Summary *Metaphor in academic discourse*

In the last 30 years, it has been established that metaphor is not only prevalent in rhetoric and in literary writing, but is actually an indispensable part of natural language and thought. For example, the verb *conceive* in *The facilities had been conceived with families in mind* does not denote the act of becoming pregnant, but the act of planning a building. There are then two kinds of metaphor present: linguistic and conceptual. The linguistic metaphor *conceive* indicates a metaphorical structure involving two distinct concepts: IDEAS ARE PEOPLE. Such and other conceptual metaphors are assumed to underlie all natural discourse. Metaphor is hence a window to the way people think and communicate, and on how language is structured in different domains of discourse.

In academic discourse, the awareness of metaphor is also relatively new. Prevailing theories have traditionally seen metaphor as a threat to the scientific maxims of accuracy, truth, and explicitness and these views are still reflected in academic writing conventions, which often evaluate metaphorical language negatively. So far, most studies on metaphor in academic prose have been conducted on a small scale or have been restricted in their focus, investigating only a small set of linguistic or conceptual metaphors. Broad quantitative studies which utilize a transparent, systematic method that identifies all metaphorical language rather than particular subgroups have largely been absent, particularly in studies of academic prose. Consequently, the actual extent and the forms of metaphorical word use in academic texts, as well as differences between academic texts and other registers, remain largely unknown.

My dissertation begins to fill this gap. Together with my colleagues, I constructed a database of about 190,000 words of natural language covering four broad registers from a sub-corpus of the British National Corpus (academic texts, news texts, fiction, and conversation). This corpus was annotated for metaphorical language use by means of a detailed protocol for identifying metaphor in discourse. Both the protocol and its application to academic prose are unique contributions to metaphor research and have been documented in the book.

In order to produce a high level of validity, I employed the systematic and consistent procedure for metaphor identification to each and every word, comparing academic prose with the other registers. I then examined how common metaphor is in academic texts, how it is distributed across word classes, and what different types can be observed. This quantitative study showed that metaphor is more frequent in academic prose than in the other three registers. What is more, metaphor appears to be evenly spread across academic sub-disciplines. Metaphor therefore appears to be important for tailoring the densely packed, highly precise, and abstract prose of academic discourse.
Yet when taking into account word classes, the findings become more complicated: Some of the word classes examined (e.g., prepositions, verbs, and nouns) have a higher proportion of metaphor than others (e.g., adjectives and adverbs). This finding can, however, only in part be explained by the existing patterns of word class usage in the individual registers. To make sense of the pattern obtained, I investigated the forms and functions of the individual word classes when related to metaphor in detail, by means of the comprehensive corpus-based *Longman Grammar of Spoken and Written English*. I found that in academic prose, metaphor use across all word classes caters to the packaging of information. Also, metaphorical use of many word classes establishes and specifies reference, delimitates the interpretability of words, and establishes exact coherence relations.

One of the most important results is that the relatively restricted abstract meanings of verbs in academic prose (expressing simple existence, occurrence, and relationships) can be now explained by their metaphorical usage. At the same time, in conversation (where discourse is situated in its concrete environment and presented with relatively little planning), and fiction (with its simulated conversations and descriptions of concrete situations and actions) the same verbs are used much more often in their non-metaphorical senses. The analysis suggests, however, that metaphor in the lexical word classes (such as nouns, verbs, and adjectives) in academic texts can also help to perform ‘social’ functions, for example in explanation and exposition, in the conveyance of authorial stance, and in persuasion. Yet, this is often done in a quite inconspicuous way, and appears to be linked to the heavy dominance of so-called indirect metaphor, which is especially frequent in academic prose (e.g., *defend in this thesis can be defended*) and may eventually explain its ‘literal feel’.

Finally, my work goes beyond corpus linguistics and discourse analysis: In addition to the first, linguistic part, of my dissertation, I conducted an experiment that addresses the question of metaphor processing: For example, do people using the term *electrical current* actually think of streaming water? Considering the highly specialized and technical language of much academic discourse, as well as its specialist audience, I have examined how different groups of people (novices and experts) react to specialist metaphors of psychology. While the role of expertise cannot be fully delineated, the experiment renders another important finding: It appears that metaphor conventionality (which is widely accepted as a crucial factor in metaphor processing) has not been modeled sufficiently from a theoretical point of view, because no sufficient differentiation has been made between linguistic and conceptual conventionality. I suggest that in cognitive research, metaphor conventionality needs to be defined and researched in a more differentiated way.

In all, my work has suggested that, as a rule, metaphorical word use in academic prose is largely devoid of the open-ended meanings associated with metaphor in a
traditional sense. Metaphorical word use in academic discourse is generally highly precise, conventional, and mostly used to establish clearly delineated reference with abstract instances of discourse and to link the discourse. At the same time, metaphorical language in academic prose can also be used as a tool for transmitting messages on a social or personal level, e.g., in explanation and exposition, the conveyance of authorial stance, and persuasion. As a rule, however, the metaphors of academic prose are conventional, and inconspicuous. This holds for such metaphorical words that cater to ‘exact’ discourse functions (the majority), but also for such metaphors that perform social and subjective functions. This may explain why, in spite of its actually very high frequency of metaphors, academic prose has traditionally been regarded as a ‘non-metaphorical’ register.