

Usage-Based Cognitive Models:

Behavioural profiles and quantifying context effects on conceptual metaphors

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The theory of conceptual metaphors has been successful in advancing our understanding of language. Crucial to the validity of this theory is the notion of ‘concept’, not only for identifying and delimiting ‘source’ and ‘target’ information, but also for distinguishing similarity from contiguity. The Idealised Cognitive Model (ICM), in its various guises, has been proposed as an operationalisation of the notion and whether explicitly employed or merely assumed, the idea arguably underlies most of the theoretical and empirical research on conceptual metaphors.

Notwithstanding the detailed and excellent research of Kövecses (1986), Lakoff (1987) *et alii*, the approach employed in these studies faces serious limitations. Such research adheres to the theory of Cognitive Linguistics, a theory for which the usage-based model of language is fundamental (Langacker 1987). This model maintains that individual competence is primarily a result of language usage, which entails that different speakers have subtly different grammars. An elegant model for which synchronic and diachronic variation are an inherent part of language structure, which is, in itself, merely a generalisation across the competences of a given speech community at a given time.

The problem is that if one accepts this model of language, then the identification and description of conceptual metaphors using the analytical apparatus of Idealised Cognitive Models fails to account for social variation and, furthermore, produces results that are not falsifiable. The very fact that Idealised Models are *idealised* makes them theoretical models of underlying structure as opposed to empirical descriptions. This is because the underlying structure, according to the usage-based model, is a generalisation across speakers, not a discrete and shared structure in the minds of speakers as ICMs depict it. Thus, the descriptive and explanatory adequacy of an ICM is an empirical question and, in effect, ICMs are untested hypotheses about conceptual structure. The aim here is to develop methodology that produces descriptions of metaphors and the concepts (cognitive models) they are based upon that (i) accounts for structure across social variation – how are metaphors used – and that (ii) can be falsified – empirical evidence for that use.

In this lecture, we accept the evidence that conceptual metaphors exist (Gibbs & Colston 1995, Boroditsky 2000, Matlock *et al.* 2005 *et alia*) as well as the method developed for the identification of metaphoric language (Pragglejaz Group 2007, Steen *et al.* 2010). We assume that the systematic analysis of natural language production over large groups of speakers (corpora) is the best method for identifying usage patterns across a speech community and that these patterns represent the aforementioned underlying structure (grammar). Of course, using corpora to investigate conceptual metaphors is nothing new. Research such as Stefanowitsch (2004, 2006) has shown how certain types of metaphorical expression can be systematically retrieved from corpora. Likewise, both heuristic and fully operationalised methods in discourse analysis and concordance analysis have been applied to retrieve metaphoric occurrences (Cameron 2003, Charteris-Black 2004, Musolff 2004, Deignan 2005, Semino 2008 *et alia*). In this presentation, we examine yet another corpus method. This method

employs relatively large random samples, the annotation of usage features and the application of multivariate statistics to the results of that annotation. The method is sometimes termed the Behavioural Profile Approach (Gries 2010) and it finds its origins in early Cognitive Semantics (Dirven *et al.* 1982, Geeraerts *et al.* 1994).

The Behavioural Profile Approach employs ‘Multifactorial Usage-Feature Analysis’ combined with multivariate modelling to identify and quantify complex patterns in usage. Unlike traditional corpus methods, it looks for patterns not only in observable features (such as collocation and collocation) but also in manually analysed non-observable features such as those typical of discourse analysis. In this, the method can be characterised as a hybrid corpus linguistics – discourse analysis approach, taking the systematicity and quantification of corpus linguistics and applying it to discourse analysis, or taking the fine-grained and subjective approach of discourse analysis and applying it to large random samples, in turn treating the results quantitatively. The method has been widely applied to questions of lexical and constructional semantics (Gries & Stefanowitsch 2006, Glynn & Fischer 2010, Glynn & Robinson 2014) but also to conceptual generalisations that could be characterised as ICMs (Glynn 2013, 2014, 2015). The question is: can this method be extended to the description of conceptual metaphors *per se*? If this is possible, it will enable quantified falsifiable descriptions that account for social effects on inferred conceptual structure as well as, perhaps, the intentional dimensions behind such conceptual structure.

The presentation will evaluate the application of the Behavioural Profile Approach, specifically Multifactorial Usage-Feature Analysis, to conceptual metaphor research with a case study on metaphors of ANGER in contemporary American and British English. The data will consist of a large random sample extracted from online personal diaries (LiveJournal Corpus, Speelman & Glynn 2012). The methodological strengths and weaknesses of the approach will be treated in detail, especially questions concerning (i) sample size and representativity, (ii) token identification and delimitation, (iii) quantification, inference and the interpretation of results derived from subjective analysis, as well as (iv) manual annotation and the reliability of subjective analysis.

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