of syntactic function. Third, we classify each of these instances into its argument structure type. Fourth, we determine the aspectual type that is associated with each verb. Lastly, we determine each verb's sentential type. Once the distributional differences have been determined, then the relevant semantic features are postulated. Our goal is to tease out the lexical semantic features as the explanation, and as the motivation of the syntactic contrasts.

### 1. Introduction

Radical Lexicalism maintains that all grammatical behaviors are manifestations of lexical features [Karttunen 1986]. Since most lexical attributes are semantic and/or conceptual in nature, taking this lexicon-driven approach to language means that many syntactic properties can be predicted from lexical semantic attributes [Jackendoff 1976, Levin 1985, Dowty 1991, Pustejovsky 1993]. In terms of Natural Language Processing (NLP), surface syntactic structures can be systematically predicted from their lexical semantic representation. From this perspective, the automatic acquisition of lexical knowledge for NLP may be possible, since the relation between syntactic patterns and lexical semantics is predictable to some extent. Dorr & Jones [1996], for example, demonstrate that semantic information can be derived from syntactic cues when the syntactic cues are first divided into distinct groupings that correlate with different word senses.

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