Antonymy in English and Swedish
psycholinguistic experiments

Carita Paradis
Lund University

Research objectives
In spite of its fundamental role in organizing and constraining the semantic development of languages’ vocabularies (Cruse 1986, Fellbaum 1998, Murphy 2003), little empirical research has been conducted on antonymy, either using experimental techniques or corpus-based methodologies (Muehleisen 1997, Willners 2001, Jones 2002). The aim of this project is to design and launch elicitation experiments concerning canonicity of antonym pairs across English and Swedish in order to find out whether canonicity is a universal property of opposed concepts or idiosyncratic lexicalisation and to develop standards and methods for cross-linguistic comparison of antonymy.

Antonymy is considered typical of the class of adjectives, e.g. good/bad - bra/dålig, big/small - stor/liten, but antonyms are found in most classes of words, e.g. give/take - ge/ta, boy/girl - pojke/flicka, in/out - in/out, much/little - mycket/lite. Language users have an intuitive feeling that the pairing of some antonyms is more natural than the pairing of others, but how can canonicity be objectively measured and is canonicity comparable across different languages? The hypothesis is that there is a scale of more and less canonical antonyms. For instance, good/bad - bra/dålig are thought of as highly canonical, while there are pairs that are antonyms only in certain contexts, e.g. grov/vit - blatant/white which are antonyms in the context of ‘lies’, but not otherwise, e.g. grov lögn/vit lögn - blatant lie/white lie. Morphologically derived antonyms such as verklig/overklig - real/unreal are expected to be more canonical than highly context dependent antonyms, but less canonical than word pairs such as good/bad - bra/dålig. It is well-known that there are cross-linguistic asymmetries with regard to some very common spatial adjectives, e.g. big,large,great/little,small - stor/liten.

While the notion of canonicity has repercussions for linguistic theories as well as for commercial lexicography, they have never been defined in any objective way. When researchers distinguish between canonical and non-canonical antonyms in psycholinguistic experiments or when lexicographers decide which relations to represent in their dictionaries or databases, they do so intuitively - often with strange results. For instance, unangry is given as opposite of angry in Princeton WordNet (Willners 2001) and the opposite of nice in Collins Cobuild Advanced Learner’s Dictionary (2003) is unpleasant, but the opposite of unpleasant is pleasant (Paradis et al. 2004). This is not only an unscientific means to classify antonyms, it is also over-simplified, as there is evidence (e.g., Herrmann et al. 1986) that canonicity is a scalar rather than absolute property. Antonym canonicity cannot be reduced to semantic tests because to some degree the linking of words in an antonym pair is arbitrary. For example, we see changing fashions in terms of ‘the’ opposite of style: is it content or substance (Jones
2002)? For that reason, a new test method for measuring canonicity using the world-wide web as a corpus and the antonymic discourse frames identified by Jones (2002) will be developed to be used as a basis for the psycholinguistic experiments (see below).

In sum, there are important theoretical outcomes of work on antonymy concerning the mental organization of the vocabulary. There are also important practical applications in language technology, in contrastive lexicology, in translation and in applied linguistics in the area of text composition and second language learning.

Methodology, hypotheses and research questions
The selection of lexical items will be be based on the results of the corpus investigations carried out by Willners (2001) and Jones (2002), i.e. antonym pairs that co-occur more often than chance in written discourse. In addition, a new method for measuring canonicity using the world-wide web as a corpus and the antonymic discourse frames identified by Jones (2002) will be developed as a basis for the psycholinguistic experiments. This method involves searching for antonyms in a series of discourse frames, for example fresh and ___ alike, neither fresh nor ___, not fresh but ___.

The degree of canonicity will be tested experimentally across groups of informants through elicitation tests. Each group will consist of 30 native speakers of English and 30 native speakers of Swedish. The psycholinguistic software E-Prime (http://www.pstnet.com/e-prime/), which is currently available in the Beta Lab at Lund University, will be used for the elicitation experiments. On the screen, the informants will be presented with lexical items out of context and lexical items in discourse frames, and they will be prompted to provide the (default) antonyms of the trigger items. The English informants will be presented with English words and the Swedish informants with Swedish words. The on-line experiments will consist of 40 test items and 40 fillers. The response time will be limited and automatically measured by the program.

The hypotheses are that there will be significant consensus across the informants in their choice of antonyms for the test items, (e.g. long as opposed to short) and there will be little consensus among the proposed antonyms among the fillers (e.g. hefty as opposed to ?, or tomato as opposed to ?). The assumed consensus concerning the choice of antonyms is taken to be an indication of the existence of canonical antonyms on the lexical level as well as on the semantic level. Little consensus will be taken as an indication of our ability construct ad hoc antonymic relations of opposed concepts at the semantic level. In either case, there will be an underlying representational antonymic structure in some content domain.

The questions central to this project are as follows. What are the more canonical antonymic word pairs? What are the more antonymic meaning structures? What are the semantic domains of the strongly canonical antonyms in the two languages? Are the semantic domains of the strongly canonical pairs across Swedish and English the same? Do Swedish and English informants evaluate the degree of canonicity of antonymic pairs in the same way? What meanings are shared by a given antonymic pair and what meanings are not shared? Is canonicity a universal property of opposed concepts or idiosyncratic lexicalisation in the two languages?
Research context

The result of the present project will form part of the basis for an international collaborative enterprise, *The UK-Sweden Group on Comparative Lexicology*, between Lund University and the Universities of Sussex and Central Lancashire in the United Kingdom. The network participants are Dr Caroline Willners and myself from Lund University, Dr Lynne Murphy from the University of Sussex, and Dr Steven Jones from the University of Central Lancashire. The collaborative work is currently not funded, but a proposal for a research grant for *Antonyms in the lexicon and in discourse: a cross-linguistic study* to cover travel costs for our British colleagues and funding for a part-time student clerical assistant (bilingual English/Swedish) will be submitted to the British Academy in October 2004.

Our particular area of shared interest within comparative lexicology is antonymy, which all participants have studied or are currently studying from different perspectives. Steven Jones has published a corpus-based monograph (Jones 2002) which introduces and quantifies the key discourse functions of antonymy in text. Lynne Murphy has published a book on semantic relations and the lexicon (Murphy 2003) and has examined antonym occurrence in childhood (Murphy 1998) and also together with Jones (Murphy & Jones forthcoming). Caroline Willners has conducted corpus-based studies of Swedish antonyms (Willners & Holtsberg 2001, Willners 2001), and, finally, I have studied binary and scalar antonymy in the area of adjectives and degree modifiers using corpora of adult and teenage speech (Paradis 1997, 2000, 2001, 2004). Paradis & Willners (2004) have also carried out judgement experiments on opposites and negation in Swedish.

*The UK-Sweden Group on Comparative Lexicology* began working together in February 2004. Since then we have presented two half-day seminars on research approaches and pilot work Caroline Willners and I hosted a two-day minisymposium and workshop on antonymy funded by Riksbanken on 2-3 February 2004 at Lund University and Lynne Murphy hosted two-day seminar at the University of Sussex on 16-17 August 2004. Collaboration in this field is important because it will enable important lexicological issues to be addressed both more accurately and now for the first time from a comparative and empirical perspective. The pilot work presented at the seminars has lead up to this proposal.

The Centre for Languages and Literature at Lund University

From September 2004 the Centre for Language and Literature will provide researchers at Lund and their national as well as international collaborators with the state-of-the-art equipment for carrying out experiments. The Centre will make an invaluable meeting place where Lund University may become the natural pivot point of networking. I and my colleagues are looking forward to launching an international project and carrying out experiments in one of the best equipped laboratories in the world and thereby contributing to an active research environment at Lund University.
**Procedure and dissemination of results**

January – April 2005: I will spend the first 4 months working on the selection of data for the elicitation experiments as well as the design and implementation of the data using E-Prime (in collaboration with my colleagues in the UK-Sweden Group on Comparative Lexicology). A statistical consultant will help me with the setup of the experiments and later on, in the last phase, with the analysis of the results.

May – December 2005: During the last 8 months, I will carry out experiments in both languages in collaboration with Lynne Murphy. The results will be analyzed and evaluated. The outcome of the project will be presented at (an) international conference(s) in 2006 and written up for publication in conference volumes/journals (Applied Psycholinguistics, The International Journal of Lexicography or Mind & Language).

**References**


Murphy, L & S. Jones forthcoming. Antonymy in children’s and child-directed speech.


