**Indrawan, M., & Loke, S. (2008). The impact of ontology on the performance of information retrieval: a case of WordNet. *International Journal of Information Technology and Web Engineering,* 3(1), 24-37.**

Keywords: Information retrieval, ontology, WordNet, query expansion, kernel words, semantic distance, semantic indexing

Indrawan and Loke explore the research problems in information retrieval and propose a WordNet-based model to solve the problems. The authors discuss the specific problem of the limitation of an information retrieval system. These systems are built to help users find the documents that are relevant to their information need which is represented by queries posted to the system. In most information retrieval systems, the queries are represented as a list of keywords. While some systems may allow users to submit a natural language query, in most cases, the natural language query is processed through an indexing process resulting in a set of indexed terms. Using keywords or indexed terms for the retrieval limits the set of retrieved documents to those with the matching terms. Using the keywords or indexed terms it is possible that a document that does not contain any matching term to the query to be relevant. It is possible that the document uses synonyms for the indexed term. In order to avoid this problem, it is recommended adding similar terms such as synonyms or other terms that are relevant to the document, such as hypernyms. In the early 1990s Princeton University built an English lexical referencing system called WordNet. Since its introduction, many researchers have used this lexical system for different purposes, such as multimedia retrieval, text summarization, and automatic creation of domain-based ontology. The main construct of WordNet as a lexical system is the synonym set or synset. The synsets are divided into four major speech categories of noun, verb, adjective, and adverb. WordNet has been used to improve the performance of information retrieval systems by way of query expansion, semantic distance measure, and semantic indexing. Prior researchers had determined that the recall and precision of the retrieval decreased with inclusion of WordNet while other researchers had perceived an improvement. The authors decided to further investigate since they perceived even further improvement could be applied. Once their investigation had concluded, Indrawan and Loke determined that the use of WordNet alone as an ontology to improve information retrieval performance is not appropriate. Due to the fact that WordNet contains mainly general English terms, domain-specific terms or proper names are not included. Also, relations between terms are limited to a single speech because it is impossible to find relation of an adjective and a noun in WordNet. The authors suggest that further research be done especially combining WordNet with other ontologies, such as ConceptNet, which is useful in finding more general words for expansion. WordNet can be used as the starting point, but it definitely needs to be combined with another type of ontology.