A MULTI-DIMENSIONAL PERSPECTIVE ON METAPHOR USE IN ENGLISH

Introduction

Corpus-based research into metaphor has provided valuable insights into a range of aspects of metaphor use, including frequency, patterning and distribution within and across texts. One of the most consistent findings coming out of this research is that metaphor use varies across different specialized text forms, such as genres, registers, and text types.

Evidence of a relationship between metaphor use and specialized texts is offered both directly and indirectly in the literature. Indirect evidence is offered by different studies that look each into a distinct text variety (Berber Sardinha, 2008; Cameron, 2003; Dorst, 2011; Kaal, 2012; Krennmayr, 2011; Pasma, 2011; Steen et al., 2010).

Altogether this body of research presents a complex picture of the relationship between metaphor and register variation. As Kaal (2012 :56) argues, 'the study of metaphor would greatly benefit from a register-variation approach that is able to separate register-defining metaphor use from general and shared patterns'.

The goal of the present study is to use the (Multi-Feature) Multi-Dimensional framework (Biber, 1988 et seq.), as well as multivariate statistical techniques, as means to examine the interplay between register variation and metaphor use in English.

Method

The Multi-Feature Multi-Dimensional, or simply Multi-Dimensional (MD), approach was developed by Biber (1988 *et seq*) with the aim of finding the communicative parameters that underlie register variation. The MD approach has been applied to a number of different contexts, ranging from specific genres, like TV episodes (Rey, 2001), to broad registers such as conversation (Biber, 2004), and even to whole languages, such as English (Biber, 1988), Spanish (Biber, Davies, Jones, & Tracy-Ventura, 2006; Parodi, 2007) and Portuguese (Berber Sardinha, 2011a). With the exception of Berber Sardinha (2011b) and the project reported here, no MD study has incorporated metaphor in the set of features analyzed.

The corpus used for this study is the VUAMC (Vrije University Amsterdam Metaphor Corpus), which in turn is a sample of BNC Baby that was hand coded for metaphor by the members of the Metaphor in Discourse project (Steen, et al., 2010). The corpus was downloaded off the Oxford Text Archive and after processing with the Biber tagger, it had the size and composition as shown in Table 1.

Register	Tokens	Texts
Academic	68,276	15
Conversation	48,768	11
Fiction	45,663	12

| News | 46,208 | 46 |
| Total | 208,915 | 84 |

Table 1 Composition of the VUAMC corpus after processing

The corpus had its original tags removed and was then tagged over with the Biber tagger, a software program regularly employed in MD research that automatically identifies over 400 different grammatical features. It was later post-processed by the Biber Counter program, which calculated the frequencies of 127 selected features. To identify semantic features, the Eng-CG tagger was used.

A review of the metaphor literature indicated the following features as potentially relevant:

- Metaphor frequency: density of metaphor use differentiates registers, as noted in the introduction.
- Metaphor signaling: words that act "as a signal that a cross-domain mapping may be at play" are considered metaphor signals, or flags (Steen, et al., 2010 :26).
- Metaphor manifestation: metaphors can be expressed:
  a. Directly: Words whose metaphorical status is signaled directly (Steen, et al., 2010 :39), by words such as *resembling*, *like* and *as*. Eg: *words started as a coat-hanger to hang pictures on* (Krennmayr, 2011 :31).
  b. Indirectly: Words whose metaphoricity is not explicitly signaled (Steen, et al., 2010 :33). This is how metaphors manifest themselves by default. Eg: *high wages* (Krennmayr, 2011 :31).
  c. Implicitly: Words whose metaphorical status is realized by substitution (e.g. *it* in *to embark on such a step is not necessarily to succeed immediately in realizing it,* where *it* refers back to the metaphorically used word *step*) or ellipsis (*but he is [an ignorant pig]*, where *is* receives the code for implicit, elliptical metaphor, in place of the omitted fragment in brackets) (Steen, et al., 2010 :40).
- Metaphor clustering: Metaphor cases are distributed unevenly in text, forming clusters of neighboring metaphors (Cameron & Stelma, 2004).
- Metaphor conventionalization: Conventionalized metaphors, or those that "go unnoticed in everyday life" (Deignan, 2005 :5, 40-47), represent a large share of metaphor use.
- Metaphor semantics: Assigning metaphor cases to semantic groupings is useful in categorizing metaphor use (Cameron & Maslen, 2010). In addition, semantic fields have been used as a starting point for metaphor detection (Berber Sardinha, in press; Kaal, 2012; Krennmayr, 2011).
- Metaphor word class: Previous studies found that frequency of different parts of speech distinguishes registers (Dorst, 2011; Kaal, 2012; Krennmayr, 2011; Pasma, 2011).

Research Questions

The following questions were formulated and will be addressed in turn in the paper:

1. Is there a relationship between Biber's (1988) dimensions of variation for English and metaphor use? In other words, given that we know the scores for each text on each of Biber's (1988) main dimensions (1 through 5), are there significant associations between these scores and metaphor use? If so, which parameters of variation are associated with metaphor use?
2. What are the dimensions of variation in the VUAMC corpus? Do they differ from those obtained by Biber (1988)? What is the role of metaphor on the dimensions?
3. Are differences among mean register scores on each dimension significant? That is, to what extent can these dimensions predict register?
4. What are the text groupings that cut across register categories for individual dimensions? Do these groupings improve on the amount of variation captured by register categories?
5. What are the text types present in the corpus?

Three different kinds of variables were extracted from the corpus: structural, semantic, and metaphor-related. All counts were normed per 1,000 words. For example, the frequency of indirect metaphors in text a1e was 86. Since this text had 598 tokens, its normed count for indirect metaphors was 143.8, that is, 86/598 * 1000. Norming controls for text size, thus enabling comparisons across texts of different sizes.

For reasons of space, further details about the method cannot be provided here but will be given in the paper presentation.

Results

This study revealed a number of different findings about the relationship between metaphor and register in English, which are summarized below given space constraints. In the paper presentation, results will be given in full in addition to text samples that illustrate each of the points raised here.

The first main finding is the identification of two metaphor dimensions of variation in English, one related to metaphor density, where metaphor is the chief element, and the other to opinion elaboration, where metaphor plays a marginal role.

The second main finding is that metaphor accounts for 41% at most of register variation in English. Grammar, on the other hand, captures twice as much variation. Nevertheless, being a much less common feature of language use than grammatical structure, it is striking that metaphor can predict register by such a degree.

The third main finding is that metaphor cannot be accounted for by the existing dimensions for English. Simply knowing how a text scores on each of the main five dimensions of variation in Biber (1988) does not enable us to predict metaphor use. As a result, metaphor must be explicitly factored in in MD analyses, which was done here.

The fourth main finding is that structural variables tend to segregate metaphors, and vice-versa. This indicates that metaphor and grammar are two distinct levels of language that give rise to different frequencies and distributions in text, thus splitting

apart onto different dimensions. In other words, although grammar and metaphor are associated, they provide a different perspective each on register variation.

The fifth main finding is the existence of text groupings that better account for metaphor variation than register categories. These groupings consist of scales within each dimension, and they indicate bands of metaphor density.

And the final main finding relates to the two text types detected, which embody the linguistic characteristics mutually shared across the texts with respect to the dimensions.

Further MD research should consider metaphor features on their own, verify what kinds of dimensions can be detected, and determine to what extent these dimensions can capture more specialized modes of interaction between metaphor and textual categories such as register or text type.

This research hopes to show that a combination of metaphor research and MD analysis may be a promising avenue for further studies in corpus-based metaphor analysis.

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