

Metaphor in newspapers

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Metaphor in newspapers

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CHAPTER 1

Introduction

1.1 Metaphor

Metaphor is hotly debated and much researched by linguists. This may seem strange: why are linguists concerned with the stuff of poets? The answer has to do with cognitive linguistics, a powerful new way of looking at both language and thought – and with them metaphor. Unlike earlier models of language, which considered language apart from other cognitive abilities, cognitive linguistics sees language as interacting with perception, memory and reasoning. It emphasizes that even seemingly arbitrary aspects of language, like choosing prepositions (why do you get *on* the bus but *in* the car?), have meaningful systematic underpinnings in thought.

In 1980, Lakoff and Johnson published a seminal work on metaphor that would go on to set the direction of metaphor research for years to come. In their work, Lakoff and Johnson collected sets of systematically organized metaphorical language data that, it was claimed, reflect conventional thought structures in the human mind. Here is an example of such a set (1980, p. 46, italics in original):

What he said left a bad *taste in my mouth*.
All this paper has in it are *raw facts, half-baked ideas, and warmed-over theories*.
There are too many facts here for me to *digest* them all.
I just can't *swallow* that claim.
That argument *smells fishy*.
Let me *stew* over that for a while.
Now there's a theory you can really *sink your teeth into*.
We need to let that idea *percolate* for a while.
That's *food for thought*.
He's a *voracious* reader.
We don't need to *spoon-feed* our students.
He *devoured* the book.
Let's let that idea *simmer on the back burner* for a while.
This is the *meaty* part of the paper.
Let that idea *jell* for a while.
That idea has been *fermenting* for years.

The expressions in italics do not refer to food in this context but are used to describe the more abstract topic of ideas. In each list item, one can see that an abstract, more complex and fuzzy concept – an idea – is structured in terms of a concrete, more familiar, simple and physical concept of food. These are expressions of metaphor in the sense of cognitive linguistics: metaphor is seen as the linguistic expression of a cross-domain mapping in thought – usually from a more concrete source domain (e.g. food) to a more abstract target domain (e.g. ideas). The patterns of thought underlying *linguistic* expressions are termed *conceptual* metaphors. The expressions themselves are referred to as linguistic metaphors.¹ In the example above, the metaphorical expressions in italics are realizations of the conceptual metaphor IDEAS ARE FOOD.

Lakoff and Johnson took such systematic sets as evidence that we not only talk about one thing in terms of another, but that we also *think* in these terms. “Metaphors as linguistic expressions are possible precisely because there are metaphors in a person’s conceptual system” (Lakoff & Johnson, 1980, p. 6). Metaphors thus provide a window on the ways language is structured and on the ways in which we think and learn. In this view, they are no longer regarded merely as an element of poetry but are recognized as a central device in human thought. This is the reason metaphor has become such an important topic of linguistic research.

Lakoff and Johnson’s work on conceptual metaphor created a whole new field of research within cognitive linguistics. As with much groundbreaking research, it also has been heavily criticized (e.g. Jackendoff & Aaron, 1991; Murphy, 1996, 1997; Steen, 1994; Verwaeke & Green, 1997; Verwaeke & Kennedy, 1996). One point of critique is their method of data collection: it is not clear how they accumulated the examples offered in support of their claims. The bulk of their examples seem to be constructed rather than found and are presented out of a larger context. In this thesis I will take the view that to develop a deep understanding of metaphor, it is necessary to move beyond invented examples and decontextualized materials. If we want to understand how people use metaphorical language, its functions, in what kind of situations and in what ways it is used, how people understand metaphorical language and what kind of effects it might have on them, we need to look at real language as it is used and produced in everyday life. This focus on metaphorical language use by real people in real situations of use is only a recent phenomenon

¹ In this work, linguistic metaphors are referred to as words, units or expressions that are metaphorically used, linguistic metaphors, metaphor related words or metaphorical expressions.

(Cameron, 2003; Charteris-Black, 2004; Cienki & Müller, 2008; Deignan, 2005; Koller, 2004; Semino, 2002).

When working with real language data, it is important to consider not just the language but its context. A text does not exist in a vacuum – it is produced by someone for someone else in a certain situation and way for a particular purpose. “Discourse (...) is a complex communicative event that also embodies a social context, featuring participants (and their properties) as well as production and reception processes” (van Dijk, 1988, p. 2). Consequently, natural discourse provides a much richer source for investigating the function of metaphor.

One abundant source of real discourse is the news. Since “society is pervaded by media language” (Bell, 1991, p. 1), news influences much of our lives. It has attracted significant research interest. Critical discourse analysis, for example, aims to reveal power and inequality in social and political contexts and to uncover ideological bias of texts (van Dijk, 2001, p. 352). Metaphor has the ability to highlight some aspects of a concept while at the same time hiding others (Lakoff & Johnson, 1980, p. 10). It is thus a powerful tool for creating subtly persuasive messages serving ideological purposes in the press (Charteris-Black, 2004; Santa Ana, 1999).

News is the subject of interest in this thesis, more specifically the use of metaphor in newspaper articles. The aim of this work is to examine metaphor in newspapers from both a cognitive linguistic and discourse analytical perspective. Cataloging and describing metaphorical expressions and conceptual structures in real language data such as news discourse has value in and of itself: it provides a test for existing theories of language and thought and guides linguists in developing new theories. But a cognitive linguistic approach alone is not enough. A study of actual language use also demands a discourse analytical angle. This is necessary in order to connect metaphorical forms and structures to their functions – when, why and how do journalists use metaphor? The cognitive linguistic definition of metaphor as a cross-domain mapping will be used as a framework to describe and analyze which linguistic forms of metaphor are typical of news texts and in which contexts and for which purposes they may be used. Insights gained from a discourse perspective can then feed back into conceptual metaphor theory.

There is a variety of prior work on metaphor in news. It has been investigated in very specific topics such as immigrant discourse (Santa Ana, 1999), or single articles (e.g. Kitis & Milapides, 1997 on ideology construction), and its use has been discussed for a range of subregisters such as business texts

(e.g. Koller, 2004) or sports reporting (e.g. Charteris-Black, 2005). Other research has given detailed accounts of the use of selected samples of conceptual metaphors and/or metaphorical expressions (Heywood & Semino, 2007; Koller, 2004). Metaphorical language use in news as a register as a whole, however, has not yet been given due attention. Goatly (1997) created “metaphorical profiles” for several registers, giving estimates of the frequencies of a range of metaphorical phenomena in news texts. This had not been previously attempted, and was a worthwhile effort. How precisely his metaphorical data was collected, however, is not clear. This makes it difficult to draw general conclusions from that study.

In order to extract features of metaphorical language use that are characteristic of news texts, I will take a corpus-linguistic, quantitative approach. Though discourse analysts have not traditionally drawn comparisons to other texts or general corpora (Deignan, 2005, p. 135), there is good reason to do so: a corpus analysis that compares the news register to other domains of discourse can reveal distinguishing features of metaphorical language in newspapers. The corpus I work with contains four registers – news texts, academic texts, fiction and conversation – and has been built using a systematic, explicit, repeatable method for metaphor identification. Chapters three and four are devoted to the development of this protocol, which is a response to the vast amount of intuition-based metaphor research. I will also supplement quantitative methods with qualitative analysis. While a quantitative analysis can show general trends, a qualitative analysis of metaphorical language use is required to gain a better understanding of its functions in a larger discourse context.

That being said, this work will move beyond the boundaries of a corpus-linguistic approach. Studying the forms and patterns of metaphorical language in news language can reveal their functions in discourse. It does not tell us, however, whether newspaper readers actually think metaphorically. Finding an answer to this question has both theoretical significance and practical implications for journalistic writing. I thus will use psycholinguistic methods to investigate the impact of metaphor form and conceptual structure on the construction of metaphorical schemas by readers.

My study of metaphor in newspapers is multidisciplinary. While the cognitive linguistic assumption of metaphor as a cross-domain mapping forms the framework for all analyses, an understanding of metaphor use in real language data requires more diverse perspectives. I use corpus linguistics to research metaphor variation. Metaphorical forms, functions and patterns are analyzed with a discourse analytical approach. In order to learn more about the

cognitive representation of metaphors in people’s minds, this symbolic analysis is complemented with a behavioral approach. Chapter 9 reports on an experiment that investigates metaphorical schemata.

Valid analysis of metaphor in language, thought and behavior requires transparent and sound methods. A number of chapters are therefore devoted to methodological advancement of research tools – the refinement of a linguistic metaphor identification method (Chapters 3 and 4), an exploratory study of a semantic annotation tool for identifying metaphor on a conceptual level (Chapter 7) and the application and further development of a method that reveals conceptual structures behind metaphorical expressions (Chapter 8).

The remainder of this introduction will sketch the global structure of this thesis in the form of three planes of analysis on which I am operating – metaphor in language, metaphor in thought (i.e. conceptual structures expressed linguistically) and metaphor in behavior.

1.2 Metaphor identification: building a database

With most studies of metaphor being concerned with analyzing artificial examples, short snippets of text, a restricted selection of conceptual metaphors or a narrow topic of interest, the field remains in its infancy. In order to “grow up”, it needs to make the leap from qualitative to quantitative research. And in order to do that, a large corpus of text annotated for metaphor is essential. Here we make that leap. Together with a small group of analysts,² I have built a corpus of about 190,000 words comprising four registers taken from the BNC-Baby – a four million word subcorpus of the British National Corpus: these registers are news, academic texts, fiction, and conversation. In this thesis, the news register is singled out for particular attention. The other three registers receive similar treatment in a series of companion works (Dorst, in preparation; Herrmann, in preparation; Kaal, in preparation).

In order to build a corpus annotated for metaphorical language use it is not sufficient to take an “I-know-it-when-I-see-it” approach. Instead, it is necessary to have a clear set of rules for identifying metaphor. The Praggeljaz

² The annotation process was completed within two years. The team in the first year consisted of Ewa Biernacka, Lettie Dorst, Anna Kaal, Irene López Rodríguez, and Gerard Steen. In the second year Berenike Herrmann and Tina Krennmayr replaced Biernacka and López Rodríguez.

Group (2007)³ has formulated such a set of instructions for identifying metaphorical language use in discourse. Their goal was to move away from intuition and to achieve reliable metaphor identification across analysts. My study aims at quantifying metaphorical language and answering questions like: how common is metaphorical language in newspapers and how does its frequency compare to that of other registers? Which metaphor forms are most common? Which word class is typically metaphorically used? And so on. Moreover, my study will describe the use and function of metaphor in newspaper texts and will test whether people create metaphorical schemas when reading metaphorical expressions in press reports. This host of important questions cannot be addressed without a solid database.

Analysts systematically collected metaphorically used expressions by applying the Pragglejaz protocol and monitored their performance through reliability tests. The resulting database is a unique effort to add validity and comparability to metaphor research. It forms the backbone for all ensuing analysis. To my knowledge this is the first study to describe the characteristics of metaphorical language in newspapers in comparison to other registers that is based on a corpus annotated for metaphorical language use on the basis of an explicit, reliable procedure.

Chapter 2 gives a brief overview of approaches to metaphor identification and sketches potential ensuing analysis. The focus is on introducing the Pragglejaz procedure MIP (Metaphor Identification Procedure), which operates purely on a symbolic level of analysis. At this stage, cognitive processing of metaphorical language by individual people is not the concern. When language users come across metaphorical expressions identified by MIP they may or may not perform a cross-domain mapping.

Chapter 3 presents the result of the analysts' refinements of the MIP procedure in the form of instructions for identifying metaphorical language in natural texts. The protocol is called MIPVU (VU standing for *Vrije Universiteit*, the University at which this research has been carried out). It addresses the research question:

How can metaphor be reliably identified in natural discourse?

Answering this question has turned the MIP procedure of half a page into a complete manual of 18 pages.

³ Peter Crisp, Ray Gibbs, Alan Cienki, Graham Low, Gerard Steen, Lynne Cameron, Elena Semino, Joe Grady, Alice Deignan, Zoltán Kövecses

Whether metaphor identification in newspapers is straightforward or may pose difficulties has not been reported before. The Pragglejazz Group (2007) demonstrated the MIP procedure by applying it to a sentence from a news article, which hints that the procedure is particularly transparent for the news register. In the original Pragglejazz article, however, the procedure was developed by analyzing just a handful of sentences. One might expect application of the method to a large amount of data, as carried out in my project, to reveal cases that fall beyond the protocol, and, indeed, its application to larger samples of text has led to some adjustments. Chapter 4 demonstrates how the MIPVU procedure allows one to find metaphorical language in news texts and addresses the following questions:

Which difficulties are encountered when implementing MIP to news texts and how can they be solved within a more refined MIPVU procedure?

How successful is the implementation of MIPVU to news texts in general?

A qualitative discussion of methodological issues in its application to newspaper texts will show that the news register in particular has a low incidence of coder disagreement. The small number of challenging cases can be solved within the more refined MIPVU version.

1.3 Analyzing metaphor in language

As emphasized above, most prior studies of metaphor in news texts have focused on a set of pre-selected conceptual metaphors, a specific set of metaphorical expressions, a narrow topic of analysis, or a small sample of text. Existing research typically focuses on “nice” examples, and may give the impression that the press is full of metaphorical language such as attention-grabbing metaphor use in headlines or clustering of metaphorical expressions from the same source domain. This may create the impression that newspaper language is very metaphorical. It remains unknown, however, how common metaphorical language in news texts really is, and how its frequency and use compares to that in other registers. Addressing register variation (Chapter 5) across different kinds of discourse makes it possible to investigate important questions such as:

What is typical for metaphorical language use in news texts in quantitative terms?

and more specifically:

Is metaphorical language used more or less frequently in news compared to other registers? If there are any differences, what are they and why do they occur?

Answering these questions makes a unique contribution to metaphor variation research. So far, metaphor variation across registers or languages has focused on selected items (e.g. Deignan & Potter, 2004; Skorczynska & Deignan, 2006) or expressions that can be attributed to a small selection of source domains (Semino, Hardie, Koller, & Rayson, 2009). My database of language is annotated for *all* metaphorical language regardless of source domain and metaphor form and thus allows me to give a more complete picture of metaphor use in newspapers. In providing an answer to the questions above I draw connections between results from quantitative analysis and situational characteristics of news texts (Biber & Conrad, 2009, pp. 44ff) such as its production circumstances, audience, and communicative goals. It is known that press reports differ from other registers along a number of dimensions (Biber, 1988). For example, news reports and other highly informational texts feature a prominent use of nouns, prepositions, or adjectives, whereas, relatively speaking, adverbs and verbs are a less common feature and are more typical of the informal conversation register. It is unknown what metaphorical language use contributes to this picture. Therefore, this chapter will add the variable of metaphor to the existing register descriptions of Biber (1988) and Biber, Johansson, Leech, Conrad, and Finegan (1999).

As Koller (2002, p. 192) notes in reference to Widdowson (2000, p. 9), a quantitative analysis describes the text, but not the discourse. Chapter 6 therefore takes a more qualitative angle:

Why does a particular metaphorical expression occur in particular texts, in a particular context and in a particular form or pattern?

Why do some news texts, despite a similar proportion of metaphorically used words, stand out as more metaphorical than others?

This chapter examines metaphorical patterns (e.g. Semino, 2008) from a range of topics, newspaper sections and texts with different percentages of metaphorical language use. Special attention is paid to the level of conventionality of metaphorical expressions (conventional or novel), metaphor signaling (is metaphorical language use signaled by e.g. comparison makers such as *like*) and explicitness of the source domain (is it indirectly used as in “the *road* to peace” or directly expressed as in “he moves like an *elephant*”). I also focus on the connection of these variables to functions (Biber, 1988, p. 35; Semino, 2008, pp. 31-32) of metaphorical language in news. The chapter will try to tease apart characteristics of metaphorical language use common to language in general from those that are more typical of news texts specifically.

1.4 Moving towards metaphor in thought

Revealing the characteristics of metaphorical language use in news texts focuses on linguistic metaphor, i.e. those expressions that have been identified as metaphorically used by means of MIPVU. This procedure operates on a purely linguistic level. It does not attempt to determine source and target domains or formulate conceptual mappings. In order to guarantee maximal transparency of the procedure and a reliable application thereof, it restricts itself to comparing and contrasting word senses in the dictionary – a process that is relatively straightforward to constrain. Conceptual domains, by contrast, are more difficult to demarcate (Warren, 2002, pp. 126-127 as cited in Steen 2007, p. 180). For example, what is the appropriate source domain for *attacking* one’s argument? Is it WAR, is it SPORTS or is it some more general domain of PHYSICAL VIOLENCE? (see also Ritchie, 2003).

Chapter 7 is concerned with identifying metaphorical language use at the conceptual level through analysis of a lexical unit’s semantic fields – sets of lexemes that have semantic relations to each other. As Hardie, Koller, Rayson, and Semino (2007) have suggested, semantic fields may be viewed as roughly corresponding to conceptual domains. More specifically, the chapter explores the usefulness of the semantic annotation tool Wmatrix (Rayson, 2008) for metaphor identification purposes. Wmatrix is an automated tool that assigns one or more semantic fields to each word in a text. The tool, while not originally designed for metaphor identification or analysis, may be able to constrain the analysis in a meaningful way, and may thus prove to be useful to the metaphor researcher.

Can the metaphorical status of lexical units be determined by comparing and contrasting the semantic fields ascribed to a unit by the semantic annotation tool?

Is it possible to determine metaphorical expressions as well as their source domains by searching for semantic fields that deviate from those fields that best describe the topic of a text?

My primary interest in this chapter is methodological.

1.5 Analyzing metaphor in thought

The semantic Wmatrix analysis does not provide details about cross-domain mappings. While it identifies semantic fields that may act as source and target domains, it does not specify any other concepts that may be involved in a mapping. Similarly, the MIPVU procedure merely determines whether or not a lexical unit is used metaphorically, but it does not reveal its conceptual structure. The same is true of an analysis of the form, use and function of metaphorically used lexical units that is based on the MIPVU identified items. It does not automatically produce the conceptual structure underlying the metaphorical expressions.

Precisely how researchers arrive at conceptual mappings for linguistic expressions often remains a mystery. Lakoff and Johnson (1980) do not reveal how they get at conceptual metaphors and why the mappings are formulated the way they are. Given that conceptual metaphor theory privileges thought over language, this is alarming. Just as linguistic metaphor identification is beginning to move away from intuition and researchers have started to provide explicit protocols on how they determine the metaphorical usage of expressions (e.g. Cameron, 2003, 2006; Pragglejaz Group, 2007), conceptual metaphor identification needs to be yet more controlled and systematic (Steen, 1999, 2009).

Typically, a cognitive linguistic framework approaches metaphor identification and analysis in a top-down fashion. Researchers decide on a conceptual metaphor they are interested in and subsequently look for linguistic evidence of it (Chilton, 1996; Koller, 2004; Musolff, 2004). This is a fruitful method but carries an inherent risk. The danger is that one will find what one is looking for: when all you have is a hammer, everything looks like a nail. The analyst may not see the possibility of more than one option for a conceptual

mapping underlying a linguistic expression. As Ritchie (2006) points out, the underlying mapping for metaphorical expressions such as *defend*, *position* or *maneuver* could be multiple concepts such as ATHLETIC CONTEST, WAR or a GAME OF CHESS. Some news texts contain clusters of metaphorical expressions from related semantic fields, as in Ritchie's example. A top-down approach may be likely to select one intuitively appropriate mapping without considering potential alternatives that may better describe all or some of the related expressions. Chapter 8 therefore is concerned with the following questions:

How can the process of deriving conceptual mappings from linguistic metaphors be made transparent, what challenges are involved and how can it be constrained in a way such that it does not carry the risk of missing alternative mappings?

What are the different analytical processes involved in deductive and inductive approaches to metaphor identification and do they lead to differences in the descriptions of concepts that may be part of the mapping?

In order to address these issues, I use the five-step method (Steen, 1999, 2009) a systematic, explicit procedure for deriving conceptual mappings from linguistic metaphors in a bottom-up fashion. It forces the analyst to make well-considered decisions on aspects such as labels of source and target domains, the kinds of concepts involved in a mapping, alternative possibilities for mappings, as well as the level of abstraction at which they may be formulated. This method, while making the process of deriving conceptual structures transparent, still relies heavily on analyst intuition for some of the decisions (Semino, Heywood, & Short, 2004). In order to further reduce this intuitive aspect, I explore the use of dictionaries and Wordnet, a lexical database, as tools to add additional constraints on the process. In order to answer the second question, I adapt and refine the five-step method in novel ways that allows for a direct comparison of the two approaches.

Note that the five-step analysis operates at the symbolic level. No claims are being made as to how people process semantically related expressions. Let us assume, for example, that a five-step method analysis indeed finds that the underlying source domain of *position*, as given in Ritchie's example, is ATHLETIC CONTEST. This does not mean that people who encounter this metaphorically used expression in a text necessarily access this exact source concept. It may even be case that they do not perform any cross-domain

mapping at all. What is happening in peoples' minds needs to be tested experimentally. Such questions concerning behavioral research will be addressed in Chapter 9 of this dissertation.

1.6 Analyzing metaphor in behavior

Lakoff and Johnson's theory of conceptual metaphor assumes that conceptual mappings are necessary for understanding metaphorical expressions, regardless of how conventional they may be. Thus, when processing the utterance "a narrow (...) working culture", for example, the assumption would be that people need the source concept of physical space to understand the meaning of *narrow* in this context. However, they never tested this assumption.

Both theoretical and experimental work in psycholinguistics has addressed the lingering question of whether or not people draw connections between a source and a target domain when they encounter metaphorical language (e.g. Allbritton, McKoon, & Gerrig, 1995; Gibbs, Bogdanovic, Sykes, & Barr, 1997; Glucksberg & McGlone, 1999; Jackendoff & Aaron, 1991; Keysar, Shen, Glucksberg, & Horton, 2000; McGlone, 1996; Murphy, 1996, 1997; Verwaeke & Kennedy, 1996). Findings have been mixed and there is thus far no straightforward answer. What can be concluded from the varied results, however, is that one cannot make a direct connection from metaphorical language in a text to how metaphor works in people's minds. Results from Bowdle and Gentner (2005), for example, suggest that novel metaphors are processed by making comparisons between a source and a target domain, as conceptual metaphor theory would predict. Conventional metaphors, however, were found to be processed by categorization, i.e. the metaphorical sense is accessed directly without recourse to a source domain. Thus, while applying the metaphor identification procedure identifies a set of metaphorically used lexical units, these lexical units need not necessarily be processed via a cross-domain mapping.

The role of conventionality of metaphorical expressions has also been investigated by, e.g. Boronat (1990), Keysar et al. (2000) and Thibodeau and Durgin (2008). They tested whether a conceptual metaphor is activated when encountering novel or conventional metaphorical expressions that are part of an extended mapping. Results have been inconclusive. These experimental studies have used test material that lacks naturalness and is unlikely to be encountered in real discourse situations. Moreover, it seems likely that during material design insufficient attention was paid to other potential influential

factors, such as whether or not an underlying conceptual metaphor is signaled or the number of metaphorical expressions presented in the stimulus material.

By addressing shortcomings in material design and by probing signaling and conventionality, which have been ignored or conflated in previous studies, Chapter 9 helps to disentangle the confusing output of recent studies and gives us a better understanding of the role of extended mappings in text representation. The chapter reports the results of a new experiment that addresses the following question:

Do metaphor signaling and the level of conventionality of metaphorical expressions influence readers' mental model of a newspaper text that is built around an underlying extended metaphorical mapping?

While this chapter can answer fundamental questions on metaphor comprehension in written material, it also has direct connections to the more general concerns of journalists. If metaphorical language can potentially influence people's views on topics, and consequently their actions, it is important to know under which conditions people are most likely to build their textual representations of a newspaper article on a metaphorical schema.

1.7 Overarching structure

As a broad theme, this work seeks to connect metaphorical language use, metaphorical thought (its conceptual structure) as well as its cognitive representations in peoples' minds. Based on systematic and reliable data collection, this work examines metaphor in news discourse from these three different angles. On a symbolic level, it identifies metaphorically used language (Chapters 2 through 4) and analyzes its use and describes its forms and functions in news discourse (Chapters 5 and 6). In order to show what is typical of the news registers in terms of metaphorical language use, comparisons are made to two other written registers – fiction and academic texts – as well as the spoken register of spontaneous conversation. The work then moves beyond language to explore the use of semantic fields in identifying metaphorical language (Chapter 7) and to describe conceptual structures underlying a selection of linguistic expressions (Chapters 8). Finally, it researches metaphor in behavior. I show that a metaphor's linguistic and conceptual structure does not directly reflect people's mental representation of

it (Chapter 9). These diverse approaches contribute to further development of existing tools for metaphor identification and to a better understanding of the comprehension of metaphor and its use in the press – its frequency, its patterns, forms, and functions, what is specific to metaphor in the context of news texts and what the characteristics of metaphorical language may be in general.

CHAPTER 2

Metaphor identification and analysis

2.1 Introduction

To study metaphor in newspaper texts and to describe metaphors' forms and functions, their underlying mappings, and their effects on processing, they first need to be reliably and systematically identified in order to create a solid basis for analysis. There are two major approaches to identifying metaphor in discourse. Firstly, metaphor analysis can be approached top-down, i.e. the researcher starts out from (a) conceptual metaphor(s) and then searches for linguistic expressions that are compatible with that mapping (e.g. Chilton, 1996; Koller, 2004; Musolff, 2004). Secondly, the search for metaphorically used words can be tackled from the bottom up (Pragglejaz Group, 2007) – without presuming a specific conceptual metaphor. Only at a later stage are conceptual metaphors derived from the linguistic expressions that have been identified.

In metaphor identification I approach language in use as a symbolic system and not as a cognitive process. While the cognitive linguistic approach assumes that claims about the symbolic structure of the language are also psychologically real, or at least does not make explicit that this may not be the case, I follow Steen's (2007) proposal to distinguish these different levels of analysis. Such a careful separation allows for more precise formulation of metaphor identification criteria and will thus lay the groundwork for ensuing analysis that may look at metaphor processing or may examine metaphorical patterns and how they relate to, for example, register, word class, style or communicative goals, focusing on how language is used in discourse. For example, Charteris-Black (2004) demonstrates the role of metaphor in the development of ideology by examining its persuasive function. Semino (2008) explores the forms and functions of metaphors in different genres and topics by examining metaphorical patterns and relating their use in specific contexts to conventional metaphorical patterns in language generally. Similarly, Cameron (2003) puts metaphor *in use* at the center of attention, emphasizing the importance of taking context into account.

Metaphor can be approached as a system of language or a system of thought (Steen, 2009, p. 14). This thesis deals with both of these approaches.

Since language and thought present two different levels of analysis, they each require a different methodological treatment. As will be demonstrated in Chapter 8, one linguistic form does not necessarily correspond to one clearly delineated concept and may be connected to several levels of generality in conceptual structure.

One of the goals of the present research is to quantify metaphorical language use in news texts. Is metaphor used more or less often than in other types of discourse, such as literary texts or conversations? If there are any differences, what are they and why do they occur? We are thus not merely interested in a specific selection of conceptual metaphors and their corresponding expressions, but all metaphorical language that there is. Therefore, for present purposes, an inductive approach to the corpus data is more appropriate. A deductive approach is prone to missing metaphors because the possibilities of describing and defining conceptual metaphors are infinite and lack clear boundaries. For example, by which criteria does one decide that the underlying source domain for *arguing* is WAR, SPORTS or a GAME OF CHESS? (Crisp, 2002; Ritchie, 2003). Delineating a set of conceptual metaphors for a text is unavoidably difficult. Moreover, if a conceptual metaphor is presumed, we may only find the kind of evidence that we think we should find (Cameron, 2003, p. 252).

Metaphor identification in a bottom-up fashion, however, can also be prone to inconsistencies if not handled with care. In the past, analysts have relied on their intuitions to make judgments on metaphorical use of lexical items. Such an approach is, however, a threat to reliable research and comes with drawbacks. Not all language is clearly either metaphorically or non-metaphorically used. Consequently, researchers' coding decisions often differ, which makes results difficult to compare and creates problems for the validity of claims about metaphorical language use (Pragglejaz Group, 2007). Low (1999b, pp. 49-50) names some of the dangers of metaphor identification based on intuition. A researcher who has been working with a certain group of metaphors may be prone to over-identify linguistic expressions consistent with that metaphor, while, at the same time, he or she will miss others.

In order to move away from merely intuitive work and thereby increase the consistency of coding and reduce the number of errors, this project uses a metaphor identification procedure – called MIP – that has been tested for its empirical quality (Pragglejaz Group, 2007). In the course of applying MIP to bulk data, it has been refined and extended into MIPVU. The full MIPVU manual for metaphor identification is provided in Chapter 3. The application of MIPVU to news texts is detailed in Chapter 4. There I demonstrate that it

works and how it was refined such that even borderline cases, such as expressions that are difficult to assign to a metaphorical or a non-metaphorical category, can be dealt with in a transparent and consistent manner.

Whether or not metaphor is identified through intuition or by using an explicit procedure, going through extensive stretches of discourse manually is a time-consuming task. Recent efforts have been made to explore automatic metaphor identification by means of computer programs (e.g. Berber Sardinha, 2008, 2009, unpublished manuscript; Mason, 2004). A program that is able to identify metaphorical language can be run on large amounts of text that would be too time-consuming to code by hand. If a program were available that was able to work with a low error rate, such an analysis would add bulk to statistical results obtained in studies using hand-coded material.

Current programs do not yet match human coding abilities, but there are some promising developments. Mason's (2004) CorMet program aims at detecting conceptual metaphors for verbs. The program learns selectional preferences for different domains by drawing on knowledge from WordNet, a large, hierarchically structured lexical database. For example, the object of the verb *pour* is usually a liquid. When *pour* occurs in a text on finance, the program would infer a metaphorical mapping from MONEY to LIQUIDS. The program's performance was tested against a subset of metaphors – only those with both a concrete source and a concrete target domain – from the Master Metaphor List (Lakoff, Espenson, & Schwartz, 1991). Accuracy results of 77% seem good at first sight, but are in fact disappointing both because of the small test sample (13 mappings) and because the final judgment on whether or not the CorMet output corresponds with the Master Metaphor List is decided by the analyst. It is therefore highly subjective.

Berber Sardinha's (2009, unpublished manuscript) Metaphor Candidate Identifier (MCI) is an online tool that identifies metaphorically used words in a text. It works with knowledge from training data consisting of 23,000 hand-coded words using MIP (for a closer description of MIP see next section). By matching each word from a text, its patterns, and its part of speech to these training data, the computer program calculates the average probability of a word being metaphorically used in that text. There are two versions of this program, one with seemingly more potential than the other. The output of the first version is a list of metaphor candidates sorted by probability of metaphorical use. The higher up on the list, the more likely a word is to be used metaphorically. The results are not very encouraging, since reliability varies considerably across texts. The vocabulary and word patterns of higher scoring texts may have been more familiar to the program than the patterns in

lower scoring samples, and the data may have been closer to the words and/or patterns of the training data. Moreover, results depended on sample size: larger samples yield lower precision because the program has more opportunities to suggest unsuccessful candidates (Berber Sardinha, unpublished manuscript). The second version (2009) marks each word as metaphorically or non-metaphorically used. This principle resembles that of MIP. 83% of the hand-coded metaphors were also found by the computer program, which is quite promising. Precision (the proportion of metaphors of all suggested items), however, only amounted to 49%. This low success rate is due to the limited scope of the training data and the nature of the texts (very metaphorical texts showed better results).

Berber Sardinha (unpublished manuscript) also tested other computational tools to aid metaphor identification. He found that a method using keywords, i.e. words with a higher frequency compared to a reference corpus, can only capture a small fraction of all metaphorically used items in a text: many relevant words are missed because more than half of the metaphorically used words in the test sample were not particularly frequent and thus not extracted as keywords. WordNet::Similarity (Patwardhan & Pedersen, 2006), a program that calculates the meaning differences between neighboring words, may have potential for metaphor retrieval since incongruity is a feature of metaphor interpretation. It may not be user-friendly to the inexperienced user, however, because it requires advanced programming skills. The tool that seems most straightforward to use and that performs reasonably well is MCI Version 2. At present, given the small amount of training data, the small number of texts (15), and the restricted range of domains (business, science, politics), further work is needed.

Until computer programs become more successful, coding by hand using a reliable metaphor identification procedure like MIP is the best option available to generate a corpus annotated for metaphorical language. This bottom-up approach does not focus on pre-defined conceptual metaphors but can detect all metaphorical units in a text. This allows for quantification of metaphorical language use. Such careful data collection at a low error rate sets the stage for further linguistic, conceptual and processing research.

2.2 Operationalizing metaphor identification

2.2.1 Introducing MIP

As briefly indicated above, MIP is the optimal metaphor identification method for present purposes. First, this research aims to identify all metaphorical language in the corpus data and not just a restricted sample. Therefore, a bottom-up approach such as MIP is most suitable because it does not start out from predefined sets of conceptual metaphors. Second, MIP is not intuition-based and constrains metaphor identification by checking meanings of each analyzed item in a dictionary, adding rigor to the procedure.

MIP assumes that metaphorically used words in discourse disrupt semantic coherence by introducing an alien conceptual domain (see also Charteris-Black, 2004, pp. 21, 35). In “the emphasis on *high* wages is important”, for example, the contextual meaning of *high* is ‘large in amount’. The lexeme *high* has, however, another, more basic sense – ‘large in size from the top to the ground’⁴ - that is alien to the target domain of the sentence. Assuming that the basic sense is the lexico-semantic point of reference, the contextual sense is a case of indirect use that needs to be resolved. The core of the MIP procedure compares contextual and basic meanings of lexical units. If the two meanings can be contrasted but can be understood in comparison to each other, the unit is metaphorically used.

According to MIP, basic meanings tend to be more concrete, related to bodily action, more precise, and historically older. The procedure consists of a short set of instructions (Pragglejaz Group, 2007, p. 3)

1. Read the entire text/discourse to establish a general understanding of the meaning.
2. Determine the lexical units in the text/discourse.
- 3a. For each lexical unit in the text, establish its meaning in context, i.e. how it applies to an entity, relation or attribute in the situation evoked by the text (contextual meaning). Take into account what comes before and after the lexical unit.
- 3b. For each lexical unit, determine if it has a more basic contemporary meaning in other contexts than the one in the given context. For our purposes, basic meanings tend to be:

⁴ Sense descriptions are taken from the *Macmillan English Dictionary for Advanced Learners* unless indicated otherwise.

- more concrete; what they evoke is easier to imagine, see, hear, feel, smell, and taste.
- related to bodily action.
- more precise (as opposed to vague).
- historically older.

Basic meanings are not necessarily the most frequent meanings of the lexical unit.

- 3c. If the lexical unit has a more basic current/contemporary meaning in other contexts than the given context, decide whether the contextual meaning contrasts with the basic meaning but can be understood in comparison with it.
4. If yes, mark the lexical unit as metaphorical.

The decisions that need to be taken for steps two through four will be detailed in Chapters three and four. This step-by-step approach is compatible with the notion of metaphor as a cross-domain mapping. The basic meaning of *high* belongs to a spatial source domain UP, whereas the contextual meaning of 'large in amount' can be ascribed to the target domain MORE. While the basic sense in the dictionary thus roughly corresponds to the source domain and the contextual meaning to the target domain in cognitive linguistic terms, we keep linguistic metaphor identification transparent through a simple comparison of senses in the dictionary (linguistic level) and do not attempt to formulate mappings during the identification process (conceptual level) (Steen, 2007).

At the same time, metaphor identification with MIP does not make any assumptions about cognitive processing, either (see Cameron, 2003; Crisp, 2002; Steen, Dorst, Kaal, Herrmann, & Krennmayr, 2010). A word may be identified as metaphorically used on a symbolic level while it may or may not be processed metaphorically by a language user. It also may or may not have been intended to be metaphorical by the writer. In other words, the units identified as metaphorically used by MIP are *potential* metaphors. The psychological reality of metaphor is examined in Chapter 9.

The concept of metaphor as a cross-domain mapping implies that one conceptual domain is expressed via a different conceptual domain. This means that the conceptual structure of one domain is exploited to indirectly characterize another domain (Steen et al., 2010). (Note that conceptual structure refers to ideas represented in a text, not to the actual conceptualizations by people in real time. This indirectness may or may not be explicitly marked through signals (Goatly, 1997, pp. 169ff) such as *some kind of* ("so laughter really is some kind of relief-cry" (p. 183), *something* ("there is something venomous about the hardness of this rock" (p. 176)) or *symbolically*

(“James Laver remarks that the tieless Catholic priest is symbolically castrated” (p. 179)) to name just a few.

Conceptual indirectness can be expressed linguistically in diverging ways. For example, it may be expressed indirectly based on a contrast between the contextual and a more basic sense of a lexical unit (*high wages*). It may also surface directly, however, through an explicit switch from talking about one domain to another domain, without recourse to indirect meaning. This is the case for similes such as “(...) when you tried to read the book, there was nothing there because the words started as a coat-hanger to hang pictures on” (A1L-fragment01).⁵ In this example two domains are directly compared. The source domain connected to the lexeme *coat-hanger* is explicitly mentioned and has to be connected to the target domain of the expression *words*. *Coat-hanger* is not indirectly used since it is used in its basic meaning. We need to assume that it triggers a concept, which appropriately designates the related referent in the discourse.

Metaphorical language may also surface in implicit ways. Consider the following: “The All Blacks would treat such an outmoded approach with the scorn *it* deserves (...)” (A1N-fragment09). The cohesive element *it* is linked to the metaphorical expression *approach*, which can thus be recovered as a metaphorical concept in conceptual structure (Steen et al., 2010). Because of that possibility of recovery such cases are termed implicitly metaphorical even though the language by itself does not require a non-literal comparison.

The words identified by MIP as metaphorically used are examples of indirectly used language. MIP does not identify directly used metaphorical language or implicit metaphors as in the examples above. This is because the core of the MIP procedure is finding a contrast between the contextual and a more basic sense. When metaphor is directly or implicitly expressed, however, expressions are used in their basic sense. MIPVU, an expanded version of MIP, by contrast, can also identify direct metaphor as well as implicit metaphor, as will be explained in the following chapters. It therefore not only caters to forms of metaphor based on indirect use of lexical units but also to indirect use at the level of conceptual structure.

The following sections discuss several aspects of metaphor identification: units of analysis, tools that can be used in the identification process, different levels of analysis and how metaphorical language can be measured. The focus will be on the approach taken by MIP. When applicable, it will make reference to the MIPVU procedure – the identification procedure used to build the

⁵ fragment specification in the BNC

database for this project. A detailed protocol of MIPVU and its application to news text are reported in Chapters 3 and 4.

2.2.2 Unit of analysis

There may be still more metaphorical language in a text than the types of examples described above. For example, metaphors also operate on a morphological level (e.g. *belittle*) (Goatly, 1997, pp. 92ff). For the task of analyzing metaphorical language in discourse, however, the level of the lexical unit, – as suggested by MIP – seems more appropriate. Lexical units can be connected to concepts and referents (van Dijk & Kintsch, 1983), and concepts may involve a cross-domain mapping to solve semantic discrepancy.

A lexical unit is often, but not always, a single word. Defining what constitutes a “word” is problematic (Murphy, 2002). Using MIP or MIPVU, in most cases words are simply elements of a text separated by a space. In a few exceptions more than one word makes up a unit of analysis. For example, MIP takes phrasal verbs as one unit because they designate one activity and the meaning of the whole expression is not the same as the meaning of its parts (Pragglejaz Group, 2007). So are compounds and polywords (the latter are already marked as single units in our data files from the British National Corpus, for example *of course*). The term “lexical unit” is therefore more suitable to describe the unit of analysis, though the terms “word” and “expression” will be used interchangeably unless careful differentiation is necessary. Units that consist of more than one word are, however, infrequent in the data analyzed here. Therefore, theoretical worries about their precise status in metaphor identification can be given less importance.

The MIP approach to units of analysis may be seen as problematic by some, since at times it seems counterintuitive to look separately at lexical units that are clearly connected. Consider, for example, “she launched a counterattack” in the context of arguing. Depending on a researcher’s approach, the words *launch* and *counterattack* may be either treated as one unit of metaphor or as two separate units. Cameron (2003, 2006), for example, developed a different systematic procedure with a broader unit of analysis than MIP. Her method of metaphor identification through vehicle terms (henceforth MIV) is similar to MIP. (Vehicle terms are linguistic expressions that are incongruous with the topic but are still connected to it.) While lexical units within MIP are often single words, MIV extends the scope to the phrase level. The core of the procedure is quite similar to MIP in that it aims to identify incongruous stretches of discourse by identifying more basic meanings

of vehicle terms that contrast with their more abstract contextual meanings. As the procedure goes beyond the word level, it details how to determine the starting and the endpoint of a vehicle term. Unlike MIP, the MIV procedure decidedly excludes etymology from playing a role in the analysis.

For the current project, working at the level of lexical units, as MIP suggests, is an advantage over Cameron's (2003, 2006) MIV. MIV does give implicit instructions for determining which words are part of a vehicle, but MIP is more suitable for our purposes, namely reliability testing and quantitative analysis of metaphorical language in news compared to its use in other registers. For example, in a sample conversation Cameron (2006) identifies *at one point* in "I believed at one point" as a vehicle term, arguing that it "is a phrase with a meaning of physical location that is metaphorical when used to refer to a moment in time." In "Juliet is the sun", she identifies *the sun* as the vehicle and argues that the definite article is included because "it is the particular, specific sun that is being referred to and this is signaled with the definite article". It is less clear then, why in "(...), to politically and constitutionally, correct that situation", *that* is not included into the vehicle term *situation*. MIV may be more suitable with data that are already well known to the analyst, and/or for interpretative approaches to analysis. Such familiarity with the data was lacking at the outset of this project, hence MIP was more appropriate.

While the identification procedure employed in this thesis follows the Pragglejaz Group (2007) practice in the definition of lexical units, the refined MIPVU procedure does not cross word-class boundaries when analyzing lexical units for metaphorical use. This is in order to emphasize a discourse perspective. For example, the use of the verb *to dog* as in "Photographers *dogged* the princess all her adult life" (*Macmillan English Dictionary for Advanced Learners* (Rundell, 2002)) is considered separately from the use of the noun *dog*. The noun's basic referent is an animal ('an animal kept as a pet, for guarding buildings, or for hunting') whereas the verb refers to a typically human action ('to follow someone closely in a way that annoys them'). When the noun and the verb are considered to be distinct lexical units, the noun cannot be a basic sense to which the verb's sense can be compared and contrasted. In order for the verb to be metaphorically used, there needs to be another, more basic, sense for the verb (not the noun) that could be contrasted to the contextual sense of 'following someone'. The verb does not have such a more basic sense, which is why the verb *dog* in the above example is not metaphorically used (Steen et al., 2010).

Deignan (2005, p. 48) presents arguments against this approach. She points out that this would exclude many words that most language users would consider to be used metaphorically. This applies to many mappings from animals onto humans (e.g. *weasel*, *horse*, *ferret*, *hound*). Referring to Sinclair (1991) and Hunston (2002), Deignan (2005) furthermore notes that meaning differences are reflected in form differences, which “implies that a metaphorical sense will always differ formally at some level from its literal counterpart (...)” (p. 48). For example, Sinclair (1991) points out that metaphorical uses are intransitive when the connotation is negative (“problems build up”) but transitive when the connotation is positive (“build up a sense of personal worth”). Accommodating this concern, we do make distinctions at this fine-grained level. For example, contextual meanings of transitive verbs can be compared to a more basic transitive meaning but not to a basic intransitive meaning.

We do not deny that there is a metaphorical connection between words of different word classes. However, this connection is not relevant for its use in discourse where a word applies to a specific referent. The focus is thus on a word’s use in discourse, not on word formation processes. While there may be different ways of operationalizing units of analysis, as illustrated above, what is most important is to be explicit about what kind of measure is selected. For the data analysis in this thesis I choose to work at word level and not to cross word class boundaries.

2.2.3 Tools

Moving away from intuition-based analysis, the Pragglejaz Group uses the *Macmillan English Dictionary for Advanced Learners* (Rundell, 2002) as a tool to check a word’s basic and contextual meanings. Macmillan is based on a fairly recent, well-balanced corpus of 220 million words, which makes it suitable for identifying metaphor in contemporary texts. Its language data stem from a broad range of text types and both written and spoken discourse. All this is crucial since we are working with contemporary news texts. In addition, the dictionary does not ignore the issue of metaphorical language, which suggests that there was some awareness of the issue (Pragglejaz Group, 2007, p. 16).

Steen (2007, p. 98) points out the advantage of relying on a dictionary rather than one’s intuitions:

(...) decisions about conventionalized meanings have been reached across the complete language, with reference to many patterns of

usage, and independently of any particular concerns with decisions about metaphor from a cognitive-linguistic perspective.

Analysts are likely to have different (linguistic) knowledge backgrounds. Therefore it may be

(...) convenient to adopt a dictionary as a concrete norm of reference, so that you have an independent reflection of what counts as the meanings of words for a particular group of users of English. (Steen, 2007, p. 97)

Furthermore, the use of dictionaries allows for checking and replicating decisions.

Checking word meanings in the dictionary also allows for a distinction (albeit gross) between conventional and novel expressions: following Semino (2008, p. 19), if the contextual meaning of a metaphorical unit is found in the dictionary it is conventional, and if it is not found it is novel. This procedure may be controversial at times because, like metaphor, the level of conventionality is a continuum rather than binary (Goatly, 1997, pp. 31ff). A binary distinction does, however, seem a legitimate approach if we see contemporary dictionaries as codifying language of the time of their publication as normative, thus making a categorical distinction (which is different from the flexible variability of actual language use). Thus if a metaphorical sense has not made its way into the dictionary yet, it is considered as novel.

Deignan (2005, p. 63) cautions, though, that data from dictionaries do not show how they are embedded in a wide, natural context. Each dictionary also has space constraints or a certain target audience (e.g. learners). This may influence how senses are described. An alternative tool may be a corpus to check for meaning distinctions between words. This requires determining a frequency threshold that a meaning needs to pass in order to be regarded as conventionalized. This is precisely the sort of task that does not need attending to when using dictionaries. Meanings that are found in dictionaries have passed a certain cut-off point that does not have to be determined by the metaphor researcher (Steen, 2007, p. 100).

Deignan (2005, p. 40) points out what the corpus research in this thesis will show as well: novel metaphor is infrequent. Thus the fuzziness of the boundary between novel and conventional uses is of minor concern. Obviously, the use of dictionaries for linguistic metaphor identification has its limitations. If an analyst is aware of these limitations, however, corpus-based

dictionaries can be an important and useful tool in moving away from guesswork and intuition. The analysts' linguistic metaphor identification is thus supported with carefully compiled language data.

Unlike the Pragglejazz Group (2007), we rely on two further dictionaries, for reasons that will be explained in the next two chapters. One of the dictionaries, the *Longman Dictionary of Contemporary English*, is also corpus-based. Like Macmillan, the corpus is relatively recent and well-sampled. It was compiled using the *Longman Corpus Network*, a 330 million-word database. The third tool is the *Oxford English Dictionary (OED)*, a historical dictionary (Krennmayr, 2008; Steen et al., 2010). We only make use of a historical dictionary in exceptional cases, which will be discussed in detail in Chapter 4. Since we deal with contemporary texts and assume the knowledge of the language of the present-day language user, we are generally not interested in identifying historical metaphor – words that have lost their original basic sense. For example, in the *Oxford English Dictionary* *fervent* not only has a sense referring to emotion but also one about temperature. If we check a contemporary dictionary, such as Macmillan, we only find a sense related to emotion, indicating that this meaning is not available anymore to the average language user of today (Deignan, 2005, p. 25). Since a contrast between two contemporary senses cannot be established, *fervent* in e.g. “a fervent admirer” is, according to MIP, not metaphorically used.

By using dictionaries, decisions about lexical units as well as about their metaphorical status can be constrained. While I acknowledge some shortcomings, the advantages predominate. Dictionaries are an independent source for checking contextual and basic meanings and, consequently, there is less need to rely on intuitions, which makes the identification more transparent – and contributes to reproducibility.

2.2.4 Various levels of analysis

The MIP procedure merely identifies linguistic metaphors as surface expressions of possible underlying cross-domain mappings, i.e. a mapping from a source to a target domain. It is *not* aimed at identifying conceptual metaphors. It is difficult but crucial to hold metaphors on a linguistic level and on a conceptual level apart, because they are not equivalent. “(...) linguistic forms do not express everything there is to conceptual structure” (Steen, 2007, p. 175). The relationship between these two levels of *conceptual* metaphor and *linguistic* metaphor is complex and easily conflated. Cameron (2003), as well,

notes that “the terminological distinction is not always maintained (...)” (p. 19).

An advantage of the bottom-up analysis of MIP is that refraining from presuming conceptual metaphors, in spite of what is suggested by Lakoff and Johnson (1980), reduces bias towards finding precisely those linguistic expressions that match the preconceived mapping. MIP, as a reliable procedure for identifying linguistic metaphor, prevents the researcher from seeing “(...) concrete manifestations of conceptual metaphors everywhere” (Steen, 2007, p. 27). In using MIP to find linguistic metaphor in discourse, metaphorically used words are regarded as a *basis* from which to construct cross-domain mappings (e.g. Crisp, 2002, p. 7). MIP identifies the metaphorically used words, but not the mappings.

Thus, having identified a linguistic metaphor does not automatically provide the researcher with its underlying conceptual structure. This is a separate step (cf. Steen, 1999), which is addressed in detail in Chapter 8. Keeping linguistic and conceptual metaphor identification separate adds rigor to the method in that it restricts itself to dealing with comparing and contrasting meanings as defined in the dictionary (Steen, 2007). It does not try to define conceptual structures, a process that is more difficult to constrain (Semino et al., 2004). For example, using MIP, it is easy to decide that *defend* in “I defend my thesis” is metaphorically used. Whether the underlying conceptual structure is based on the source domain of WAR, SPORTS or a more general domain of PHYSICAL VIOLENCE is more difficult to nail down.

The MIP procedure is also not concerned with the processing of metaphors by readers or listeners. As Charteris-Black (2004) points out, a metaphor that was intended as such is not necessarily interpreted metaphorically. At the same time, a metaphor that was not intended as such could be interpreted metaphorically (Goatly, 1997, p. 125). Thus, simply because linguistic metaphors, as identified by MIP, are present in a text, we cannot directly assume that they are also metaphors in people’s minds. In other words, the linguistic expressions identified as metaphorical by comparing and contrasting contextual and basic meanings are only *potentially* processed as a cross-domain mapping or experienced as metaphorical (Cameron, 2008, p. 198). When a source domain is activated or how people interpret metaphors are questions that concern a different level of analysis – the processing level. Whether metaphorical language is also psychologically real is investigated in Chapter 10.

As broadly laid out above, metaphor operates at several levels – the linguistic level, the conceptual level and the processing level. It is important to

keep these levels apart because each level needs different kinds of methods of analysis (e.g. Cameron, 1999b; Steen, 1994, 2007).

2.2.5 Measurement scale

Metaphor is a gradable phenomenon. The metaphorical status of how a lexical unit is being used is not always straightforward to pinpoint. For example, some researchers mention delexicalized verbs such as *give*, *get*, *have*, *make* or *put* as difficult for metaphor identification because they are relatively empty semantically (Cameron, 2003, p. 72-73; Deignan, 2005, p. 51). We found, however, that it is possible to locate contextual meanings of most delexicalized verbs in the dictionary and to determine their basic senses, which can then be contrasted with more abstract senses. In metaphor identification, they are therefore treated like any other verbs. For example, in “We will tackle *putting* our economy in order (...)” (A1P-fragment03) *putting* is used in its abstract sense of ‘to cause someone or something to be in a particular situation or state’. *Put* does have, however, a more concrete, basic meaning of ‘to move something to a particular position, especially using your hands’. In the present context it is thus metaphorically used. For some prepositions it is difficult to determine a basic meaning. Examples are *of* and *for*, which have never been marked as metaphorically used. Most other prepositions, such as for example *on* or *over*, have clear spatial meanings alongside their numerous abstract uses. For example, the contextual meaning of *over* in “(...) participation *over* the 30 years of his term (...)” (A1N-fragment09) is ‘during a period of time’. It has a more basic spatial sense, namely ‘above someone/something’. Since the two meanings can be understood in comparison with each other, *over* in the above example is marked as metaphorically used.

If judgments are made on a scale from metaphor to non-metaphor, quantifying metaphor becomes fuzzy and is difficult to control. For example, a researcher would have to decide on the number of increments on a scale. It is moreover doubtful whether different coders would make the same judgments when determining the metaphorical status of an expression on a scale (Steen, 2007, p. 92-93). Following the Pragglejaz Group (2007) example, reliability of analyst coding has been constantly monitored. Results have been good and are reported in Chapter 5. The addition of reliability testing distinguishes MIP and MIPVU clearly from work by Schmitt (2005) and the approach taken by Charteris-Black (2004), which otherwise do resemble the core of the MIP procedure.

An explicit procedure such as a MIP, which makes binary decisions on the metaphorical status of each lexical unit, allows for precision and systematicity and can deal with difficult cases in a transparent and consistent manner. This is important for a study that aims to find quantitative differences in metaphorical language use between the news register and other registers. In the present work words are assigned to three categories – metaphor, non-metaphor and borderline cases that are not clearly one or the other. Cases in the borderline category can be analyzed as a distinct phenomenon if relevant (details on that category will be explained in Chapters 3 and 4). Units that are in the non-metaphor category are not necessarily always literal. Some may, for example, have metonymic meanings. It also does not mean that the items in the metaphor category are only metaphorically used. The identification procedure used for building the database, however, aims at finding metaphorical use of words, which is the focus of this thesis.

This also means that indirect meaning arises by contrasting two different domains and not by contrasting meanings within the same domain, as is the case for metonymy. Metonymic thinking involves “one well-understood aspect of something to stand for the thing as a whole or for some other aspect of it” (Gibbs, 1994, p. 11). In our database, lexical units annotated for metaphor are thus labeled as metaphorically used based on a potential cross-domain mapping in conceptual structure.

2.3 Textual analysis

Metaphor identification based on systematic and explicit methods as sketched above lays the foundation for replicable metaphor analysis. Print journalism has been of particular interest for metaphor analysis because of its power to influence our thought and consequently our actions. Since news plays an important role in public life, it is one main source of shaping opinions and generating actions. To unravel the function of metaphor in newspaper language, it is vital not merely to analyze isolated examples. Metaphor needs to be examined as it occurs in news discourse, taking into account the context in which news articles are embedded. This calls for integrating “word-sense, syntactic form, pragmatic context, speaker-listener relationship, and goals, over time” (Honeck, 1980, p. 42).

Cameron (2003, p. 89) has measured metaphorical language use of different grammatical forms and has found that the bulk of all metaphorically used words in her data of classroom talk were prepositions and verbs, followed

by nominal metaphors and a small proportion of adjectives and adverbs. Such unequal distribution may point to different functions of metaphorically used words across word classes. While these figures are representative of classroom talk, the results cannot be extrapolated to other kinds of discourse. Since metaphorical expressions as used in real discourse are always embedded in a specific communicative context, functions may vary depending on, for example, the goal of the speakers or the context. Indeed Cameron (2008, p. 199) observed differences in metaphor density in conversations that clearly differ from each other in structure and goals (reconciliation talks, doctor-patient interviews, classroom talk).

Such differences suggest that metaphor analysis needs to take register variation into account. Registers vary not only across linguistic dimensions but also across situational characteristics such as, for example, the production circumstances (e.g. on-line talk or written text), communicative purposes (e.g. to persuade, to entertain etc.) or the participants involved in the communicative act. These factors have been shown to correlate with linguistic characteristics of registers, such as the use of word classes (Biber, 1988, 1995; Biber, Conrad, & Reppen, 1998). Metaphorical expressions are another linguistic factor that may contribute to register differences. In Cameron's (2003, p. 102) data, for instance, teachers purposefully employed metaphor mainly to explain difficult concepts, whereas such metaphor use in student language was largely found in playful discourse between themselves. This diverging metaphor use may be attributed to differing relationships between speakers.

Since linguistic choices may serve as rhetorical strategies of speakers or writers, Charteris-Black (2004, pp. 8-9) urges to include pragmatic factors into metaphor analysis, because metaphors in discourse are always embedded in a specific communicative context. While news articles may aim for objectivity, they do transport opinions based on what is said, how it is said and what is left out. Analyzing pragmatic factors can be helpful in revealing rhetorical goals, for instance in political news reports, since the persuasive power of metaphors is not always immediately obvious. While metaphors in the press may be selected because they raise interest or are particularly accessible, they may also be chosen for ideological reasons (Charteris-Black, 2004, p. 115).

Moreover, metaphor analysis can make transparent how metaphor creates cohesion across sentences and paragraphs and contributes to overall coherence (Charteris-Black, 2004, pp. 121, 153). For example, use of the same source domain over larger stretches of text, repeating the same metaphorical expression or choosing metaphorical expressions that are derived from the

topic of the text (e.g. “diplomatic desert” in the context of describing conflicts in Africa (Semino, 2008, p. 27)), may not only establish coherence but may also create rhetorical effects.

In order to understand metaphorical language use in news discourse, it is thus essential to consider the context in which newspaper language is situated, which is distinct from contexts of other language varieties such as conversations or academic discourse. An analysis of the metaphorical uses of different words classes as well as patterns of metaphorical expressions helps to reveal the function a metaphorical expression may have in a certain text or context (Semino, 2008, p. 22).

2.4 Conclusion

There are multiple ways of approaching the identification of metaphor in discourse. A fundamental decision is for a top-down (from conceptual to linguistic metaphor) or bottom-up approach (from linguistic metaphor to conceptual metaphor). For the present research, a bottom-up approach was chosen. It maintains a strict division between the linguistic level of identifying metaphorically used words in text and the conceptual level of determining source and target domains and formulating mappings. Using corpus-based dictionaries as tools, metaphorical language is detected by comparing and contrasting contextual and basic senses of the lexical units (at the word level) to be analyzed. This method adds clarity and reliability to the procedure because checking word senses of single headwords in the dictionary is relatively straightforward to operationalize – at least compared to determining underlying conceptual mappings. The metaphorically used words identified in the texts are not necessarily also cognitively processed by comparison. They merely carry the potential of being metaphorical in people’s minds.

In this thesis, metaphor is understood as the exploitation of the conceptual structure of one domain in order to indirectly characterize another domain. Metaphor in conceptual structure, i.e. a potential cross-domain mapping, surfaces linguistically in several ways. The focus lies on indirect metaphor (a contextual and a more basic sense can be compared), direct metaphor (the source domain is expressed without reverting to a more basic meaning) and implicit metaphor (the language does not require a non-literal comparison but the expression is linked to a metaphorical expression in conceptual structure). Since one goal of this project is to quantify metaphorical language use in news texts, it is preferable to assign metaphorically used words

to distinct categories (metaphor, non-metaphor and borderline cases) even though metaphor is clearly a gradable phenomenon.

The strict division of levels of analysis (linguistic, conceptual, behavioral) and a transparent procedure that has been tested for reliability allow building a database that sets solid groundwork for any further quantitative and qualitative research. While progress has been made in automatic metaphor recognition by computer programs, this careful manual annotation still outperforms machines by far. The following two chapters detail the procedure and explicate the application of each of its steps.

While metaphor in news has featured in numerous academic articles, to date there is no research that gives a precise picture about how common metaphor in news actually is. The explicit and systematic method of metaphor identification used in this research forms the basis for well-founded quantitative analysis that has been lacking so far. While research on metaphor in different registers points to differences in metaphor use in news texts compared to other registers, such as conversation, academic discourse or literary texts, such differences have not yet been quantified using large-scale data. By comparing metaphor in news to metaphor in conversation, academic texts and fiction, Chapter 5 investigates the frequency and linguistic form of metaphor in news compared to other registers, revealing what is special about (metaphorical) newspaper language. This quantitative examination is followed by a qualitative analysis in order to highlight how metaphor in news is typically used and how its use is connected to textual characteristics and the situational context in which newspapers are embedded.

Analyzing metaphor in news and setting it off from metaphor use in other registers can reveal shared qualities of metaphor that may, along the lines of cognitive metaphor theory, point to general underlying patterns in language and thought. At the same time, such analysis may uncover register or text-specific differences that expose different functions of metaphor use in news discourse.

CHAPTER 3

MIPVU: A manual for identifying metaphor-related words

This chapter presents the complete procedure for finding metaphor-related words that has been utilized in my research.⁶ The style is in the form of a set of instructions. Qualitative discussions of methodological issues that have arisen in the course of its development can be found in the next chapter. Results on the reliability of the procedure for news texts as well as quantitative empirical results of its application are reported in Chapter 5.

The present chapter is intended to be an independent presentation of the procedure as an autonomous tool. It may be used as a reference manual by anyone who aims to find metaphor-related words in usage. The term ‘metaphor-related words’ is used to suggest that the tool aims to identify all words in discourse that can be taken to be lexical expressions of underlying cross-domain mappings.

3.1 The basic procedure

The goal of finding metaphor in discourse can be achieved in systematic and exhaustive fashion by adhering to the following set of guidelines.

1. Find metaphor-related words (MRWs) by examining the text on a word-by-word basis.

⇒ For information about whether an expression counts as a word, consult Section 3.2.

⁶ This chapter is adapted from Chapter 2 of Steen et al. (2010), which has been co-published by members of the analyst team. Changes introduced to the text of the book chapter are minimal and exclusively stylistic. For example, I have added references to other chapters of this thesis and removed references to other chapters of the book. I employ the pronoun ‘we’ rather than ‘I’ since this procedure is a group product.

2. When a word is used indirectly and that use may potentially be explained by some form of cross-domain mapping from a more basic meaning of that word, mark the word as metaphorically used (MRW).

⇒ For information about indirect word use that is potentially explained by cross-domain mapping, consult Section 3.3.

3. When a word is used directly and its use may potentially be explained by some form of cross-domain mapping to a more basic referent or topic in the text, mark the word as direct metaphor (MRW, direct).

⇒ For more information about direct word use that is potentially explained by cross-domain mapping, consult Section 3.4.

4. When words are used for the purpose of lexico-grammatical substitution, such as third person personal pronouns, or when ellipsis occurs where words may be seen as missing, as in some forms of co-ordination, and when a direct or indirect meaning is conveyed by those substitutions or ellipses that may potentially be explained by some form of cross-domain mapping from a more basic meaning, referent, or topic, insert a code for implicit metaphor (MRW, implicit).

⇒ For more information about implicit meaning by substitution or ellipsis that is potentially explained by cross-domain mapping, consult Section 3.5.

5. When a word functions as a signal that a cross-domain mapping may be at play, mark it as a metaphor flag (MFlag).

⇒ For more information about signals of cross-domain mappings, consult Section 3.6.

6. When a word is a new-formation coined by the author, examine the distinct words that are its independent parts according to steps 2 through 5.

⇒ For more information about new-formations, consult Section 3.7.

The use of the phrase ‘potentially explained by a cross-domain mapping’ is intentional. It should be read with an emphasis on ‘potentially’. This links up with the tenuous connection between linguistic and conceptual metaphor identification discussed in Chapter 2.

As for the relation with MIP (Pragglejaz Group, 2007), points 1 and 2 are essentially the same as MIP. Points 3 and 4 deal with two additions to MIP in the area of other forms of metaphor. Point 5 is a different kind of addition to MIP and includes the identification of signals of metaphor. And point 6 takes one assumption of MIP to its linguistic conclusion by including instructions for handling new lexical units.

3.2 Deciding about words: lexical units

The word is the unit of analysis which is examined for metaphorical use. There are other possibilities, such as the morpheme or the phrase, and these can account for additional metaphor in usage. However, we do not mark these other possibilities, because we can only do one thing at a time. Focusing on the word as the unit of analysis is already a most challenging and complex operation. It is motivated by a functional relation between words, concepts and referents in discourse analysis (van Dijk & Kintsch, 1983).

A systematic and explicit approach to the relevant unit of analysis is crucial for a consistent and correct quantitative analysis of the data. Lack of clear guidelines may introduce a substantial degree of error and therefore noise into the numbers and patterns obtained. It would undermine detailed quantitative comparison between distinct studies.

For theoretical reasons, we will call the word a 'lexical unit'. In adopting this terminology, we follow the Pragglejaz Group (2007). When you decide about the boundaries of lexical units, the following guidelines should be adopted.

3.2.1 General guideline

In our project, the data come from the British National Corpus, and we therefore follow most of the BNC practice for deciding what counts as a lexical unit. In other projects with other materials, these guidelines may or may not have to be adjusted to the other source. In our research, the dependence on these materials means two things:

1. All words provided with an independent Part-Of-Speech (POS) tag in the corpus are taken as separate lexical units.

For instance, prepositions are coded as PRP, nouns are coded as NN, and so on. A full list of tags is available from the BNC website: www.natcorp.ox.ac.uk.

2. All so-called polywords in the corpus are taken as single lexical units.

There are a number of fixed multi-word expressions that are analyzed as one lexical unit in the BNC, on the grounds that they are grammatical units which designate one specific referent in the discourse. Examples include *a good deal*, *by means of*, and *of course*. These multi-word expressions are called polywords. They have special tags and are available in a finite list from the BNC website: www.natcorp.ox.ac.uk. You should follow this practice and, in particular, not examine the parts of these polywords for potential metaphorical meaning.

3.2.2 Exceptions

There are three exceptions to our overall acceptance of BNC practice: phrasal verbs, some compounds, and some proper names.

Phrasal verbs are verbal expressions consisting of more than one word, such as *look up* or *turn on*. These are not taken as single lexical units in the BNC, but as independent verbs followed by autonomous adverbial particles. We will not follow this practice, for phrasal verbs function as linguistic units designating one action, process, state or relation in the referential dimension of the discourse. In that respect, they are similar to polywords.

You should therefore treat all phrasal verbs as single lexical units: their individual parts do not require independent analysis for potential metaphorical meaning. The phrasal verb as a whole, however, can still be used metaphorically. For instance, setting up an organization is a metaphorical variant of setting up a roadblock. The classification of two or more words as part of one phrasal verb should be marked as such in the data.

The problem with phrasal verbs is their superficial resemblance to prepositional verbs (i.e. a frequent verb-preposition combination) and to verbs followed by free adverbs. The latter two cases should be analyzed as free combinations consisting of two independent lexical units, as opposed to phrasal verbs which should be taken as only one. Again, the motivation for this approach is the assumption of a functional and global correspondence between words, concepts, and referents.

One way to tell these three groups apart is by examining their POS tags in the BNC. Particles of phrasal verbs have received an AVP code, prepositions of prepositional verbs a PRP code, and freely occurring adverbs an AV0 code. These are classifications which have been made independently of any questions about metaphorical use; they are based on a general approach to data analysis, which is a bonus.

However, the matter is further complicated in three ways. When we go to the dictionaries used in our research for examining contextual and basic meanings, it appears that they do not distinguish between phrasal verbs and prepositional verbs. They in fact call both types phrasal verbs. An example is *look at* in a sentence like “it was only when you *looked at* their faces that you saw the difference”. According to Macmillan this is a phrasal verb, but the BNC code for *at* is PRP, indicating that it is a prepositional verb. We follow the BNC’s decision, which means that you have to analyze *look* and *at* as two lexical units and independently examine their main senses in the dictionary to find their respective basic meanings; the contextual meaning of each of them in their combined use, even as a prepositional verb, however, will be found under the phrasal meaning of the combination.

Secondly, some of the verb+particle combinations marked as such in the BNC are in fact not conventionalized phrasal verbs. That is, they are not phrasal verbs according to the dictionary. An example is *look up* in a sentence like “she *looked up* into the sky”. Here *up* is coded as AVP in the BNC, suggesting that this is a proper phrasal verb. However, the Macmillan dictionary tells us that the contextual meaning – ‘to direct your eyes towards someone or something so that you can see them’ – is not one of the meanings of the phrasal verb (unlike, for instance ‘to try to find a particular piece of information’). The contextual meaning, instead, is the result of a free combination of a verb plus an adverb. BNC has probably made a mistake here; the words consequently have to be analyzed as two separate lexical units.

Thirdly, there is the matter of complex phrasal verbs, such as *make up for* or *do away with*. These may be easily confused with combinations of simple phrasal verbs with a preposition (*make up + for* or *do away + with*). However, they are typically listed as complete, complex phrasal verbs in the Macmillan dictionary, as run-ons after the main verb, and they can be replaced by a synonym (*compensate* and *get rid of*). Because of this referential unity, we follow the dictionary for complex phrasal verbs and take the dictionary classification of these complex verbs as single units as our guideline.

Taking all of this into consideration, we have established the following rules for simple phrasal verbs (complex phrasal verbs being recognizable by the criteria above):

- (a) If the POS tag is PRP then we are dealing with a prepositional verb → analyze the verb and the preposition separately (i.e. two lexical units).
- (b) If the POS tag is AVP then check in the dictionary whether the combination of verb+particle has been listed as a phrasal verb meaning in the relevant contextual meaning
 - if this is the case, then we accept it is a phrasal verb and analyze the combination as one lexical unit;
 - if this is not the case, then we do not take the combination to be a conventionalized phrasal verb and therefore we analyze the verb and the particle separately (i.e. two lexical units).
- (c) If the POS tag is AV0 then we are dealing with a verb followed by a free adverb → analyze as two lexical units.
- (d) If the POS tag is PRP/AVP then apply the tests below to determine whether we are dealing with a phrasal or a prepositional verb.
- (e) If the BNC code is clearly wrong (supported by the above criteria or the tests below) then apply the proper analysis and add a comment in the materials stating “incorrect POS tag: PRP not AVP”.

Tests for deciding between phrasal/prepositional verbs

In prepositional verbs:

- The preposition and following noun can be moved to the front of the sentence, which is not possible with phrasal verb particles (e.g. *Up into the sky she looked* but not **Up the information she looked*).
- An adverb can be inserted before the preposition (e.g. *She ran quickly down the hill* but not **She ran viciously down her best friends*).
- The preposition can be moved to the front of a *wh*-word (e.g. *Up which bill did he run?* but not **Up which bill did he run?*).

In phrasal verbs:

- The adverbial particle can be placed before or after the noun phrase acting as object of the verb, which is not possible for the prepositional verbs (e.g. *She looked the information up* but not **She looked his face at*).

- If the noun phrase is replaced by a pronoun, the pronoun has to be placed in front of the particle (e.g. *The dentist took all my teeth out* > *The dentist took them out* but not *She went through the gate* > **She went it through*).

Compounds are single lexical units consisting of two distinct parts, which may cause orthographical problems. They can be spelt in three ways: as one word, as two hyphenated words, and as two separate words.

- (a) When a compound noun is spelt as one word, such as *underpass*, and can be found as such in the dictionary we treat it as one lexical unit designating one referent in the discourse.
- (b) When a compound noun is spelt as two hyphenated words and can be found as such in the dictionary, such as *pitter-patter*, we similarly treat it as one lexical unit. However, if we are dealing with a novel formation unknown to the dictionary, the compound noun is analyzed as two separate units, even though it may have one POS tag in the corpus. Our reason for this practice is that the language user is forced to parse the compound into its two component parts in order to establish the relation between the two related concepts and referents. This also applies to hyphenated compound nouns created through a productive morphological rule but that are not listed as a conventionalized compound in the dictionary (such as *under-five*).
- (c) In the BNC, compound nouns that have been spelt as two separate words are not taken as single lexical units, but analyzed as combinations of two independent words which each receive their own POS tags. When such compounds are conventionalized and, again, function as lexical units designating one referent in the discourse, we will not follow the BNC solution. For then they are like polywords, and should be treated as single lexical units, whose parts do not require analysis for potential metaphorical meaning.

The Macmillan dictionary has a tell-tale signal for identifying conventionalized compounds that are spelt as two distinct words: when a fixed expression is taken to be a compound noun, there is primary stress on the first word and secondary stress on the second word (e.g. *'power plant*). In cases where the Macmillan dictionary treats a multi-word combination as having one meaning, but displays a reversed stress pattern (such as *,nuclear 'power*), we do not treat the multi-word expression as a compound noun, and analyze it as consisting of two separate lexical units.

- Rules a and b also apply to compound adverbs and adjectives, such as *honey-hunting*. This example is a novel formation unknown to

Macmillan. Therefore, following rule b, the adjective is analyzed as comprising two separate lexical units, even though BNC has given it one POS tag.

- Words may be spelt in more than one way, which may cause problems about the independent status of their components in some cases. An example is when the preposition *onto* is spelt as two words instead of one. When this happens, we will adhere to the spelling of the dictionary instead of the spelling of the document under analysis, because the dictionary is the more general reference work and related to accepted norms for language users. You should therefore analyze words according to their spelling in the dictionary, not according to their spelling and POS tagging in the corpus.

Proper names appear to form a special group in our analyses. There are several subclasses which we have encountered, which may not all technically qualify as genuine proper names. They will be discussed one by one. In general, however, proper names do not require any specific additional coding.

Our general strategy is to reduce the number of exceptions to POS tagging as provided by the BNC corpus. The solution to annotation problems proposed below is maximally simple: every separate word will be treated as a separate lexical unit, except for the underlined cases.

- (a) Proper names: all parts of genuine proper names are to be treated in the way of regular POS tagging. That is, *Roy Wood* and *Madame Mattli* are coded as two separate words and taken as two lexical units. This can be extended to addresses, with house numbers as well as road names all being cut up into separate lexical units. As a result, *New York* (in *New York Herald Tribune*) is also two units.
- (b) Some proper names have been bestowed on public entities and may appear in the dictionary. If they do, they are to be treated as all other expressions in the dictionary: thus, *Labour Party* becomes one lexical unit because it has the stress pattern of a compound.

The same holds for some titles that appear in the dictionary, such as *Pulitzer Prize*, which is also treated as one lexical unit on the basis of the stress pattern.

In our annotations, these expressions should be treated similar to phrasal verbs, compounds, and polywords and should therefore receive a code to indicate that the words form single lexical units.

Green Paper and *White Paper*, by contrast, are to be treated as containing two lexical units, because they have rising stress (*Green* and *White* would always be marked as related to metaphor).

The elements of names of countries (e.g. *United Kingdom*) and organizations (e.g. *United Nations*) that have rising stress in the dictionary should also be treated as separate units.

- (c) Other names and titles do not appear in the dictionary. They are also treated as composites of their independent words, both by the BNC and by us. This accounts for two lexical units in *Labour Law*, *Executive Committee*, *European Plan*, *Scarman Report*, and even more lexical units in *the Student Winter Games*, *the Henley Royal Regatta*, *the Criminal Law Revision Committee*, *House of Oliver*, and so on.
- (d) A separate problem is constituted by genuine titles, that is, titles of texts:
- If titles are used as titles, that is, as headings of newspaper articles or chapters and sections of novels and academic writing, they need to be taken on a word-by-word basis. This is because they summarize or indicate content by means of words, concepts, and referents. They are regular cases, if linguistically sometimes odd.
 - If titles are mentioned, however, to refer to for example a text or a TV program, they function as names, like proper names. If they are in the dictionary, check their stress pattern; if they are not, use BNC-Baby as a guide.

3.3 Indirect use potentially explained by cross-domain mapping

Indirect use of lexical units which may be explained by a cross-domain mapping is basically identified by means of MIP, with some adjustments. This means that the following guidelines should be adopted.

1. Identify the contextual meaning of the lexical unit.
 - ⇒ For more information, see Section 3.3.1.
2. Check if there is a more basic meaning of the lexical unit. If there is, establish its identity.
 - ⇒ For more information, consult Section 3.3.2.

3. Determine whether the more basic meaning of the lexical unit is sufficiently distinct from the contextual meaning.

⇒ For more information, see Section 3.3.3.

4. Examine whether the contextual meaning of the lexical unit can be related to the more basic meaning by some form of similarity.

⇒ For more information, consult Section 3.3.4.

If the results of instructions 2, 3, and 4 are positive, then a lexical unit should be marked as a metaphor related word (“MRW”), which may be made more precise by adding the information that it is ‘indirect’ (as opposed to ‘direct’ or ‘implicit’, see below).

3.3.1 Identifying contextual meanings

The contextual meaning of a lexical unit is the meaning it has in the situation in which it is used. It may be conventionalized and attested, and will then be found in a general users’ dictionary; but it may also be novel, specialized, or highly specific, in which case it cannot be found in a general users’ dictionary.

When you identify the contextual meaning of a lexical unit, several problems may arise.

1. When utterances are not finished, there is not enough contextual knowledge to determine the precise intended meaning of a lexical unit in context. In such cases, it may be that the lexical unit has been used indirectly on the basis of a metaphorical mapping, but this is impossible to decide. In such cases, we will discard for metaphor analysis all relevant lexical units in aborted utterances.

An example is “Yeah I had somebody come round and *stuck* their *bloody* (...)” The lexical units in the incomplete utterance in question (beginning with *stuck*) that could or could not have been related to metaphor should be marked as Discarded For Metaphor Analysis (add code ‘DFMA’ to each of them).

2. When there is not enough contextual knowledge to determine the precise intended meaning of a lexical unit in context, it may be that it has been used indirectly on the basis of a metaphorical mapping, but this may be impossible to decide.

- (a) An example is the use of *up* to indicate movement towards, where it is possible that the target is either higher (not metaphorical) or not higher (metaphorical) than the speaker.
- (b) Another example is the use of idioms such as *gasp for breath* or *turn your shoulder*, approached as three lexical units, where it is possible that the designated action in fact takes place and thereby stands for the emotion (metonymy), or the designated action in fact does not take place so that the phrase is used metaphorically to indicate the concomitant emotion.
- (c) A third example involves anaphora which may be interpreted in more than one way, as in *all that* in the following example, where a possible metaphorical interpretation is applicable: “he said I come to sup be supervisor he said, I don’t know, I don’t wish to learn *all that!*”

In such cases of lack of situational knowledge but with a potential for metaphorical meaning, you have to treat the word as if it was used indirectly and metaphorically, on the basis of the general rule ‘When In Doubt, Leave It In’ and add the special code ‘WIDLII’.

3. Specialist terminology may constitute a specific case of insufficient contextual knowledge to determine the precise intended meaning of a lexical unit in context. When there is not enough contextual knowledge to determine the specific technical and/or scientific meaning of a word in context, regular dictionaries cannot help. In such cases, it would of course be possible to use other, preferably specialized dictionaries to find out the specific contextual meaning of a term. However, for this project we assume that metaphor is ‘metaphor to the general language user’: if we as general language users cannot establish the meaning of the lexical unit with the contemporary dictionaries alone but the lexical unit could be metaphorical on the basis of some contextual meaning projected from the basic – nontechnical – meaning, we also mark the word as metaphor-related based on ‘WIDLII’.
4. Sometimes the contextual meaning of a lexical unit may be taken as either metaphorical or as not metaphorical. This seems to be the case for many personifications, such as *furious debate* or *this essay thinks*. These examples may be analyzed as involving a metaphorical use of *furious* and *thinks*, respectively, but they may also be resolved by a metonymic interpretation of the other terms, i.e. *debate* and *essay*, in which case *furious* and *thinks* automatically turn non-metaphorical. In such cases, the possibility of the metaphorical interpretation should not be lost, and you should mark the

relevant ambiguous words *furious* and *thinks* as metaphor related words, and add a comment that this is due to a possible personification.

3.3.2 Deciding about more basic meanings

A more basic meaning of a lexical unit is defined as a more concrete, specific, and human-oriented sense in contemporary language use. Since these meanings are basic, they are always to be found in a general users' dictionary. A meaning cannot be more basic if it is not included in a contemporary users' dictionary.

From a linguistic point of view, a more basic meaning of a word is its historically older meaning. However, from a behavioral point of view, this definition may not be optimal. Most language users are not aware of the relative ages of the various meanings of most words in the contemporary language. This means that the linguistic notion of basic sense as the historically prior sense has little relevance to the behavioral, in particular cognitive, notion of basic sense.

However, it is one of the fundamental claims of contemporary metaphor theory that most of the historically older meanings of words are also more concrete, specific, and human-oriented. This is explained by the cognitive-linguistic assumption of experientialism (Lakoff & Johnson, 1980). As a result, concrete meanings are typically also basic meanings from a historical perspective.

The still largely programmatic assumption of a connection between historically prior meanings and concrete, specific, and human-oriented meanings makes it possible for us to adopt one practical and consistent general starting point about basic meanings: they can be operationalized in terms of concrete, specific, and human-oriented meanings. This is our general definition for basic meanings.

As a result, we will not check the history of each lexical unit as an integral part of our procedure. This is a huge practical advantage, which is based in general cognitive linguistic practice. Diachronic considerations of basic meanings may only come in when specific problems arise.

When attempting to find basic meanings in the dictionary, the following guidelines should be adopted.

1. A more basic sense has to be present for the *relevant grammatical category of the word-form* as it is used in context. This is because a grammatical category in a text specifies a particular class of concept and referent, which may not

be altered when looking for basic meanings, for otherwise the basis of comparison is shifted. When the dictionary shows that a word may be used in more than one grammatical category, you hence have to examine the various meanings of the word within its grammatical category.

Contextual and basic meanings are therefore contrasted as two alternative uses for the same word form *in the particular grammatical role that it has in the text*. As a result,

- (a) the contextual meaning of nouns, verbs, adjectives, adverbs, prepositions, and interjections cannot be compared with the meaning of other word classes for the same lemma (conversions); for instance, the meaning of *shift* as a noun should be analyzed irrespective of the meaning of *shift* as a verb.
- (b) the contextual meaning of verbs used as linking verbs, primary verbs, modal verbs, verbs initiating complex verb constructions such as *start*, *stop*, *continue*, *quit*, *keep*, and so on, causative verbs (*have*, *get*, and so on), and full verbs cannot be compared with the meaning of the same verbs used in other roles.
- (c) the contextual meaning of verbs used transitively can as a rule not be compared with the meaning of the same verbs used intransitively.
- (d) the contextual meaning of nouns used to designate countable entities can as a rule not be compared with the meaning of the same nouns used to designate uncountable entities.

However, there are a number of complications:

2. When a word may be used in more than one grammatical category, but its description in the dictionary is limited to one of those categories only, you inevitably have to compare the various meanings of the word in the other grammatical categories with reference to that one grammatical category. Example: the contextual and basic meanings of *suppression* have to be examined with reference to the description of *suppress*.
3. When verbs are described under a single sense description in the dictionary as both Transitive and Intransitive, then you may compare these Transitive and Intransitive meanings with each other in order to determine whether the contextual meaning may be differentiated from a more basic meaning in the same sense description.
4. Sometimes lexical units have an abstract contextual meaning that is general which has to be contrasted with a concrete meaning that is specialized, for instance because it is limited to a style (e.g. very [in]formal), a subject (business, computing, journalism, law, linguistics, medicine, science, and so

on), or period (literary, old-fashioned). In that case, we abide by our general rule for finding basic senses and take the most concrete sense as basic, even if it is specialized. Example: the concrete medical sense of *palliate* is basic and the general abstract sense of *palliate* is therefore metaphorical.

5. The reverse of [4] also applies: when a lexical unit with an abstract but specialized contextual meaning has to be contrasted with a concrete but general meaning, we also take the concrete sense as basic. Example: the abstract religious sense of *father*, *mother*, and so on is not basic, whereas the concrete general sense is. Therefore the religious senses are metaphorical.
6. When the contextual meaning of a lexical unit is just as abstract/concrete as some of its alternative meanings, we have to check whether there is any indication of the (original) domain from which the word derives. For instance, there are verbs such as *trot* and *roar*, which may be applied with equal ease to a range of concrete entities, but the nonhuman, animal origin (basic sense) of the lexical units decides which applications are metaphorical and which are not.
7. However, other lexical units may have a less clear domain of origin, such as the verb *ride*. It is presented in the Macmillan dictionary as monosemous between animal and artifact. If we suspect that there is a problem with the dictionary description because of its function as an advanced learners' dictionary, we check the evidence in a second advanced learners' dictionary, Longman. For instance, the verb *to groom* does not have distinct senses for people and animals in Macmillan, but it does in Longman; as a result, we rely on Longman to conclude that the two senses are sufficiently distinct. By contrast, *transform* has one general sense in Macmillan, which is corroborated by the Longman dictionary.

3.3.3 Deciding about sufficient distinctness

Metaphorical meanings depend on a contrast between a contextual meaning and a more basic meaning. This suggests that the more basic meaning has to be sufficiently distinct from the contextual meaning for the latter to be seen as potentially participating in another semantic or conceptual domain. The following practical guideline should be followed:

1. When a lexical unit has more than one separate, numbered sense description within its grammatical category, these senses are regarded as sufficiently distinct.

2. When a lexical unit has only one numbered sense description within its grammatical category, this counts as the basic sense and any difference with the contextual sense of the item under investigation will count as sufficient distinctness.

3.3.4 Deciding about the role of similarity

When you have two sufficiently distinct meanings of a lexical unit and one seems more basic than the other, these senses are potentially metaphorically related to each other when they display some form of similarity. This typically happens because they capitalize on external or functional resemblances (attributes and relations) between the concepts they designate. It is immaterial whether these resemblances are highly schematic or fairly rich.

In deciding about a relation of similarity between the contextual and the basic sense of a lexical unit, the following practical guidelines should be followed:

1. When a lexical unit has a general and vague contextual sense which looks like a bleached, abstracted relation of a rather specific and concrete sense, you should mark the word as metaphorically used when the two senses are distinct enough and can be related via similarity. This is typically the case for senses that may be distinguished as concrete versus abstract.

It should be noted that similarity is not the same as class-inclusion, as in the case of synecdoche. Thus, for *appeal* we have an abstract general sense and a more concrete but also specialized legal sense. If we decide that the latter is basic because it is more concrete, then the general sense of *appeal* is a case of generalization instead of similarity, and it can therefore be treated as a case of synecdoche instead of metaphor. This should be contrasted with a case like *palliate*, where we see both generalization and similarity based on metaphorical mapping from concrete (relieve physical pain) to abstract (relieve generally bad situations of their most serious aspects).

2. When a lexical unit has an abstract contextual sense and a sufficiently distinct, concrete more basic sense, but there does not seem to be a relation of similarity between the two even though there does seem to be *some* sort of relation, check the *Oxford English Dictionary* to deepen your understanding of the word. In such a case, the two senses may be historically related via a common source which may have disappeared

from the language. Checking the OED may explain the strange relation between the current abstract and concrete senses and support the decision *not* to take the concrete sense as basic for the abstract sense, but instead to take both senses as equally basic because there is no transparent relation of similarity for the contemporary language user. We have seen this for a word like *order* ('arrangement' and 'bringing about of order by speech act').

3. When two senses appear to be metonymically related, this does not mean that you should not also consider the possibility that they are metaphorically related at the same time. Sense relations may have more than one motivation.

3.4 Direct use potentially explained by cross-domain mapping

Directly used lexical units that are related to metaphor are identified as follows:

1. Find local referent and topic shifts.
 - Good clues are provided by lexis which is “incongruous” (Cameron, 2003; Charteris-Black, 2004) with the rest of the text.
2. Test whether the incongruous lexical units are to be integrated within the overall referential and/or topical framework by means of some form of comparison.
 - Good clues are provided by lexis which flags the need for some form of similarity or projection (Goatly, 1997).
3. Test whether the comparison is nonliteral or cross-domain.
 - Cameron (2003, p. 74) suggests that we should include any comparison that is not obviously non-metaphorical, such as *the campsite was like a holiday village*. Consequently, whenever two concepts are compared and they can be constructed, in context, as somehow belonging to two distinct and contrasted domains, the comparison should be seen as expressing a cross-domain mapping. Cameron refers to these as two incongruous domains.
4. Test whether the comparison can be seen as some form of indirect discourse about the local or main referent or topic of the text.

- A provisional sketch of a mapping between the incongruous material functioning as source domain on the one hand and elements from the co-text functioning as target domain on the other should be possible.

If the findings of tests 2, 3, and 4 are positive, then a word should be marked for direct metaphor ('MRW, direct').

3.5 Implicit meaning potentially explained by cross-domain mapping

The previous forms of metaphor were explicit in that there is at least one word in the discourse which comes from another semantic or conceptual domain. Implicit metaphor is different and does not have words that clearly stand out as coming from an alien domain. It comes in two forms, implicit metaphor by substitution and implicit metaphor by ellipsis. Following Halliday and Hasan (1976), metaphor by substitution works through pro-forms such as pronouns, and metaphor by ellipsis works through non-existent words which may be inserted into grammatical gaps. Both types therefore do not exhibit ostensibly incongruous words, but still need to be analyzed as the linguistic expression of metaphor in natural discourse.

When a discourse uses lexical units for the purpose of substitution and thereby still conveys a direct or indirect meaning that may be explained by some form of cross-domain mapping from a more basic meaning, referent, or topic, insert a code for implicit metaphor ('implicit'). An example is: "Naturally, to embark on such a step is not necessarily to succeed immediately in realising *it*". Here *step* is related to metaphor, and *it* is a substitution for the notion of *step* and hence receives a code for implicit metaphor ('MRW, impl').

When a text displays ellipsis and still conveys a direct or indirect meaning that may be explained by some form of cross-domain mapping from a more basic meaning or referent than the contextual meaning recoverable from the presumably understood lexical units, insert a code for implicit metaphor ('implicit'). An example is *but he is*, which may be read as *but he is [an ignorant pig]*, when that expression is taken as a description of a male colleague discussed before. The verb *is* may be coded as a place filler by the code <MRW, impl>.

In general, for implicit metaphor, we need one linguistic element of cohesion (which means substitution or ellipsis, including what Halliday and

Hasan call ‘reference’) that is not necessarily metaphorical by itself but refers back to a previous word and concept that was metaphorically used. Potential elements of cohesion include third person pronouns, primary and modal verbs, and so on.

- The first step in finding implicit metaphor will therefore be to decide whether a particular linguistic form from a list of potentially cohesive devices has in fact been used for cohesion as opposed to another function.
- The second step is to decide whether the cohesion device is related to another word that was related to metaphor.

In principle it is possible for both demonstratives as well as general words such as *thing* and *stuff* to refer back to a metaphorically used expression. In that case, they are both indirectly metaphorical (because of their linguistic status) as well as implicitly metaphorical (because of their connection to a metaphorical concept in the text base). For this type of case we should add a code which combines ‘met’ with ‘impl’: ‘metimpl’.

Finally, tag questions within the same utterance are not included in our view of cohesion. They are grammatical forms enabling a particular form of asking a question. There is no alternative where the pro-forms in the tag could be replaced by full noun or verb phrases. This is why these are not part of cohesion. (However, when parts of utterances are repeated by subsequent speakers in order to ask or confirm or deny what the preceding speaker said, these are core cases of cohesion).

3.6 Signals of potential cross-domain mappings

Lexical signals of cross-domain mappings are those words which alert the language user to the fact that some form of contrast or comparison is at play (cf. Goatly, 1997).

1. We focus on potential markers of simile and analogy and so on, such as *like, as, more, less, more/less ... than*, comparative inflection plus *than*, and so on. But we also include more substantial lexical markers such as *compare, comparison, comparative; same, similar; analogy, analogue* and so on. Complex mental conception markers are also annotated as metaphor signals; they include *regard as, conceive of, see as; imagine, think, talk, behave as if* and so on; or simply *as if*. All of these lexical units are coded with ‘MFlag’.

2. We exclude more general signals of all indirectness, such as *sort of*, *kind of*, and so on, since it is not always clear that they signal metaphoricality or other aspects of discourse. We have also excluded what Goatly (1997) calls topic domain signaling, such as *intellectual stagnation*, since its nature and demarcation were not clear from the beginning of the project.

3.7 New-formations and parts that may be potentially explained by cross-domain mapping

We assume that new-formations, such as *honey-hunting* discussed above, have to be analyzed as if they were phrases consisting of more than one lexical unit: each part of such new lexical units activates a concept and relates to a distinct referent in the discourse, which both have to be checked for metaphor. As a result, we sometimes have to mark parts of lexical units (morphemes) as indicating metaphorical meaning.

The guidelines for finding metaphor-related words in new-formations are a variant on the basic procedure for finding all metaphor-related lexical units described in Section 3.1.

1. Find metaphor-related words in new-formations by going through the text on a word-by-word basis and identifying all new-formations.
 - A new-formation is a complex lexical unit consisting of at least one independent lexical unit which, as a whole, is not defined in the dictionary.
 - A special group is formed by specialized technical and scientific terms which may be missing from the regular dictionary but may therefore be seen as new-formations for the general language user.
2. When a lexical unit in a new-formation is used indirectly and its meaning in the discourse may be explained by some form of cross-domain mapping, mark the word as related to metaphor (MRW, indirect).

⇒ If you are not sure about indirect word use that is explained by cross-domain mapping, go to Section 3.3.
3. When a lexical unit in a new-formation is used directly and its meaning may be explained by some form of cross-domain mapping, mark the word as direct metaphor (MRW, direct).

⇒ If you are not sure about direct use of lexical units that is explained by cross-domain mapping, go to Section 3.4.

4. When a lexical unit in a new-formation implicitly conveys a direct or indirect meaning that may be explained by some form of cross-domain mapping, insert a code for implicit metaphor ('implicit').

⇒ If you are not sure about implicit indirect meaning that is explained by cross-domain mapping, go to Section 3.5.

5. When a lexical unit in a new-formation functions as a signal that a cross-domain mapping may be at play, mark it as a metaphor flag ('MFlag').

⇒ If you are not sure about signals of cross-domain mappings, go to Section 3.6.

CHAPTER 4

Metaphor identification in news texts⁷

4.1 Introduction

“There is probably no other discursive practice, besides everyday conversation, that is engaged in so frequently and by so many people as news in the press and on television” (van Dijk, 1991, p. 110). As news contributes to building and adapting knowledge and beliefs and “metaphor is an essential part of the way we deal with novel and current events” (Kennedy, 2000, p. 209), news discourse is naturally a particularly rich source of figurative language. It is not surprising that a large body of research on metaphor in news discourse is available. For example, metaphorical language in news texts has widely been studied with the aim of revealing ideologies and persuasive effects in political discourse (e.g. Chiang & Duann, 2007; Kitis & Milapides, 1997; Musolff, 2006; Zinken, 2003). Studies have also looked at a number of sub-genres such as immigrant discourse (e.g. Santa Ana, 1999), business discourse and financial reporting (e.g. Charteris-Black, 2004; Koller, 2004) or sports reporting (e.g. Charteris-Black, 2004), to name just a few.

None of these metaphor studies on news texts focuses on the identification of metaphors themselves. However, soundly and reliably identified linguistic metaphors can legitimize and enhance any ensuing analysis – whether empirical or interpretative. I present how applying the protocol of MIPVU introduced in the previous chapter allows for precise measurement of metaphor in news discourse – a prerequisite for evaluating the quality of an analysis. Illustrating the application of MIPVU to bulk news data moreover creates an awareness of how this method works for the much studied news register, revealing rich connections with register characteristics.

⁷ This chapter is adapted from Chapter 3 of Steen et al. (2010), which has been co-published by members of the analyst team. Changes introduced to the text of the book chapter are minimal and exclusively stylistic. For example, I have added references to other chapters of this thesis and removed references to other chapters of the book.

Conventional “schemata” or “superstructures” (van Dijk, 1988, p. 26), predicting, for example, the use of headlines or leads, determine the form typical of news discourse. They ease orientation for the reader. Images are also an integral part of this type of discourse. The corpus of news texts studied here is, however, plain text. It is not the goal of the present work to analyze multimodal metaphor, such as interaction with pictorial metaphors.

The language of mainstream newspapers is formal, texts are written in Standard English (or some other standard language of publication), and are consequently easily accessible. News texts are dense in information. The news production process allows journalists to carefully craft their texts and make precise lexical choices, which contrasts with the constraints of real-time production in for instance conversations (Biber, 1988, p. 104-105). It therefore comes as no surprise that the metaphor identification procedure can be transparently applied to newspaper text. In fact, the Pragglejaz Group (2007) demonstrate the steps of MIP by applying it to a sentence from a news report. For any application of MIP to a substantially larger amount of data, however, one might expect difficulties to arise. Yet the manual analysis of 44,793 words of news in our research project has shown only a small number of cases exhibiting ambiguity and difficulty. They are exceptions and not the rule; but they are worth considering particularly insofar as they helped in the development of MIPVU.

I will highlight several such difficult examples and demonstrate that this minority of cases can still be treated within MIPVU in a systematic and consistent manner. For each of the examples, possible approaches and solutions are offered. To begin, however, I want to give an impression of the largely smooth application of MIPVU to the news register by mentioning some aspects of our reliability tests.

The purpose of these reliability tests was to check inter-analyst agreement for annotating metaphors in different registers. For the news register, 1,415 words have been included in the complete series of tests. 79.9% of the lexical units in news texts have been unanimously coded as not related to metaphor by four independent analysts. Unanimous agreement for metaphor is 15.0%, which is the largest across the four registers. This percentage should not be read as an absolute indicator of the degree of metaphor in the texts, since there is a small percentage of items where no inter-analyst consensus was reached (5.1%). It should be noted that our regular annotation procedure (unlike the reliability tests discussed here) adds another step in which analysts cross-check the annotations of the other team members and make notes when they disagree on their decisions. A group discussion to resolve those cases of

disagreement follows, which reduces analyst bias as well as error. The above figures for the reliability test are taken *prior* to this round of discussion. The figures may point, therefore, to inherent differences among the registers, especially the incidence of difficult-to-treat cases within the metaphor identification procedure.

In particular, unlike academic texts, which exhibit a much higher incidence of unclear cases than the news texts, reading newspaper articles does not require much expert knowledge for an understanding of the overall meaning of the text – general world knowledge suffices. Therefore, the contextual meaning of words can be established in the overwhelming majority of cases. An exception may be highly specific news texts such as, for example, financial reports, which may require some form of expert knowledge in financial terminology. Also, some terminology used in sports reporting is potentially difficult to analyze. Unlike conversations, news texts consist of coherent and full sentences, and therefore there is almost always sufficient information to determine the contextual meaning of each word. The lexical units analyzed can usually be found in the dictionaries used in this project, since specialized terms are the exception rather than the rule. For the metaphorically used words there is a clear contrast between the contextual and the basic meaning and these can easily be understood in comparison with each other.

In sum, the low percentage of unclear cases and the overall good results in the reliability tests show that applying each step of the metaphor identification procedure to news texts is generally straightforward. As a consequence, the vast majority of the lexical units in news texts did attain unanimous inter-coder agreement in the test. Most of the exceptions appear to be clear coder errors and could quickly be resolved through group discussion. Coder error ranges from misapplication of the procedure to overlooking metaphors.

Below I illustrate both a case of unanimous inter-coder agreement and a case of disagreement. A clear case is the word *valuable*.

- (1) Professional religious education teachers like Marjorie B Clark (Points of View, today) are doing *valuable* work in many secondary schools (...). (K58-fragment01)

This adjective has a clear contextual meaning, ‘very useful and important’. The next step is to check whether there is a meaning that is more basic than the contextual meaning. Such a more basic meaning is ‘worth a lot of money’, because it is less abstract and more specific. Both the contextual meaning and

the basic meaning are found in Macmillan. The contextual meaning and the basic meaning clearly contrast but can be understood in comparison with each other. Therefore, according to our procedure, *valuable* must be marked as metaphorically used in this context. Most words in news discourse are similar, in that they offer no problems for the procedure.

One exception is formed by some prepositions. Prepositional phrases are common in journalistic writing since they allow for information packaging (Biber, 1988), and much news writing is presumably subject to space constraints. In some contexts it is difficult to identify the metaphoricity of some prepositions, even if their basic meaning is clearly spatial. The preposition *in* as used in the examples below is an illustration of a borderline case for which the metaphorical status cannot be easily determined:

- (2) Professional religious education teachers like Marjorie B Clark (Points of View, today) are doing valuable work *in* many secondary schools in trying to separate the facts about religion from (...).
- (3) *In* primary schools, class teachers are expected to be polymaths (...).
- (4) This attempt to codify religious and moral education *in* the primary school is a mistake (...).

The difficulty for all three cases lies in deciding on the contextual meaning, which seldom poses any difficulties in the news register. It is unclear whether “in (many) ... schools” and “in the primary school” should be interpreted as a place (which would make *in* literally used) or an activity (which might make it eligible to some for metaphorical use), or whether it encompasses both. There is also an interaction with metonymy. Both of these factors, however, can explain why independent analysts may differ in their judgments, as they did in our reliability test.

Similar lines of reasoning have led to analyst disagreement for *at* in example (5). Again the issue is whether *at* is interpreted to refer to an actual place or whether it is more broadly construed.

- (5) Jack Kahn graduated with honours *at* the University of Leeds in 1928 (...).
(A9Y-fragment01)

In general, when a word is possibly used metaphorically but a non-figurative interpretation is equally arguable, it is coded as metaphorically used to include it in ensuing textual analysis. The special tag WIDLII, ‘When In Doubt, Leave

It In', is added to signal its ambiguity. Whereas MIPVU tags such units as ambiguous cases, the original MIP procedure makes no such allowance.

As a general understanding of news texts is not difficult to achieve, and the demarcation of lexical units has not posed any major problems either, the main focus of this chapter will be on the subsequent decisions. This is not to say that these decisions are inherently difficult to make; instead, our aim is to present examples that need refined treatment. Such cases surfaced only when applying our procedure to bulk news data as opposed to the brief examples given in the original Pragglejaz Group paper. While they may seem difficult to solve within MIP, I will show that they can still be approached in a logical and consistent fashion with the help of a more refined metaphor identification procedure. For each of the steps I will discuss a variety of problematic cases that reveal particularly interesting properties referring to newspaper articles from a BNC-Baby sample.

4.2 Establishing contextual meanings

One objective of news is to inform the population about world events. The newspapers in our corpus are targeted at the non-expert reader and hence their content is generally easily accessible and clear. The only potentially difficult cases concern highly infrequent specialized terms, novel compounds and novel metaphors, and contextual ambiguity.

4.2.1 Specialized terms

Specialized terms tend to occur particularly in the business and sports news sub-registers. Some of them have made their way into the dictionaries used as part of the MIPVU procedure, while others are too specialized and the contextual meaning must be established in a different way. MIP does not give explicit instructions about how to deal with such expert terminology.

Consider the highly specific word usage encountered in the following business news report:

- (6) (...) the Gooda Walker agency may have overstated its syndicates' profits between 1981 and 1988 through the use of *time and distance* policies (...). (AL2-fragment23)

For the general language user, the expression “time and distance policies” is too specialized to determine its precise contextual meaning. It is impossible to locate the contextual meanings of *time* and *distance* in any of our dictionaries. At the same time, however, it should in principle be possible to establish the relevant specialized meaning of *distance*, if only expert knowledge were available. Consideration of such highly infrequent specialized language data for metaphor analysis would require informants who have such knowledge, or, alternatively, a truly specialized dictionary.

Looking at the data from the general language user’s viewpoint, which is the MIPVU practice, the contextual meaning cannot be established. At the same time a contrast to the more concrete, spatial basic sense of *distance* cannot be ruled out by the tools at hand. An abstract use of the term is therefore potentially metaphorical. This is why *distance* is included as a metaphorically used term but also tagged as an ambiguous case (WIDLII).

4.2.2 Novel compounds and novel metaphors

Novel metaphors are said to be abundant in press reports (e.g. Croft & Cruse, 2004, p. 104). While they may be typical in some subregisters of news texts, novel language use is not at all frequent in our overall news corpus, let alone the other registers. Moreover, there is a fine line that distinguishes novel from conventional language use and this line is often difficult to locate. Analysts have found that absence from the dictionary is a criterion which is easy to use and has to be applied to an estimated one percent of all lexical units classified as related to metaphor.

In the following example, *state-masonry* is a novel lexical unit and cannot be found in the dictionaries.

- (7) The masses are being engaged in the craft of *state-masonry*. (A9J-fragment01)

The assumption is that each word in the novel compound will activate a distinct concept and is related to a separate referent in the projected text world. Readers eventually need to parse novel compounds into their components in order to establish the presumed relation between the two concepts and the two referents. Therefore, because *state-masonry* cannot be found in the dictionaries as a whole, it is necessary to look up the entry for *state* as well as for *masonry*. *State* is a general word, which can be applied equally to concrete and abstract things as well as physical and mental situations. It is therefore not metaphorically used. The basic meaning of *masonry* refers to

'bricks and stone', which is not the contextual meaning. Since physical building can be compared to abstract constructing, however, it may be classified as related to metaphor. Therefore, *state* is literally used and *masonry* is metaphorically used.

Branching out from novel compounds, there are some novel metaphors which can be located as lexical items in the dictionary, but whose novel contextual meaning has not made its way there (yet). Only once a metaphor becomes frequently used by a speech community does its metaphoricity become conventionalized to the point that, to the everyday speaker, it seems like a familiar expression (Croft & Cruse, 2004, p. 105). Consider the lexical unit *roof* in the following excerpt from a newspaper article on the conflict in the Middle East:

- (8) A pyramid administrative structure, establishing links from popular committees in villages right up to the Executive Committee of the PLO (in its capacity as a Cabinet), can be established. During the Intifada the people have been engaged in building the side walls. A government would provide the *roof* which would bring these walls together. (A9J-fragment01)

The contextual meaning of *roof* is an overarching abstract structure that a government represents and is thus metaphorically used in this context. This meaning is not listed in the dictionaries, however, suggesting novel language use since we can contrast it to the basic meaning 'the top outer part of a building, temporary structure or vehicle'.

Treating cases of novel language use is delicate, however, because it is not always clear when precisely a lexical unit can be called novel. This is demonstrated by the lexeme *outskirts* in the following sentence:

- (9) Walking here, you leave the 20th century behind on the *outskirts* of the forest and enter the reconstructed emptiness (...). (AHC-fragment60)

Its only meaning in the dictionaries, 'the areas of a town or city that are furthest away from the centre', is not the contextual one. In our example, *outskirts* refers to the areas of a *forest* that are furthest away from the centre. Assuming sufficient distinctness between these two meanings, this means the lexeme is, according to our definition, used in a novel fashion in the present context. Since it is possible to compare the novel contextual use with the conventional basic use, the word may be classified as related to metaphor.

The analyst must, however, keep in mind that dictionaries do not capture all contemporary language use because there is a frequency threshold a

meaning needs to pass in order to be considered sufficiently conventionalized (Steen, 2007, p. 100). One option is to accept this type of dictionary as simply one relevant reflection of conventionalization, which captures an important level of the experience of language users. Another possibility is to go for a greater degree of refinement and to check a larger corpus, such as the BNC World. The decision to be made is what frequency of occurrences marks the appropriate cut-off point between conventionalized and novel uses for the purposes of a particular research project (e.g. Cameron & Deignan, 2006, p. 678). For the present example, a search of *outskirts* in the BNC World shows that most items are used in the meaning as described in the dictionaries. Only two out of fifty randomly selected hits (600 in total) were used in a novel way, and none of them was applied to a forest. Analysts therefore choose to follow the dictionary as a general rule and regard *outskirts* in ‘outskirts of a forest’ as a novel metaphor.

The rigorous framework applied here leads the analyst to mark some cases as metaphors based on supposedly novel usage which may be looked at in other ways when other tools are used. But the dictionaries are used specifically to avoid leaving the analysis of metaphors on a linguistic level to the analysts’ intuitions. What is important is an awareness of the restrictions that are imposed by using this framework.

4.2.3 Contextual ambiguity

For a number of lexical units the precise intended meaning cannot be determined despite the rich context typically provided in journalistic writing. Consider the following sentence:

- (10) But by the time I had turned off the road from Bellingham at Kielder village and driven *up* the bumpy Forest Drive to East Kielder Farm, (...). (AHC-fragment60)

In this case it is possible that the word *up* was used indirectly and therefore metaphorically (further along a path), though it may also have been used in a direct, non-figurative way (a higher location). The journalist does not elaborate on the precise location of East Kielder Farm and thus the analyst lacks sufficient information to disambiguate the meaning of *up*. Since both interpretations are equally possible, the lexical unit *up* is tagged as an ambiguous case, comparable to *at* in example (5). It is hence also given the code WIDLII and is regarded as potentially metaphorically used.

The following case, which deals with the judgment of a word's metaphoricality in connection with *money*, is more subtle in the sense that it allows for multiple levels of contextual semantic analysis. In the sentences below the issue is whether or not to code the items in italics as related to metaphor:

- (11) (...) a charity called Food International, which raises money *from* the fiercely competitive matrons of Palm Beach (...). (AL0-fragment06)
(The basic meaning of *from* is 'starting at a particular place and moving away'.)
- (12) You *got* money, you got fame (...). (A5E-fragment06)
(The basic meaning of *got*, here used for saying 'have' in informal speech, is 'used for showing possession'. Note that *got* as used in this context has its own lexical entry in the dictionary.)
- (13) (...) until they *get* any money back (...). (AA3-fragment08)
(The basic meaning of *get* is 'to receive something that someone gives you or sends you'. It has been taken from Longman because Macmillan conflates concrete and abstract meaning descriptions. This is one of the circumstances in which MIPVU adds Longman as a second opinion. For more details on the use of Longman see Section 4.4 below.)
- (14) (...) it isn't by any means clear what the bill will be or where the money will *come* from. (A7W-fragment01)
(The basic meaning of *come* is 'to move or travel to the place where you are'.)

If money is understood to be something concrete, none of these items are metaphorical in the regular sense discussed so far (example 14 is an exception, because it would lead to possible personification, in that case – see the discussion of examples 19 and 20 below). If, however, money is an abstract concept, they should each be marked as metaphorically used. The issue is this: on the one hand, money *is* concrete, in the form of coins and bills; but, on the other hand, money is also abstract in virtual environments (e.g. online banking, account balances). Thus this is a prime example of a borderline case. It has been resolved by arguing that, in principle and in the present day and age, money is (still) concretely reclaimable. Therefore *from*, *got*, *get* and *come* in the examples above are literally used.

Another interesting case is the word *system*, which, depending on its context, can take on concrete or abstract meaning, or both. The relationship between the basic and the contextual meaning can either be literal, metaphorical or metonymic, as seen in the following examples:

- (15) PCBs are so difficult to destroy, that Rechem’s emission-monitoring *systems* are geared to detecting them on the grounds that if you destroy PCBs you destroy everything. (A1U-fragment04)
- (16) In *systems* development nothing is more fundamental than assessing user requirements. (A8R-fragment02)
- (17) (...) the practicalities of an alternative voting *system* (...). (A1F-fragment08)
- (18) THIRTY FIVE people died and others were maimed for life in the Clapham rail disaster in December last year because work was done in a slovenly, haphazard way and was then left unchecked. (...) Yet yesterday’s report on the Clapham crash, confirming the picture which emerged throughout the Hidden inquiry, makes an event which seemed at the time totally unexpected look almost inevitable. This was a *system* hopelessly under strain. (A7W-fragment01)

For sentence (15), Macmillan describes a *system* as ‘a set of connected things that work together for a particular purpose’. This is the contextual but also the basic meaning. Since the technicalities of a concrete system are described, *system* is not metaphorically used. The newspaper text in (16) refers, again, to a concrete system (‘a group of computers that are connected to each other’). At the same time this type of system includes an abstract system of ‘an organized set of ideas, methods, or ways of working’ that is part of the concrete system. Since this is a part-whole relationship, the relation is via contiguity and not via similarity, and therefore *systems* is not used metaphorically in this case. Example (17) clearly describes ‘a method of organizing or doing things,’ and not a concrete system. Therefore, *system* must be marked as metaphorically used. In the last example, (18), the context allows for an ambiguous interpretation of the word. Since it can be read as either a concrete or an abstract system, the item is tagged as metaphorically used but ambiguous (WIDLII).

The final issue to discuss in the framework of contextual meanings is personification, a phenomenon the analyst frequently comes across in news texts. By means of personification the author’s presence and views can be concealed, creating a sense of objectivity (Caballero, 2003, p. 164). Personification can also disguise the fact that there are actual people responsible for the actions described: “(...) although journalists typically present a news account as an ‘objective’, ‘impartial’ translation of reality, it may instead be understood to be providing an ideological construction of contending truth claims about reality” (A. R. Anderson & Nicholson, 2005, p. 158). As two cases in point, consider (19) and (20), where the context allows

for two interpretations. Both a metaphorical and a metonymic interpretation of the verb are possible.

(19) ‘A party can’t even *decide* its name (...).’ (A7W-fragment22)

(20) (...) the Gooda Walker agency may have *overstated* its syndicates’ profits (...). (AL2-fragment23)

For instance in example (19), the sense description of *decide* found in Macmillan that is closest to the contextual meaning is ‘to make a choice about what you are going to do.’ The use of the pronoun *you* emphasizes that *deciding* is a human activity. In the present context, the corresponding noun *party* can be interpreted in two different ways. First, the individuals who make up the party can be in focus, in which case *party* is interpreted metonymically and *decide* is not used figuratively. As an alternative, the party can be regarded as an abstract group acting as one person. In the latter case *decide* is metaphorically used since its basic sense is human-related. Because the possibility of metaphorical usage depends on analyst perspective (cf. Low, 1999a), language use of this kind is coded as ‘possible personification’. MIP does not offer a mechanism for indicating that a lexical unit may have both a metonymic and a metaphorical interpretation. Keeping in such words as ‘possible personification’ is a feature of MIPVU.

4.3 Establishing more basic meanings

Establishing the basic meaning of lexical units in news texts is usually simple. The high percentage of nouns in news reports (Biber, 1988, 1989) helps because prototypically their meaning is more autonomous than that of, for instance, verbs, which makes it easier to find a basic sense (Pragglejaz Group, 2007, p. 28). The use of words with relatively specific meanings is also reflected in the high type-token ratio that is typical of news texts. A high type-token ratio is an indicator of high lexical variation and results from precise lexical choice that aims at an exact presentation of information (Biber, 1988, p. 105). Rare challenging cases emerge only when (1) the analysts differ in their intuitions as to the basic meaning, yet find that contemporary dictionaries do not contribute any information that helps to resolve the problem, or (2) the sense descriptions in the dictionaries are derivations of a basic meaning that is no longer familiar to the contemporary language user. These challenges should not be regarded as a drawback, as they have served to improve MIP.

The overwhelming majority of cases can be resolved by using the Macmillan dictionary, and the Longman dictionary when needed. However, for rare cases, analysts may still disagree on a unit's basic meaning after lengthy discussion and consulting both dictionaries. For these cases, one recourse is to check the OED in order to achieve better understanding of the historical development of the word. I noted in Chapter 2 that a word's history is usually disregarded in MIPVU. Nevertheless, in order to treat those cases that cannot be resolved using the contemporary dictionaries alone, the age of a word's meaning may be considered as a "tiebreaker". Again, for the bulk of the cases, such a tiebreaker is not needed and the OED is not consulted. But some cases that have been resolved by utilizing the OED include the following.

- (21) Drifting between grassy polders to which farmers have to ferry their cattle in punts, or following leafy twisting lanes marked only by rusty signs proclaiming the 'Venise Verte', you're in an all-green, mysteriously silent world; only the occasional fisherman, twitching his rod above the algae-smothered waters, *disturbs* the stillness. (AHC-fragment61)

The contextual meaning of *disturb* ('to do something that stops a place or situation from being pleasant, calm, or peaceful') is clear. The analysts disagreed, however, about the basic meaning. There are two arguments. The third sense in Macmillan, 'to make something move', makes reference to a concrete form of movement, and therefore qualifies as a candidate for the basic meaning. However, analysts may be distracted by the salience of the human-oriented first two senses ('to interrupt someone and stop them from continuing what they were doing' and 'to upset and worry someone a lot'). Longman offers similar sense descriptions and therefore does not solve the quandaries. The OED suggests that all senses are equally basic because the primarily physical sense and the primarily abstract senses appeared roughly at the same time. This led us to conclude that *disturb* in the above example is not metaphorically used since it is sufficiently close to the third sense, 'movement'.

The unit *served* in the example below also needed group discussion.

- (22) He *served* with distinction in the child psychiatry section of the Royal College of Psychiatrists (...). (A9Y-fragment01)

The discrepancy of opinions stems from difficulties in settling on the basic meaning. A clear basic meaning is not immediately obvious. Entries in Macmillan (only three are listed) refer to, for example, providing food and drink, doing a job or performing duties, and helping customers to buy goods in

a shop. Analysts argued that these senses are instantiations of the same idea, namely to perform some sort of duty. The historically oldest (and here, it is argued, basic) meaning is ‘to be a servant; to perform the duties of a servant.’ The contemporary meanings are derived from this basic meaning, but are not in contrastive opposition as long as the action of serving is performed by a human being. Therefore *served* is non-metaphorical.

The OED is also a useful source when senses seem to be related somehow, but the exact nature of this relationship is unclear. This may indicate that they are derived from a basic meaning that is obsolete. The meanings of *issue*, as in the following example, illustrate this class:

(23) Parliament urged to think again on housing *issue*: (A7Y-fragment03)

Macmillan gives the following sense descriptions: ‘a subject that people discuss or argue about, especially relating to society, politics’, ‘a magazine that is published at a particular time’ and ‘a set of things, for example shares in a company, that are made available to people at a particular time’. Since it was hard to decide on a basic meaning, analysts consulted the OED, where it appeared that all senses may be regarded as equally basic, since they developed from the old meaning ‘the action of going, passing, or flowing out; egress, exit; power of egress or exit; outgoing, outflow’. Therefore, none of the currently surviving senses is metaphorically used.

Although the history of a lexical unit is occasionally considered, this is only done as a last resort. Overall, the MIPVU approach is more explicitly and intentionally synchronic than the Pragglejazz method. A word’s history is only taken into account for rather rare cases of disagreement and uncertainty, namely when more than one candidate for a basic meaning is present and there is no indication of which candidate should take precedence.

4.4 Contrast and comparison

This section describes issues related to comparing and contrasting the basic and the contextual meanings. It presents the approach taken when the contextual meaning and the basic meaning can be found in Macmillan but are listed under the same sense description. Subsequently, I describe situations for which it is unclear whether two senses are distinct enough to allow for a mapping, either because the senses are metonymically related or because one of the senses is just a specification of the basic sense.

Metaphorical meanings depend on a contrast between a contextual and a more basic sense. Our main operational criterion for deciding whether two senses are sufficiently distinct is whether the contextual and the basic senses are listed as two separate, numbered sense descriptions in the dictionaries. Sense descriptions subsumed under one single sense are regarded as manifestations of the same meaning. For instance, the third sense description for *run* in Macmillan, ‘if a machine or engine runs or you run it, it is working’, includes the sub-senses 3a, ‘to start or use a computer program’, and 3b, ‘to own and use a motor vehicle’. These may all be seen as slightly more specific manifestations of the main sense. The third sense as a whole would be held to be monosemous, that is, to have only one meaning (for more details and references see Steen, 2007, Chapter 6).

This is also the case for the noun *struggle* as used in

- (24) Ulster, the provincial champions, may well fancy their chances on November 21, but Leinster look certain to face an uphill *struggle* even though the tourists have rested 13 of the team that beat Wales. (A80-fragment15)

Macmillan gives the following entries: 1: ‘an attempt to do something that takes a lot of effort over a period of time’, 2: ‘a fight or a war’, 2a: ‘an attempt to defeat someone or something, or stop them from having power over you’ and 3: ‘something that takes a lot of physical or mental effort’. The first sense is abstract. The second and third senses conflate physical and mental struggle, which means that the descriptions cannot be easily contrasted relying on Macmillan alone.

Struggle demonstrates that one must be aware of the constraints under which dictionary makers operate. Sometimes senses are collapsed, although they might have appeared as two separate sense descriptions had more space been available. In other cases, examples may be simplified for the target audience of learners (Deignan, 2005, p. 63; Steen, 2007, p. 98). However, despite these constraints, Steen et al. (2010) argue that dictionaries – standardized descriptions of language data – are a legitimate tool with which to move away from analyst intuitions towards repeatability of results. Since the opposition of physical struggle (which would qualify as a basic meaning) and effort (the contextual meaning) does point towards a possible metaphorical tension, it is useful to check Longman as a second source. Longman does list a separate sense for physical struggle: ‘a fight between two people for something, or an attempt by one person to escape from the other’. As Longman does not combine abstract and concrete senses into one description, the analyst may

conclude that they are sufficiently distinct. *Struggle* must therefore be marked as metaphorically used.

For a number of cases, however, both dictionaries conflate, for instance, concrete and abstract meaning, as is the case for *create*:

- (25) His father was a rabbi and a biblical text was to *create* another well known work by the son, 'Job's Illness – Loss, Grief and Integration.' (A9Y-fragment01)

Following intuition, there seems to be an opposition between designing something concrete and making something abstract. Inspection of both dictionaries, however, suggests that the word's meaning is general, and that anything, irrespective of the level of abstraction, can be created. What initially looked like a possible reduction of polysemy (conflation of a concrete and an abstract sense) turns out to be agreement over monosemy.

A similar problem is posed by the verb *use*, for which, intuitively, there is a contrast between using a tool and using a method:

- (26) What criteria would police and immigration officials *use* in their search for 'potential terrorists' on a train (...). (A1F-fragment11)

Again, both dictionaries appear to combine abstract and concrete tools under one heading. Macmillan, for example, gives the following entry: 'to do something using a machine, tool, skill, method etc in order to do a job or achieve a result'. This particular sense of the verb is monosemous and conventionally employed in both abstract and concrete contexts. Therefore, *use* in the sense of 'using a method' is not metaphorical by the criteria of MIPVU.

It is also possible for a lexical unit not to be metaphorically used despite having separate basic and contextual sense descriptions in the dictionary that are somehow related. I illustrate this class by looking at the word *drops* in the following excerpt from the leisure pages of the *Daily Telegraph*:

- (27) Now the path ran through heather high above the burn, past circular sheepfolds long disused and over the stony beds of side streams where the grass hung smooth and inviting, concealing ankle-breaking *drops*. (AHC-fragment60)

The basic sense of *drop*, 'a very small amount of liquid with a round shape', and the contextual sense, 'a distance down to the ground from a high place', are related; however, this relationship is one of contiguity and not of metaphor. The object *drop* stands for the distance that it covers before it reaches the

ground. Due to this metonymic relationship the two senses are distinct, but they are not understandable by comparison. Therefore, *drop* is not metaphorically used.

In the following example I again address whether two senses are sufficiently distinct, in this case for the lexical unit *labour*.

- (28) (...) low zinc levels may lead to problems in pregnancy, from difficult *labour* to congenital malformations in children. (A1X-fragment04)

Labour has separate sense descriptions for the contextual and the basic meaning. As demonstrated earlier, two separately numbered sense descriptions often indicate that there is sufficient contrast between two meanings of a word, which may point to metaphorical usage. However, the contrast of the contextual meaning in the present example – ‘the process by which a baby is pushed from its mother’s body during childbirth’ and the basic meaning ‘work’ is not strong. The process of giving birth is hard ‘work’. *Labour* is therefore not metaphorically used – it can be taken as a specification of a more general basic sense (e.g. Geeraerts, 1997; Koch, 1999).

Macmillan is our major source of reference, which is in accordance with the MIP procedure. As the examples above have demonstrated, however, the use of Macmillan alone is unsatisfactory for some lexemes. MIPVU employs Longman as a second opinion when appropriate. This is done systematically and only when two clearly contrasting meanings are conflated under the same sense description, as well as when it is unclear whether two separate senses are sufficiently distinct

4.5 Direct metaphor

Metaphor-related words in the news corpus are typically indirectly used. However, this is not the only way cross-domain mappings can surface. Journalistic writing occasionally employs direct language use that still triggers a cross-domain mapping. This cannot be captured by contrasting basic and contextual meaning, however, as is shown in the following example:

- (29) IN SYSTEMS development nothing is more fundamental than assessing user requirements. (...) But many system developers are unable to assess requirements properly. They seem to think that you can ask a businessman what his requirements are and get an answer that amounts to a draft system specification. *A doctor doesn’t ask his patient what treatment to prescribe. The patient*

can explain only what the problem is. It is the doctor that provides the remedy. (...) A user may have a deep knowledge of business problems, but knowing little about computers, has no idea how they should be tackled. Yet, analysts are heard asking time and again, 'Tell me what you want (...)' But of course the users don't know what they want, so they end up getting another duff system. An effective analyst provides the same service to the business as the doctor provides to the patient. (A8R-fragment02)

The italics mark a topic shift from the domain of computers to the medical domain. Because we know how a doctor treats a patient, we can understand how a system developer deals with a user. This comparison of a systems developer to a doctor and the user to a patient triggers a mapping between the two contrastive domains. Within MIPVU, one therefore marks all content words that are part of the topically incongruous stretch of text with a special tag, indicating that the indirect conceptualization is expressed directly – and not indirectly as is the case for most metaphorical language.

In this example, the mapping extends over a longer stretch of text. More frequently occurring are less elaborate similes, signaled by words such as *like* or *as*, creating a local shift in frame of reference:

- (30) For many years Thompson lived in New York in his apartment at the Chelsea Hotel. From there, *like a buzzard in its eyrie*, he would make forays round the US and abroad (...). (A1H-fragment05)

MIP, which focuses purely on indirectly expressed linguistic metaphor, cannot deal with metaphor-related language use of this kind. When language is used in a direct way but does involve a cross-domain mapping, the coder has to identify this as metaphor-related language, too.

Nevertheless, *within* a simile or other form of directly expressed metaphorical comparison, a lexical unit can still be metaphorical, for it may have a more basic meaning than the contextual one that expresses the source domain. For instance, the preposition *to* in example (29), “as the doctor provides *to* the patient”, has a more basic meaning that involves some kind of movement from one concrete spot to another. The contextual meaning of *to* is abstract. Since the basic and contextual sense can be contrasted but can be understood in comparison with each other, *to* is metaphorically used – in an indirect way. The analyst must therefore, for each and every lexeme within the stretch of directly used language expressing a cross-domain mapping, apply the steps of the metaphor identification procedure as usual. This may lead to marking a lexical unit as direct and indirect metaphor at the same time.

There is an important terminological consequence of this extension of MIP into the expression of metaphor by other forms than metaphorical language use, which has been mentioned before. The phrase *buzzard in its eyrie* is not metaphorical language use in the same way as a word like *defend* in *Lotte defended her thesis*. When applying MIPVU, therefore, it is convenient to adopt the following terminological conventions:

- ⇒ Cases like *defend*, which have turned out to constitute the bulk of metaphor in discourse, can be called metaphorical language use, or metaphorically used word(s); they involve indirect meaning by comparison.
- ⇒ Cases like *buzzard in its eyrie* cannot be called metaphorical language use, or metaphorically used words; they involve direct meaning by comparison. In other words, indirectness in conceptualization through a cross-domain mapping is expressed by direct language.
- ⇒ But it is possible to refer to both sets of cases as ‘metaphor-related words’: the words are used in such a way that, in subsequent analysis, they can be related to more specific underlying conceptual structures that are metaphorical. This holds for both *defend* and for *buzzard in its eyrie*.

Whenever this is important, I will rely on these terminological distinctions.

4.6 Conclusion

News texts have served as a rich source of data for metaphor analysis. However, I am aware of no previous work focusing on the identification of linguistic metaphors themselves in this type of discourse. Since linguistic metaphors often serve as a basis for further linguistic, conceptual, and communicative analysis, a reliable identification procedure, as well as an understanding of how it works within the news register, is essential.

Linguistic metaphor identification in news articles is relatively straightforward. General world knowledge is sufficient to understand the meaning of a news text, specialized terms are rare and the discourse is coherent. Indeed, only 5.1% of the lexical units in a series of reliability tests, performed by four analysts, did not receive unanimous inter-coder agreement, which is the lowest of all four registers in our data. Of this already low

percentage, the majority of cases of disagreement can be attributed to coder error.

The application of our procedure to newspaper discourse has unveiled very few difficult or ambiguous cases. These few remaining items, though they may seem challenging at first, can generally be solved in a reliable and consistent manner. For each of the core steps of the identification procedure I have demonstrated a series of difficult examples that have surfaced when applying MIP to bulk news data, along with their possible solutions, which helped create our more elaborate tool for metaphor identification, MIPVU. This is not meant to suggest that the analyses are free of error. Instead, it should be possible to detect remaining errors fairly easily against the explicit set of assumptions formulated in MIPVU.

MIPVU differs from MIP in several ways. The unit of analysis is the grammatical word class, not the broader lemma; this is decisive for the selection of relevant contextual and basic senses that need to be distinguished and compared. When the contextual meaning of a word cannot be established using the dictionaries at hand, whether because of its technical use or because of ambiguous context, the unit is retained in the dataset as potentially metaphorical marked by a special tag, WIDLII. Longman is used as an additional tool – mainly for cases in which it is not clear whether two senses are sufficiently contrastive. In a small minority of cases analysts still disagree on the basic meaning of a lexical unit after consulting both contemporary dictionaries: for these rare cases, as well as when the relatedness between polysemous senses is unclear, they may consult the OED to take the historical development of a word into account. A final addition is the consideration of directly expressed metaphor for analysis.

Though there are those cases that need a more elaborate decision process, I emphasize that, once an analyst is familiar with MIPVU, the metaphorical status of a lexical unit can be judged quickly for the majority of lexical items in news texts. The examples offered in this chapter have pointed out that even complex cases can be approached in a systematic and reliable manner. By following a consistent decision process, the number of borderline cases can be kept low, which reduces the level of potential error and noise in subsequent quantitative analysis. The challenging examples are not a setback, as they have guided the design of MIPVU, a procedure capable of dealing with more subtle cases.

CHAPTER 5

Metaphor in news texts: A quantitative analysis

5.1 Introduction

Metaphor in news texts has been researched extensively in part because news articles are a familiar feature of modern culture. In much of the world they are easily accessible and play a powerful role in shaping public opinion. Consequently, they are often looked at in terms of how a particular metaphor in them shapes our thought and actions (e.g. Koller, 2004; Musolff, 2000; Santa Ana, 1999). Typically research has concentrated on metaphor in a certain subregister such as business news (e.g. Charteris-Black, 2004; Koller, 2004) or sports reporting (e.g. Charteris-Black, 2004). Although researchers have started to look at real language data, many studies remain small-scale and/or restricted in their focus, or lack a rigorous, explicit method of identifying metaphor. Progress in the field has been hampered by the lack of large-scale quantitative studies based on systematically identified metaphorical language – without these, it is difficult to develop a precise understanding of how and how often metaphor is used in natural language.

To my knowledge, no research to date has given a precise picture of how common metaphorical language is in the news register in general. Is metaphor used more or less often than in other types of discourse, such as literary texts or conversations? If there are any differences, what are they and why do they occur?⁸

Important work on quantifying metaphorical language use has been carried out by Cameron (2008, p. 199), who compared the metaphor density of three different conversation samples she had analyzed using identical methods of metaphor identification and methods of measurement. Results are quite variable. They range from 100 metaphorically used words per 1,000 words in

⁸ Note that the frequency of metaphorical use of words should not be confused with perceived metaphoricality of a text. A text that is metaphorical on a symbolic level is not necessarily experienced as metaphorical by readers. The frequency of metaphorical expressions that are experienced as deliberately used (Steen, 2008) may be more important for a text's perceived metaphoricality.

reconciliation talk, to about half of that number in doctor-patient interviews and 27 metaphorically used words per 1,000 words in classroom talk. If there is such considerable variation between subregisters, it seems safe to assume (and will be confirmed below) that there will also be variation between quite different registers such as conversation (spoken) and news (written). Cameron (2003, p. 57) summarizes studies on metaphor density in both written and spoken data. Most research on quantifying metaphorical language use is, however, difficult to compare. The difficulty is due to the use of dissimilar ways of defining and counting metaphor in text. Some do not make detailed notes about the data, such as text length. Because of these shortcomings in operationalizing metaphor, and because of the lack of a precise description of the data, it is hard to replicate studies or build findings of new research on earlier findings (for example Goatly's (1997) study of news texts and a range of other registers reporting the frequency of a number of figurative language phenomena.) The metaphor identification procedure described in the previous chapters provides the explicit description of data collection that has been lacking in the bulk of research on quantification of metaphor. Details about the data and the annotation process will be given further below.

Cognitive linguistics puts forward the idea that metaphor is ubiquitous in everyday language. It follows that metaphor occurs in all varieties of language. It may, however, be more or less common in one register compared to others. With some exceptions (e.g. Charteris-Black, 2000; Semino et al., 2009; Skorczynska, 2001; Skorczynska & Deignan, 2006), research on metaphor variation across different kinds of registers has not received much attention. Work trying to fill this gap relies on predefined search strings or focuses on only those expressions that have been identified in small hand-annotated sample corpora (e.g. Skorczynska & Deignan, 2006) or selected semantic fields (e.g. Semino et al., 2009). These methods capture only a restricted sample of metaphorical language use. A more encompassing comparison between a number of registers that considers *all* metaphor related language has not been possible so far because of the lack of corpora that have been annotated for metaphor regardless of source domain, underlying conceptual metaphor or kind of metaphorical expression. The systematically collected database containing four different registers that has been generated in this project satisfies this need.

The goal of this chapter is to show what is typical of metaphor in the news register in precise quantitative terms, thus creating a register profile of metaphor for newspaper texts. The following chapter will put these findings in context by interpreting the function of metaphors in selected text excerpts

from a qualitative angle. To make a register profile of metaphor in news texts more meaningful, metaphor in news will be compared to metaphor in two other written registers in the database, namely fiction and academic texts, as well as spontaneous conversation.

A range of registers, among them academic texts, news texts, fiction and conversation, have been extensively studied from a grammatical point of view by Biber (1988). He was among the first to describe large parameters of linguistic variation across a range of texts from different registers. His groundbreaking research showed that registers differ from each other along a number of dimensions. For example, news reports and other highly “informational” texts feature a prominent use of nouns, prepositions, or adjectives, whereas, relatively speaking, adverbs and verbs are a less common feature and are more typical of the “involved” conversation register. Biber (1988) studied a range of linguistic features such as questions, different word classes, contractions etc., but he did not look at metaphorical language use.

The BNC-Baby texts used in the present study have been intentionally selected to parallel the materials used for Biber et al.’s (1999) *Longman Spoken and Written English Corpus*, which is also made up of the four registers of conversation, fiction, newspaper language and academic prose. Work based on this corpus has described both grammatical features and their use in the four different registers, taking into account the characteristics of the registers in which they occur. As Biber et al. (1998, p. 106) argue, “many lexical and grammatical features can only be understood through analysis of their functions in larger discourse contexts”; this applies to metaphorical language as well. It is not known, however, what metaphor contributes to the relation between register and linguistic features described by Biber et al. (1999). Since the text samples in the present corpus are drawn from the registers fiction, conversation news and academic texts and thus parallel the materials used for Biber et al. (1999), it is possible to connect the phenomenon of metaphor to the interaction between register and grammatical characteristics of texts.

The present study will examine the relative distribution of selected linguistic features that are common in news but less frequent in other registers and vice versa, as well as their relation to metaphor. It is the first study to establish the proportion of metaphors in written news, as identified with a rigorous methodology. It examines how metaphor in news differs from metaphor in other registers, taking into account the interaction between word class and register researched by Biber (e.g. 1988) and Biber et al. (1999).

The register perspective assumes that linguistic features, such as metaphor, are functional, meaning they are connected to the text (e.g.

structure, content), context (e.g. participants, production circumstances) and code (e.g. modality) of news articles (Steen, in press-a). Cognitive metaphor theory claims that metaphor makes it possible to talk about abstract and complex phenomena. However, metaphor in discourse also serves other, more specific functions (Semino, 2008, p. 32). In particular, revealing the motivation for the choice of metaphors in particular registers or stretches of discourse also involves examining the role of addressers and addressees, the goals and the relationship between them as well as the context in which the discourse is situated (Biber & Conrad, 2009, pp. 44ff; Semino, 2008, p. 31). Metaphors can serve ideational, textual and interpersonal functions (Halliday, 1978). Metaphors are used to persuade, reason, evaluate, explain or theorize or influence the conceptualization of reality (ideational function) (Semino, 2008, p. 31). When metaphors are used to express emotions and attitudes and when they are employed to entertain and create humorous effects, to confront, to build relationships or to manage topic switches (Drew & Holt, 1998, as cited in Semino 2008, p. 31), they aid (or hinder) the construction of personal and social relationships (interpersonal function). Metaphors serving a textual function may be used to summarize, to contribute to internal coherence, or to draw attention to particular parts of a text (Semino, 2008, pp. 31-32). (See also Goatly, 1997, pp. 148-167, regarding relating functions of metaphor to ideational, textual and interpersonal functions).

According to Biber and Conrad (2009), a register analysis of metaphor thus involves describing the situational context of a text, its linguistic features and the functional relationships between the two. Following a mainly quantitative analysis presented in this chapter, a qualitative chapter will use examples from the corpus to pull together the connections between metaphor, other linguistic features and situations of use as well as textual characteristics to analyze the function of metaphor in news. This in turn will help to explain why certain characteristics of metaphor are associated with specific situational contexts such as participants, setting, topic or communicative purposes.

This chapter will thus first situate the news register within a wider context. It will then focus on the quantitative analysis of metaphor and its interaction with other typical linguistic and situational characteristics of news texts. A prerequisite for counting metaphors is that they have been accurately identified. The sound annotation of metaphor in four different registers, which has been described in the previous chapters, lays the groundwork for conducting such quantitative work. This solid basis opens up new possibilities for examining patterns and the role of metaphor in news discourse and how metaphor operates in news compared to other registers. A method section will

give details about data collection: a description of the selected materials, the annotation process, the tools used and the preparation of the data that serve as a basis for the ensuing analysis. It will be followed by an analysis and results section, which will report on quantitative findings. Connections will be drawn to functional relationships, which will be discussed in more detail in the qualitative analysis (Chapter 6).

5.2 Situational characteristics

The schematic structure of news articles in the Western world typically consists of conventional features such as headlines, and sometimes, but not always, a lead summarizing the event at the beginning of an article. They are followed by several paragraphs describing some event and its outcome, and the participants involved. The reports are often interspersed with direct or indirect quotes from the participants (Biber & Conrad, 2009, p. 17). Van Dijk (1985) distinguished further categories such as “background information” and “previous events” that are necessary to understand the actual “main event”. A news article also typically reports on “consequences” of events. Conclusions, expectations or speculations in a “comment” section are occasionally added at the end. These text features of news articles, involving content, form, structure etc., fulfill certain functions. These functions are derived by relating linguistic and situational contexts. For an analysis of situational characteristics I follow the framework suggested in Biber and Conrad (2009, pp. 40ff).

I Participants: Compared to conversations, a novel or a single-authored academic paper, the addressor in news texts is less apparent. Some articles give the name of the journalist but some do not. Even if the author’s identity is revealed, this does not necessarily mean that he or she was the sole producer of the article. During the news production process, articles need to pass an editor, who may considerably alter what was written by the journalist. Therefore, a single article is potentially the work of more than one person. Newspaper editorials express an institutional voice; the individual author disappears behind the point of view of the newspaper. Newspaper articles, like fiction, are aimed at and read by a wide audience. It is not possible to identify the exact number of readers and to track which individual reads which article at what time.

II Relations among participants: In the news register there is no place for direct, immediate interaction such as in conversation. The journalist reports,

the audience reads. Contacting the author of a news article is difficult. Only letters to the editor allow some limited form of response. This is not comparable to spoken language, where participants can directly and immediately respond to each other in a back-and-forth exchange. Since there is virtually no interaction in print journalism, journalists cannot check whether every reader shares their background knowledge on events. Unlike academic publications, newspaper articles are addressed to the general audience and not to experts. The journalist therefore, cannot assume specialist knowledge on a topic and needs to be as explicit as possible in order to avoid potential knowledge discrepancies hindering understanding.

III Channel: News texts are written, which differentiates them dramatically in modality from conversation. This is connected to the fact that the audience of news writers is wide and direct interaction is virtually impossible. News texts have been traditionally published as part of a printed newspaper but are more and more commonly also published online. News texts still tend to be read as soon as they come out. Their increasing availability on the internet, however, makes it easier to go back and read articles on a subject that have been published earlier. This was more difficult in earlier days when, outside of libraries, papers would be discarded once they were out of date: as the Rolling Stones sang, ‘who wants yesterday’s papers?’.

IV Production circumstances: The channel influences the production circumstances. Compared to conversation, where thinking and speaking happens almost at the same time (and sometimes even the other way round), news writers have time to plan their article. They may draft it, write it and revise it. Not only the reporter but also the editor may delete, add or change parts. This review process is necessary in order to precisely convey the intended meaning. Since there is no interaction with the audience, the meaning has to be clear immediately. While the recipient of a news text can reread an article, or parts of it, and can spend as much or as little time on it as he or she wants (which is difficult in face-to-face conversation), the reader cannot, unlike in conversation, ask for clarification if something was not understood.

V Setting: As is the case for fiction and academic writers, journalists and readers do not share the same setting. They are not in the same place and there is a time delay between the writing of a news texts and the recipient reading it. Although these differences exist, journalists do use some situation-dependent references such as *yesterday* or *on Tuesday*, which are not common in fiction or academic writing but very common in conversations. Newspapers are written to be read soon after they are printed, so it can be assumed that the reader is able to make connection to these time references.

VI Communicative purpose: The aim of news texts is to report on recent events and people and their actions. They usually describe some state of affairs as objectively as possible. The majority of news articles do not reveal the feelings of the writer and do not try to persuade, but aim to inform. The journalist's goal is to present facts. If opinions are expressed, they are usually opinions of others, marked through direct or indirect speech. There is, however, considerable variation within the register. Personal attitudes and opinions are expressed in film or book reviews, some articles may aim to entertain, op-ed pieces are often argumentative, articles in the business or science section may try to explain complex concepts and others may speculate about future developments. In other words, while all these articles share the same production circumstances, maybe even the same author, they do not always share the same communicative purpose. This difference is also reflected in linguistic differences.

VII Topic: Newspapers consist of several sections, distinguished by general topic domains such as international news and national news, business, politics, sports, entertainment, arts, letters to the editor, style and fashion, health etc. Articles within these sections have their own specific topics. The topic has great influence on the vocabulary choice but less influence on grammatical differences between texts, the latter being influenced more strongly by communicative purposes and the production circumstances (Biber & Conrad, 2009, p. 46).

These situational characteristics are directly connected to the use of linguistic features that are typically associated with news writing. For example dense information packing, which is required because space is scarce, contributes to the prominent use of nouns. In more involved registers, such as spontaneous conversation, nouns are less prominent. As Biber's (1988) and Biber et al.'s (1999) research has shown, the use of word classes significantly interacts with register. The larger discourse context in which involved registers (e.g. conversation) are embedded differs radically from more informational registers (e.g. news). This difference in situational characteristics is also reflected in a different distribution of word classes across the registers. Biber's analysis of linguistic features and their relation to register did not include metaphorical language use, however. My study adds the variable metaphor to what is known about the interaction between word class and register. I tested whether metaphor interacts significantly with this interaction between register and word class as established in Biber and Biber et al.'s work.

5.3 Method

All news texts were analyzed for metaphorical language by using MIPVU. This expanded version of the original MIP procedure (Pragglejaz Group, 2007) has been described in full detail in Chapter 3. A summary of the steps of MIP – which remains the core of the refined MIPVU procedure – and a reminder of the main additions is provided below:

1. Read the entire text/discourse to establish a general understanding of the meaning.
2. Determine the lexical units in the text/discourse
- 3a. For each lexical unit in the text, establish its meaning in context, i.e. how it applies to an entity, relation or attribute in the situation evoked by the text (contextual meaning). Take into account what comes before and after the lexical unit.
- 3b. For each lexical unit, determine if it has a more basic contemporary meaning in other contexts than the one in the given context. For our purposes, basic meanings tend to be:
 - more concrete; what they evoke is easier to imagine, see, hear, feel, smell, and taste.
 - related to bodily action.
 - more precise (as opposed to vague).
 - historically older.

Basic meanings are not necessarily the most frequent meanings of the lexical unit.

- 3c. If the lexical unit has a more basic current/contemporary meaning in other contexts than the given context, decide whether the contextual meaning contrasts with the basic meaning but can be understood in comparison with it.
4. If yes, mark the lexical unit as metaphorical.

The main expansion of MIP into MIPVU concerns the inclusion of novel compounds and signals of metaphors (e.g. *like*, *as*), as well as direct and implicit metaphor. Most of these phenomena have already been discussed in the previous chapter; details on the latter three additions will be given in Section 5.2, which describes the annotation process in detail.

As explained in Chapter 3 (MIPVU procedure) polywords tagged as single units by BNC were analyzed as single units. Phrasal verbs and compound nouns are not consistently tagged in BNC. They were analyzed as single units because they function as single concepts in discourse designating distinct entities, attributes or relations.

5.3.1 Materials

Sixty three news texts were randomly sampled from the news register of the BNC-Baby – a 4 million word subcorpus of the 100 million-word British National Corpus, containing four distinct registers: newspapers, fiction, academic writings and conversations. This division is parallel to the *Longman Spoken and Written English Corpus* data analyzed by Biber et al. (1999) and thus allows for relating the behavior of metaphor to the grammatical properties of the registers described by Biber (1988) and Biber et al. (1999).

Each text is in XML format and has a file and a fragment code as an identifier (e.g. A9J-fragment01). Each word is marked for Part-of-Speech (POS). The texts stem from three different British newspapers: 1989 editions of *the Independent*, 1989 editions of *The Guardian* and 1992 editions of *the Daily Telegraph*. These three papers make up 39 per cent of the BNC-Baby, which contains 13 newspapers in total. The text samples are from different sections of the papers and cover a wide range of usage domains: commerce (8 texts), world affairs (19), natural sciences (3), social sciences (7), applied sciences (5), arts (8), and leisure (13). Most studies on metaphor in news have looked at restricted domains, have focused on individual texts or have chosen a selected group of conceptual metaphors for analysis. The aim in this project, however, is to get a picture of metaphor in the general news register. Thus register is defined at a very broad level. A representative sample of texts has been selected (different domains and different authors) to be able to show what is typical of that register as a whole, which is why the texts cover a broad range of domains. The shortest text numbers 62 lexical units and the longest 1892. The average text length is 705 units.

5.3.2 Tools

All metaphor related words were identified through the application of the MIPVU procedure (Chapter 3). Following the original MIP procedure (Pragglejaz Group, 2007), the protocol establishes the *Macmillan English Dictionary for advanced learners* (Rundell, 2002) as the main tool for deciding on units of analysis, contextual and basic senses and distinctiveness of senses. Macmillan is based on a recent 220 million word corpus of written and spoken text and is thus appropriate for analyzing contemporary news language. The *Longman Dictionary of Contemporary English Online* was used as a second opinion for cases that were not straightforward using Macmillan alone. In rare cases, when a decision could not be made by using the contemporary dictionaries

alone, the historical dictionary *Oxford English Dictionary Online* was consulted. The XML editor <oxygen/> was used for metaphor annotation.

5.3.3 Annotation

Four analysts coded the texts for metaphor according to the set of instructions detailed in Chapter 3. Details for each sampled text were recorded in an administrative database (file name and fragment number, number of words annotated, percentage of file annotated, name of annotator of the text, date of first annotation, date of any corrections made to the initial annotation). The procedure was as follows: each analyst coded texts independently. An annotated text was then uploaded on a discussion website that was created for the purposes of crosschecking each text. This means that each text was checked by the other three analysts. If they disagreed or had doubts about certain annotations, they posted a comment on the site. Subsequently, in a group meeting, these cases of disagreement were discussed among all analysts and the group leader. Decisions were recorded on the website and – if necessary – corrections were made in the annotated file. This step increases coding consistency. Cases that were not just errors spotted by the other researchers but which needed prolonged discussion were entered into a lexical database along with a short description of the outcome of the discussion for future reference. Whenever analysts could not agree on the metaphorical status of a lexical unit, they marked the item as a borderline case with the code ‘WIDLII’ (‘When In Doubt, Leave It In’), to be maximally inclusive. The application of this code has been demonstrated with examples in Chapter 4. Although a binary classification system of metaphorical versus not metaphorical is taken as the basis, collecting difficult-to-categorize cases allows quantification of the role of this borderline category. This refined annotation system thus allows making a distinction between clear metaphors, non-metaphors and borderline cases.

Analysts distinguished three main types of metaphor in their coding procedure: *indirect* metaphor, *direct* metaphor and *implicit* metaphor. “Tina will *defend* her thesis” is an example of an indirect metaphor. *Defend* is used indirectly in this context because it evokes a referent (arguing) that is different from the basic – direct – meaning of *defend* (physical fighting). Metaphorical meaning arises through non-literal comparison between the contextual and the basic meaning.

A cross-domain mapping in conceptual structure need not only surface linguistically in such indirect ways. In the following example, the source

domain is expressed directly: “Young Riders has a cast of five pouting male actors in an attempt to make a western with good demographics. The effect is rather *like an extended advertisement for Marlboro Lights*” (A2D-fragment05). There is no comparison of a contextual and a basic sense in the dictionary, in contrast to indirect metaphor. While *advertisement* and *Marlboro Lights* are used in their basic sense, there is nevertheless a comparison between the effect and a Marlboro Lights ad. Such direct comparisons are often, but not always, introduced by a lexical marker (Goatly, 1997, pp. 183ff) such as *like* or *as*, which have been marked as signals for metaphorical language use.

Finally, a concept can be connected to a source domain in an implicit way. Take the following example: “For three reasons such a move should be welcomed. First, *it* would bring Britain into line with the best European practice (...)” (A1F-fragment09). *It* is an implicit metaphor because it substitutes the metaphorically used *move* (underlined) in the previous sentence. *It* is not itself used indirectly (i.e. there is no more basic sense that could be contrasted to the contextual one.)

The analysts further distinguished between metaphorically used words and metaphorical use due to personification only, such as “the agency *decides* ...”. *Decide* is labeled ‘possible personification’ because *deciding* is a human activity but is applied in this case to an abstract entity (agency). This addition to MIP has been described in detail in Chapter 4.

Another additional code was used, however, which was not described in the previous chapter. Consider the following example: “The 1989-90 season, which started this month, *brought* another new prime-time western series (...)” (A2D-fragment05). *Brought* is metaphorically used because it is not used in its basic sense of ‘to take someone or something from one place and have them with you when you arrive somewhere else’. However, *bringing* is also a human activity, which qualifies the lexeme for the label ‘possible personification’. Because the unit is itself metaphorically used and it is connected to a non-human entity in this context, it is coded for both indirect metaphor and ‘possible personification’. This coding procedure allows distinction between ‘possible personification’, items that are at the same time indirect metaphors and metaphors that do not have such a special label.

As has been demonstrated in Chapter 4, metaphor identification in news texts is largely unproblematic. Establishing the contextual meaning of lexical units is generally straightforward. Therefore, all lexical units were analyzed for metaphor, with just one exception. One of the two instances of *keep* in “he can keep keep a tight grip on the public” (AL5-fragment03) was excluded because this is obviously a mistake that slipped past the editors.

A tool such as MIPVU is worthless if it does not guide analysts in a way that leads them to making highly similar judgments. Therefore, regular measurements were performed to monitor the coders' agreement in annotating texts for metaphor. For news texts, three such tests were conducted over a period of almost a year, containing four different articles that were randomly selected from the BNC-Baby news files. The texts counted between 249 and 501 lexical units, with a total of 1,413 units in four texts.

Analyst agreement on a case-by-case basis and the overall degree of difference between individual researchers was measured. Since the incidence of fine-grained codings of borderline cases, direct metaphor, indirect metaphor and personification was low, the reliability check only looked at whether analysts coded a unit as metaphor-related or not. Reliability results were good: unanimous agreement was high in all four news texts. It ranged between 91.8 and 97.4 with an average of 94.65 per cent. (Reliability tests were also performed on other registers. Only conversation had a higher analyst agreement, and only slightly.) These results are reflected in the Fleiss' kappa test statistic, which is appropriate for assessing agreement between more than two analysts. It averaged 0.9 (ranged between 0.89 and 0.96), indicating high analyst agreement (cut-off points are suggested at 0.66 and 0.8). Cochran's Q looks at analyst bias and checks whether one or more analysts are behaving significantly differently than the others. Two out of the four news texts reached significant p-values, suggesting that one or two analysts often marked more or fewer items than the others, per test. This means that the analysis is not reliable since there is a statistically significant relation between metaphor identification and individual analysts. In the annotation of the rest of the news data used in the project, however, the procedure includes group discussion for cases of disagreement, which reduces analyst bias and increases consistency. The problem of obtaining analyst bias in two of the four texts is thus alleviated in the regular procedure. In the reliability tests (and thus before discussion), the analysts achieved unanimous agreement for 92% of the cases, for all registers taken together.

5.3.4 Preparation of database

After completing metaphor annotation for all data, a round of post-hoc troubleshooting was carried out for all four registers. Features that were experienced as particularly problematic during the annotation process were selected for closer inspection in order to remove systematic errors and to estimate error margins. The following problematic cases were checked for

errors: phrasal verbs, compounds, polywords (all three of which pertain to determining what constitutes a lexical unit), borderline cases (WIDLIIIs), units that were discarded from metaphor analysis because lack of context made them unintelligible, units signaling metaphors and implicit metaphor.

A sample was examined for each of the problematic cases. For example, we checked 25 types of the most frequent verbs that were marked as being part of phrasal verbs. These verbs and their most popular particles (e.g. *up*, *out*, *down*, *back* etc.) were checked for correct markings. Eight per cent of the cases were incorrect (coded phrasal verbs when they should not have been or not coded as phrasal verbs when they should have been). The best estimate of the error margin is therefore 8%. All errors identified in the subset we looked at were corrected. In the unchecked cases there are 373 instances of phrasal verbs, which means that approximately 30 of them are an error.

The overall error margin for lexical units for the complete corpus (phrasal verbs, compounds and polywords) is estimated at 0.3%. In conversation, one per cent of the data was discarded because they were not intelligible due to lack of context. 7.5% of all words have been identified as borderline, as an analysis in the following section will show, and we estimate an error margin for borderline cases of 20%. This means that up to 9% of our data is comprised of borderline cases. Agreement of units signaling direct metaphors such as *like* or *as* was 95%. Units coded for direct metaphor were not checked separately because their behavior is closely connected with the behavior of metaphor signals.

Cohesive elements can be used metaphorically in an implicit way, as the following example demonstrates. “Naturally, to embark on such a step is not necessarily to succeed in realizing *it*” (A9J-fragment01). *It* is a cohesive device. It refers back to *step* and is therefore cohesive. It is also an implicit metaphor because the lexeme it is referring to (*step*) is metaphorically used. During data analysis, it became apparent that a number of these implicit metaphors were improperly – and systematically – coded as non-metaphors. To address this omission, the following measures were taken. 34 (most frequent) potentially cohesive lemmas (27,501 tokens) were reanalyzed. Since these 27,501 expressions comprise about 16% of all data, all of these cases were re-analyzed, with the result that the number of implicit metaphors increased substantially.

The correction procedure was as follows: step 1: for each potentially cohesive unit, it was decided whether or not it was indeed cohesive, following a coding schema that was developed during an initial analysis of about 45,000 units, discussing tricky cases as four coders went along. Step 2: reliability was checked between pairs of raters in a test sample of over 2,000 words. Results

were good. They yielded Kappas of, on average, 0.79. Step 3: for each unit that was determined to be cohesive, it was also checked whether it was used metaphorically in an implicit way. Step 4: decisions on implicit metaphor were tested for reliability between four analysts. Reliability was 100% for news, academic texts and fiction, but for conversation it was substantially lower. On the basis of the reliability test, the initial coding instructions were formulated more explicitly. Step 5: all data were analyzed based on the refined instructions – each register by one person. Step 6: a sample of 1,000 cases per register was analyzed by a fifth judge. ⁹(The reliability between the judge and each analyst was tested and was found to be the same as the results between the analysts (100% for all registers but conversation).

After error correction all annotated files were converted into an SPSS database. All contractions, such as *I'd* for *I would*, were treated as two distinct cases in the database. Units that were separate units according to BNC-Baby but were treated as single units by our procedure (e.g. compounds, phrasal verbs) were collapsed into single cases. For all the ensuing statistical analysis all cases that were discarded from metaphor analysis as well as all separate POS-tags for genitive 's or ' were deselected in SPSS. After exclusion of these cases, the total number of units remaining for analysis of news texts is 44,792. The figures for the other registers are 49,314 (academic texts), 44,684 (fiction) and 47,934 (conversations), yielding a total of 186,688 units.

5.4 Analysis and Results

From Biber's (1988) research it can be deduced that since word class interacts with register, metaphor may interact not only with register but also with the relation between register and word class. For instance, nouns are typical of informational registers such as news texts but verbs are not. A question that has not been addressed so far is: do metaphorical nouns and verbs in news texts follow the distribution of the non-metaphorical ones? To answer this question not only for nouns and verbs but a range of other word classes, I will first test whether there is a three-way interaction between metaphor, register and word class (Section 5.4.1). Since the registers are tagged for part of speech, it is possible to study which word classes are typically used metaphorically in news texts and how this picture compares to word classes and their

⁹ Gerard Steen

metaphorical use in the other registers. This analysis will thus be a first step towards a differentiated analysis of the function of metaphor in newspaper articles.

The lexical units in our corpus have not only been coded for metaphorical or non-metaphorical use but have also received additional, more refined labels. For each unit, it was indicated whether the metaphorical language use was due to indirect metaphor, direct metaphor or implicit metaphor. When the contextual meaning and a more basic meaning of a lexical unit are related by similarity, this indicates indirect metaphor use (e.g. “*valuable* work”, where *valuable* has a more basic meaning of ‘worth a lot of money’). For directly used metaphorical language the lexical unit is used in its basic meaning but nevertheless, there is a comparison to another domain (“he wings up high like an *eagle*”, where *eagle* is used in its basic sense but there is a metaphorical comparison between the flight of an eagle and that of a person). Implicit metaphor occurs when there is substitution or ellipsis. For example, when a pronoun such as *it* in “to embark on such as *step* is not necessarily to succeed immediately in realizing *it*”, refers back to a metaphorically used lexical unit (such as *step* in this example), it was marked as implicit metaphor. Subsequent analysis will look at the role those different metaphor types contribute to the picture (Section 5.4.2).

The newspaper register consists of several subregisters such as sports pages, arts, world affairs etc. The subregisters may be quite different in their communicative functions. For example, while world news primarily inform and analyze, articles in the leisure section also want to entertain. If there is a three-way interaction between register, word class and metaphor, there may thus also be such a relation between the variables subregister (in news), word class and metaphor. This relation will be tested in Section 5.4.3.

The last Section (5.4.4) will be devoted to two cases studies intended as first steps towards fleshing out and interpreting the quantitative findings of the analysis. The first is devoted to nouns – a common feature of the news register. The second will take a closer look at the behavior of verbs – which are, compared to more involved registers such as conversation, less typical for news.

5.4.1 Relation of metaphor, register and word class

Biber’s (1988) and Biber et al.’s (1999) research has documented that there is a significant interaction between register and word class. It is not known how

metaphor relates to this picture. This section thus addresses the following question:

Is there a significant interaction between the variables metaphor, register and word class?

The association between the three variables of “register” (academic texts, news texts, fiction, conversation), “word class” (adjectives, adverbs, determiners, nouns, prepositions, verbs, conjunctions, remainder) and “metaphor” (metaphor, non-metaphor) was checked in a loglinear analysis (for details see Field, 2005). The remainder category contains pronouns, numbers, existential *there*, etc. The number of borderline cases of metaphorical language use (annotated WIDLII as explained in Section 5.3.3) was marginal. To be maximally inclusive, these unclear cases were subsumed under the metaphor category. Lexical units annotated as signal for metaphorical language are not metaphorically used themselves and are therefore part of the non-metaphor category. The analysis thus concentrates on the distinction between metaphor and non-metaphor and its relation to register and its interaction with word class. When a loglinear analysis detects significant three-way interactions, interaction effects are further examined through chi-square tests (for a brief explanation for the uninformed reader, see the appendix to this chapter.) Since the large number of observations in the corpus data may likely lead to spurious significant results, the alpha level was set at .01 in order to reduce the possibility of a Type 1 error.

The loglinear analysis showed a significant three-way interaction between metaphor, register and word class, $\chi^2(21) = 1,511.41, p < .001$. Thus, just looking at the overall distribution of metaphor by register or metaphor by word class ignores the fact that word classes themselves are distributed differently across registers (as was shown previously by Biber, 1988) and that metaphor itself is distributed unequally across word classes and registers. Chi-square tests were performed to further analyze the lower-order interaction between metaphor and word class within distinct registers for a more differentiated picture.

Before doing so, a chi-square analysis for the overall corpus tested the association between register and word class to check whether the present corpus parallels the registers described by Biber et al. (1999). The analysis shows that there is a significant effect with a small to medium effect size: $\chi^2(21) = 18,213.74, p < .001$; Cramer’s $V = 0.18$).

Table 5.1*All lexical units in relation to register, divided by word class (significant deviations in bold)*

word class		registers				
		academic	news	fiction	conv.	total
nouns	count	13342	12930	9648	5582	41502
	% within word class	32.1% (+)	31.2% (+)	23.2% (-)	13.4% (-)	100.0%
verbs	count	8147	7869	9788	12158	37962
	% within word class	21.5% (-)	20.7% (-)	25.8% (+)	32.0% (+)	100.0%
adjectives	count	4659	3760	2969	1750	13138
	% within word class	35.5% (+)	28.6% (+)	22.6% (-)	13.3% (-)	100.0%
adverbs	count	2503	2183	2839	4290	11815
	% within word class	21.2% (-)	18.5% (-)	24.0%	36.3% (+)	100.0%
preposit.	count	6463	5135	4228	2479	18305
	% within word class	35.3% (+)	28.1% (+)	23.1%	13.5% (-)	100.0%
determin.	count	6743	5700	4961	4195	21599
	% within word class	31.2% (+)	26.4% (+)	23.0% (-)	19.4% (-)	100.0%
conjunct.	count	3028	2437	2498	2401	10364
	% within word class	29.2% (+)	23.5%	24.1%	23.2% (-)	100.0%
remainder	count	4429	4778	7717	15079	32003
	% within word class	13.8% (-)	14.9% (-)	24.1%	47.1% (+)	100.0%
total	count	49314	44792	44648	47934	186688
	% within word class	26.4%	24.0%	23.9%	25.7%	100.0%

Note. + and – indicate over- and underuse of a category.

Nouns and adjectives are used significantly more frequently in academic texts and news texts than in fiction and much more frequently than in conversation (see Table 5.1). Prepositions are also most frequent in academic texts and news, whereas they are least common in conversation and occur as expected in fiction. The proportion of determiners in news is also high and seems to correlate with highly informational content, probably due to the large

proportion of nouns. Verbs display the opposite pattern. They are more common in conversations and fiction than in academic texts and news texts. Adverbs and items in the remainder category are least frequent in academic texts and news texts. They are most frequently used in conversation while they are used as expected in fiction. Just as was the case with Biber et al.'s (1999) news sample, news texts in our corpus are characterized by a high proportion of nouns, prepositions and adjectives and a low number of verbs, adverbs and the remainder category, as is typical of highly informational registers. The high proportion of determiners is compatible with Biber's (1988) findings since their use is connected to the use of nouns, which makes determiners more typical of informational registers. The results verify that the present corpus is representative of the registers described in Biber et al.'s work on news, academic texts, fiction and conversation and allows for drawing parallels to their research.

Having established the comparability of results to Biber's findings, the relationship between metaphor and word class in news texts was examined. In order to work out what is typical of metaphor in news, the results were compared to the relation between metaphor and word class in academic texts, in fiction and in conversation by examining standardized residuals (details are provided further below).

The interaction between metaphor and word class in news texts was tested by a chi-square analysis. The test shows a significant association between word class and relation to metaphor with a medium to large effect size: $\chi^2(7) = 4,252, p < .001$, Cramer's $V = 0.31$. All cells contribute to the significant interaction between word class and metaphor (see Table 5.2). Of all the word classes prepositions score highest for metaphor. 38.1% of all prepositions are metaphor related. The proportions for metaphorically used verbs and adjectives are also high: 27.6% and 21.0% respectively. They are all significantly higher than expected. The percentage of metaphor-related words in the remainder category, conjunctions, adverbs, determiners and nouns is comparatively low. They are all significantly lower than expected. Verbs, prepositions and nouns are most frequently used metaphorically. Together, they account for 79.42% of all metaphor-related words. Since these word classes have the highest overall frequency count, this naturally boosts the absolute number of metaphors. From the three-way interaction above we also know, however, that the absolute numbers of metaphors per word class have to be interpreted in relation to the importance of a word class in a particular

Table 5.2

Relation of lexical units to metaphor in news texts, divided by word class (significant deviations in bold)

word class		non-metaph.	metaph.	total
nouns	count	11229	1701	12930
	% within word class	86.8% (+)	13.2% (-)	100.0%
verbs	count	5697	2172	7869
	% within word class	72.4% (-)	27.6% (+)	100.0%
adjectives	count	2969	791	3760
	% within word class	79.0% (-)	21.0% (+)	100.0%
adverbs	count	1942	241	2183
	% within word class	89.0% (+)	11.0% (-)	100.0%
prepositions	count	3177	1958	5135
	% within word class	61.9% (-)	38.1% (+)	100.0%
determiners	count	5361	339	5700
	% within word class	94.1% (+)	5.9% (-)	100.0%
conjunctions	count	2415	22	2437
	% within word class	99.1% (+)	.9% (-)	100.0%
remainder	count	4660	118	4778
	% within word class	97.5% (+)	2.5% (-)	100.0%
total	count	37450	7342	44792
	% within word class	83.6%	16.4%	100.0%

Note. + and – indicate over- and underuse of a category.

register. In other terms, it is necessary to examine which word classes show special interactions with (non)metaphorical use.

In order to examine whether a word class that is (un)typical for a register may be (un)typical when metaphorically used, Table 5.3 opposes standardized residuals for metaphorical and non-metaphorically used units per word class for all four registers. Standardized residuals reflect the degree of deviation of the observed frequencies from the expected frequencies. With alpha at 0.01, a positive standardized residual of more than 2.58 indicates that a category is used more often than expected by chance. A negative residual of the same magnitude indicates that a category is used less frequently than would be expected by chance. The pattern in news is compared to the pattern in the other registers. By examining similarities and differences to other registers it is

Table 5.3

Standardized residuals for relation of lexical units to metaphor per register, divided by word class (significant deviations in bold)

	academic texts		news		fiction		conversation	
	non-M	M	non-M	M	non-M	M	non-M	M
nouns	1.2	-2.5	4.0	-9.1	1.4	-3.8	-0.4	1.5
verbs	-9.2	19.3	-10.9	24.6	-4.2	11.6	-1.7	5.6
adjunct.	0.7	-1.5	-3.1	7.0	-4.4	11.9	-2.4	8.5
adv.	4.7	-9.8	2.7	-6.2	1.5	-4.0	0.1	-0.5
prepos.	-21.4	45.0	-17.0	38.5	-14.9	40.6	-13.5	46.9
determ.	9.5	-19.9	8.6	-19.5	3.2	-8.7	-5.3	18.4
conjunct.	10.4	-21.9	8.4	-18.9	5.8	-15.8	3.2	-11.0
remain.	11.7	-24.5	10.5	-23.8	10.3	-28.0	9.5	-33.0

Note. Patterns corresponding to patterns in news are shaded in grey.

possible to work out what is typical about metaphor in news texts, thereby creating a register profile on metaphor in news.

Strikingly, in news texts, all word classes used more frequently than expected by chance when metaphorical (positive standardized residual), are opposed by a less frequent use than would be expected by chance when non-metaphorical (negative standardized residual). The rest of the word classes display the opposite pattern – more frequent than expected when not metaphorically used, less frequent than expected when metaphorically used. In all other registers this pattern holds only for some word classes. This is why there is a three-way interaction between metaphor, word class and register, and not just a two-way interaction: if we consider metaphor per word class, we see that metaphors exhibit diverging distributions across the four registers. When we look at metaphor in language use, it is thus not enough to merely consider the register we are looking at but we need to take into account that each register has its characteristic distribution of word classes. Different registers exhibit different relations between metaphor and word class and different word classes similarly exhibit different relations between metaphor and register.

In news, the standardized residuals are all significant and positive for metaphor-related prepositions, verbs and adjectives and significant and negative for non-metaphor related units in these word classes.

- Prepositions and verbs display this pattern in most other registers. An exception is conversation, where the underuse for non-metaphorical verbs does not reach significance. This may indicate that the relation of verbs to

non-metaphorical versus metaphorical use may differ between spoken and written registers.

- Prepositions behave as predicted by cognitive linguistic literature: in all registers they are used more frequently than expected when metaphorical. Abstract relations are frequently expressed in terms of mappings from the source domain of space (e.g. “*at one o’ clock*”, where time is conceived as a point in space).
- Adjectives behave much in the same way. The pattern in news is the same as in fiction and conversation but differs from academic texts, for which adjectives, regardless of their relation to metaphor, behave as expected by chance.

The categories remainder, conjunctions, determiners, nouns and adverbs display negative significant standardized residuals when they are metaphorically used but positive significant standardized residuals when they are non-metaphorically used. This means that they are significantly underused when metaphorical.

- Conjunctions and the remainder category display this pattern in all the registers. This shows their typical grammatical function. For most of the representatives of this word category (e.g. *and, but, because, or* etc.), a contrast between a contextual and a more basic meaning cannot be established.
- Determiners exhibit the same pattern as academic texts and fiction (underrepresentation of metaphorical units versus overrepresentation of non-metaphorical units), but they are strikingly different from conversation, in which metaphorical determiners are overrepresented and non-metaphorical units are underrepresented. Written registers, including news, seem to make less use of metaphorical determiners – presumably because of more precise formulations that do not refer back to utterances in vague terms, as may be more common in conversation (e.g. “Cos you don’t go as slow as this, even round here something like *that Ann*” (KB7-fragment31)).
- The pattern for nouns in news is strikingly different from the behavior of nouns in all other registers. Only in news is there a clear opposition between metaphorical and non-metaphorical use. Nouns display a negative association with metaphor but a positive association with non-metaphor. This may be an indication of the description of concrete places, agents and institutions, which do not have a more basic meaning and are therefore not metaphorically used. It also parallels the pattern for determiners. Section 5.4.4.1 will look in greater detail at the behavior of nouns compared to the

academic register, which, as a register high on the informational scale, also exhibits a prominent use of nouns.

- Adverbs in news have the same pattern as adverbs in academic texts. Only in these two registers is there a direct opposition of metaphorical and non-metaphorical use: in both registers, adverbs display an overuse of non-metaphorical items, whereas metaphorical uses are underused. This distribution likely stems from their frequent grammatical function to link thoughts, for example, and to connect paragraphs (e.g. *also, then, so* etc.).

This analysis has examined how the relation between word classes and metaphor differs for news texts in comparison to academic texts, fiction and conversation. The patterns across the registers are quite similar for prepositions, verbs, conjunctions and the remainder category. Prepositions and verbs tend to be used metaphorically more often than expected but less frequently than expected when they are non-metaphorical. Conjunctions and the remainder category display the opposite pattern: they tend to be used non-metaphorically more often than expected but less frequently than expected when they are metaphorical. The distribution of metaphor versus non-metaphor for adjectives in news texts is most similar to their behavior in fiction and conversation and most dissimilar to academic texts. Metaphorically used adjectives occur more often than would be expected by chance (21.0%), whereas non-metaphorically used adjectives are underused (79.0%). The behavior of nouns in news is different from that in all other registers. Only in news does an overuse of non-metaphorical nouns (86.8%) contrast to an underuse of metaphorical nouns (13.2%). It parallels the behavior of determiners, which are also underused when metaphorical (5.9%). This is not only typical of news but also of the two other written registers. The behavior of adverbs parallels the behavior of adverbs in academic texts (underuse when metaphorical (11.0%) and overuse when not metaphorical (89.0%)) and is most different from conversation.

For a more differentiated picture, the following analysis looks at how the relation between registers and metaphorical language use differs for each word class in order to highlight what is special about news compared to other registers. For example, while verbs are relatively metaphorical in all registers, this may be more or less typical of news, relative to the other registers. Eight chi-square analyses were performed to test the relation between register (academic texts, news, fiction, conversation) and metaphor (metaphorical, non-metaphorical) for each of the eight word classes (nouns, verbs, adjectives, prepositions, determiners, conjunctions, remainder) separately. For

Table 5.4

Standardized residuals for relation of lexical units to metaphor per word class, divided by register (significant deviations in bold)

		acad. texts	news	fiction	convers.
nouns	non-M	-5.3	0.2	2.9	4.1
	M	13.5	-0.5	-7.5	-10.3
verbs	non-M	-9.0	-8.8	3.1	11.7
	M	18.8	18.3	-6.4	-24.4
adjectives	non-M	0.6	-1.8	-0.6	2.4
	M	-1.3	3.8	1.2	-5.0
adverbs	non-M	-0.5	-0.9	-0.1	1.1
	M	1.5	3.0	0.3	-3.5
prepositions	non-M	-4.6	-0.1	3.8	2.7
	M	5.9	0.1	-4.9	-3.4
determiners	non-M	0.7	2.3	0.9	-4.6
	M	-2.2	-7.4	-2.9	14.6
conjunctions*	non-M	0.0	-0.1	0.1	0.1
	M	0.8	1.2	-0.9	-1.3
remainder	non-M	-1.1	-1.0	0.1	1.0
	M	10.2	9.5	-1.4	-9.9

* non-significant chi-square at alpha = .01 $\chi^2(3) = 4.639$ $p = 0.2$

conjunctions, there was no significant relation between the two variables. Chi square results for all other word classes were significant (Table 5.4).

The previous analysis has shown that within news, metaphorical prepositions, verbs and adjectives are used more often than expected, but that they are used less often than expected when non-metaphorical. Let us now place these findings in the grander picture:

- An overuse of metaphorical verbs is actually typical within each of the registers. When the behavior of verbs is checked relative to the other registers, metaphorical verbs are more typical in news compared to fiction and conversation. The behavior of verbs resembles the pattern in academic texts, for which, just as in news, there is a clear contrast between an underuse of non-metaphorical verbs and an overuse of metaphorical ones.
- While prepositions are also typically metaphorical within each register, as has been shown earlier, reflecting their expression of abstract relations, metaphorical and non-metaphorical prepositions in news, relative to the other registers, do not make a contribution to the significant relation between word class and register. Metaphorical prepositions are more typical in academic texts than in news texts, and more untypical in conversation

and fiction than in news. This may be due to more concrete references using the spatial senses in conversations and dialogues in fiction (e.g. “I’d probably put my wardrobes *on* his *on* the stair wall” (KB7-fragment10). In news, abstract references may be more common (“Mr. Franklin faced some criticism from City commentators *on* both those counts” (A1E-fragment01).

- Metaphorical adjectives in news are overused, relative to other word classes. This means that they behave the same as within fiction and in conversation. A comparison relative to the other registers shows that metaphorical adjectives are actually most typical of news, compared to other registers where they are either underused compared to their neutral non-metaphorical use (conversation) or behave as expected (academic texts and fiction).

The earlier analysis that looked at the relation between word class and metaphor for each register separately has also revealed an underuse of metaphorically used units in the remainder category, conjunctions, determiners, nouns and adverbs. This underuse was mirrored by an overuse of non-metaphorical units in those word classes. When the relation between word class and register for each of the word classes is considered separately, the following picture emerges.

- For conjunctions, there is no significant interaction between word class and metaphor. All categories, regardless of their metaphorical status, are used as expected in all of the registers.
- As far as determiners are concerned, the relationship between word class and metaphor displays the same pattern for all the written registers. Metaphorical determiners are underused, whereas non-metaphorical ones are overused. An underuse of metaphorical determiners in news also shows up relative to the other registers. Metaphorical determiners are less typical of news than they are of conversation, where they are used more often than expected. This makes press reports similar to fiction texts for which metaphorical determiners are also less frequent than expected. In academic texts, they behave according to chance. Non-metaphorical overuse in news does not reach significance. Again, there is a clear contrast between the written registers and the spoken register of conversation, which exhibits an overuse of metaphorical determiners.
- All registers show an underuse of metaphorical units in the remainder category relative to the other word classes. Relative to the other registers, however, metaphorical units in the remainder category of news texts are

used more often than expected. This parallels the overuse in academic texts and contrasts their underuse in conversation. A check of the top two most frequently used metaphorical units in the remainder category (*it* and *they*) suggests that most of the tokens are implicit metaphors (e.g. “Advocates of the first-past-the-post system argued that *it* was the only way of delivering strong government” (A1J-fragment34)). Only 2 out of the 199 metaphorical uses of *it* are not implicit metaphors. There are 93 metaphorical uses of *they*, of which 83 are implicitly metaphorical. Most of the implicit uses of metaphorical *it* and *they* are found in academic and news texts, which reflects the above result.

- News is the only register that exhibits a clear contrast between underuse of metaphorical nouns and an overuse of non-metaphorical ones. Standardized residuals in news relative to the other registers show, however, that nouns (both metaphorical and non-metaphorical ones) behave according to expectation. This means that the use of non-metaphorical and metaphorical nouns in news does not stand out relative to the other registers. In contrast, nouns in academic writing show a clear contrast between metaphorical and non-metaphorical uses: metaphorical ones are used more frequently than expected, whereas non-metaphorical ones are less common than expected. This, again, shows nicely how the two highly informational registers clearly differ in their use of nouns: in news, nouns tend to be less metaphorical compared to academic texts.
- Adverbs also show an interesting pattern. Within news, they are a word class that is typically non-metaphorical. When word class and metaphor in news are looked at relative to the other registers, however, metaphorical adverbs are found to be more typical in news, particularly relative to conversation. This is because adverbs in conversation tend to be used literally, either because there is no basic meaning that could be used for a metaphorical contrast (e.g. *well, just*) or because they point to entities in the surroundings of the speakers (e.g. “It’s just stood *there*” (KB7-fragment10)). Such concrete uses are less typical for news, where, for example, *there* is used for discourse management (e.g. “Like the heckler, he was a liberal. *There* the similarity ends.” (AHF-fragment63) or expresses abstract meanings “Even so, exotica such as lead-only Porsche 911s and Ferraris are unlikely part of this trend, so no bargains *there* (...)” (A38-fragment01).

This analysis examined how the relation between register and metaphor differs across the eight word classes. It was found that the (non)metaphorical use of conjunctions is statistically the same across registers. For all other word classes there was a significant relationship between the two variables of

metaphor and register. Verbs in news, relative to verbs in more “involved” registers, are typically metaphorical (27.6% metaphorical use of verbs is significantly higher than the 9.1% in conversation and the 15.9% in fiction). Metaphorical prepositions (38.1%) are less typical in news relative to the closely related academic register (42.5%). Their behavior is neutral relative to their underuse in fiction and conversation. Relative to the other registers, metaphorical adjectives are most typical for news (21.0%). Metaphorical determiners are underused not only relative to other word classes but also relative to all other registers but fiction (5.9% in news versus 15.6% in conversation, 8.1% in academic texts and 7.6% in fiction). In the remainder category, there is an overuse (2.5%) of metaphorical items in news (just as in academic texts (2.6%)), which is likely due to implicit metaphor (*they, it*) being more typical for informational registers than for fiction (0.9%) or conversation (0.2%). While nouns are typical of both informational registers news and academic texts, metaphorical nouns are a characteristic of academic writing (17.6%) but not of news reports (13.2%). Relative to other registers, metaphorical adverbs are typical for news (11.0%) but not for other registers (10.0% in academic texts, 9.3% in news texts and 7.5% in conversation). In academic texts and fiction metaphorically used adverbs occur as expected.

Table 5.5 summarizes the results of the two-way interaction between metaphor and word class within the news register (on the left) and the two-way interaction between metaphor and register within word class (on the right). The left column thus shows us behavior of metaphor versus non-metaphorical language use per word class in news. The right column indicates the different behavior of metaphor versus non-metaphor per word class in news relative to other registers.

Table 5.5

Relation between (1) metaphor and word class within news (word classes relative to each other) and between (2) metaphor and register within word class (news relative to other registers)

	within news (1)		within word class (2)	
	non-M	M	non-M	M
nouns	overuse	underuse	not significant	not significant
verbs	underuse	overuse	underuse	overuse
adjectives	underuse	overuse	not significant	overuse
adverbs	overuse	underuse	not significant	overuse
prepositions	underuse	overuse	not significant	not significant
determiners	overuse	underuse	not significant	underuse
conjunctions	overuse	underuse	not significant	not significant
remainder	overuse	underuse	not significant	overuse

There is a significant interaction between metaphor and word class within the news register. This is due in part to an overuse of metaphorically used units for verbs, adjectives and prepositions. This overuse is mirrored by an underuse of non-metaphorical units in each of those word classes. Nouns, adverbs, determiners, conjunctions and the remainder category exhibit the opposite pattern. Metaphorical uses are less common than expected while non-metaphorical uses are more common than expected. The other registers do not exhibit the same patterns of non-metaphorical versus metaphorical usage. Only for prepositions, verbs, conjunctions and the remainder category are they similar.

There is also a significant interaction between metaphor and register within each word class. In comparison to other registers, metaphorical verbs, adjectives, adverbs, and the remainder category are used significantly more often in news relative to other registers. Metaphorical determiners are used less often than expected.

These significant interactions are a reflection of the significant three-way interaction between the variables metaphor, register and word class. This adds another level of complexity to Biber's research, which has shown that there is a significant interaction between register and word class. The analysis has shown that word classes that are more (or less) frequent than others will naturally count more (or fewer) metaphorically used words in absolute terms. Because of the significant three-way interaction, this absolute number has to be interpreted in relation to the frequency in a register, however. For example, this more inclusive analysis – taking word class into account – has revealed an unexpectedly high proportion of metaphorically used verbs in contrast to other word classes and registers. This deviation from the more general patterns of verbs may point to functions of verbs in news texts that are different from those in other registers.

5.4.2 Relation of metaphor types and register

The previous section has established a three-way interaction between metaphor, register, and word class. The annotation procedure has, however, distinguished between three different types of metaphorical language use. I will thus refine the role of metaphor in relation to register and word class by examining the relation of metaphor types to register and word class. These types are non-metaphor, indirect metaphor (*defend* the thesis), direct metaphor (he flies like an *eagle*) and implicit metaphor (to capture power and then use *it*). The following question is addressed:

Is there is a significant three-way interaction between the variables metaphor type, register and word class?

The association between the three variables of “register” (academic texts, news texts, fiction, conversation), “word class” (adjectives, adverbs, determiners, nouns, prepositions, verbs, conjunctions, remainder) and “metaphor type” (non-metaphor, indirect metaphor, direct metaphor, implicit metaphor) was checked in a loglinear analysis. It showed a significant three-way interaction between metaphor type, register and word class $\chi^2(63) = 1,527.95, p < 0.001$. Thus, just looking at the overall distribution of metaphor type by register or metaphor type by word class ignores the fact that word classes have different distributions across different registers and that metaphor types themselves are distributed unequally across word classes and registers.

A chi-square test was performed to further analyze the lower-order interaction between metaphor type and register for a more differentiated picture. It checked the relation between the variables “register” (academic

Table 5.6

Types of lexical units in relation to metaphor, divided by register (significant deviations in bold)

register		metaphor types				total
		non-M	indirect	implicit	direct	
academic	count	40192	8961	121	40	49314
	% within register	81.50% (-)	18.17% (+)	.25% (+)	.08% (-)	100.0%
news	count	37450	7145	85	112	44792
	% within register	83.61% (-)	15.95% (+)	.19%	.25% (+)	100.0%
fiction	count	39355	5074	54	165	44648
	% within register	88.15% (+)	11.36% (-)	.12%	.37% (+)	100.0%
conversation	count	44247	3637	31	19	47934
	% within register	92.31% (+)	7.59% (-)	.06% (-)	.04% (-)	100.0%
total	count	161244	24817	291	336	186688
	% within register	86.37%	13.29%	.16%	.18%	100.0%

Note. + and – indicate over- and underuse of a category.

texts, news texts, fictions, conversation) and “metaphor type” (non-metaphor, indirect metaphor, direct metaphor, implicit metaphor). The test shows a significant association between the two variables with a small effect size ($\chi^2(9) = 3,045, p < .001$; Cramer’s $V = 0.07$).

13.63% of all lexical units are related to metaphor, and 13.29% of all lexical units are indirect metaphor (see Table 5.6). Most metaphors are thus indirect: 97.5% of all metaphor-related units are indirectly used. In news, indirect metaphor accounts for 97.3% of all metaphorically used words. Indirect metaphors are thus the group mainly responsible for the distribution of metaphors across the registers, while implicit metaphor and direct metaphor only play a marginal role. Given the large differences between the three metaphor categories, the interaction between metaphor types and registers is therefore due to indirect metaphor. The group of indirect metaphors in news texts is significantly smaller than in academic texts (15.95% versus 18.17%). On the other hand, indirect metaphors are significantly more frequent in news than in fiction (11.36%) and conversation (7.59%).

Implicit metaphor follows the same pattern as indirect metaphor. The proportion of implicit metaphors in news texts is smaller than in academic texts (0.19% versus 0.25%) but larger than in fiction (0.12%) and conversations (0.06%). Implicit metaphor in news does not, however, contribute to the significant chi-square test statistic (and neither does it in fiction).

Direct metaphor does not follow the pattern of indirect and implicit metaphor. News is in second place again (0.25% of lexical units in news are direct), but this time it is preceded by fiction (0.37%). Direct metaphor has a higher proportion in news than in academic texts (0.08%) and conversation (0.04%). The pattern of direct metaphor in news texts does not completely parallel the distribution of metaphor signals across register. Steen et al. (2010) report that news does not use signals significantly more often than would be expected by chance. These results indicate that, while direct metaphor is a characteristic of news texts, it tends not to be signaled as often as would be expected compared to most other registers. Caution is in order, however, as it is quite possible that clause length skewed the results for direct metaphor. A long clause could count more words as direct metaphor than a short clause. If news consists of longer clauses on average (or longer clauses whenever there is direct metaphor involved), this may artificially bias the total number of direct units.

In order to get an impression of the plausibility of this scenario, I counted, for each of the registers, the units following a signal that were marked

for direct metaphor. In addition, the number of units marked as direct metaphor when the cross domain mapping was not signaled was recorded. Conversation, for instance, differs dramatically from the written texts. For example, the 10 signaled instances of direct comparison count 13 units as direct metaphor. This means that typically, there is only one referent involved in the source domain side of the comparison (e.g. “He’s like a *ferret*” (KBD-fragment21), “It’s no use, living like a *cabbage*” (KBC-fragment13)). News, by contrast, has often more than one referent involved in the comparison (e.g. “to go to Poitou/Saintonge and not look at any of its churches, would be like *going to an African game-reserve and ignoring the animals*” (AHC-fragment21)). While literary texts have precisely twice as many signals as news texts (74 versus 37), there are not twice as many units following these signals that have been marked as direct metaphor (149 versus 88). The same discrepancy applies for unsignaled instances of direct metaphor. 8 unsignaled cases in fiction comprised 16 direct units, whereas 7 unsignaled occurrences in news counted 24 direct units. Although not a rigorous statistical test, these numbers lend support to the idea that news ranks high in direct metaphor because it has comparatively more words following a metaphor signal that have been annotated as belonging to the direct mapping.

While news is more similar to academic texts as far as indirect and implicit metaphors are concerned, when looking at direct metaphor it more closely resembles fiction. In order to visualize similarities and differences across registers, Figure 5.1 plots the four registers on a scale. For those on the right hand side of the scale, a category occurs more frequently than expected. The left hand side displays the registers in which a category is used less often than expected. This is regardless of whether that deviation is significant.) The news register ranks second, after academic texts, for implicit and indirect metaphor. The figure shows that while indirect and implicit metaphor display the same pattern, the registers on the implicit scale do not take up as much space, indicating that they differ less from each other for implicit metaphor than for indirect metaphor.

The more refined analysis in this section has revealed that indirect metaphor is the main contributor to the significant three-way interaction between metaphor, register, and word class. 97.5% of all metaphorically used units are indirectly used. The remaining 2.5% are shared in almost equal terms by direct and implicit metaphor. With its 16% indirectly used metaphorical units, news is, compared to fiction (14.4%) and conversation (7.6%), a fairly metaphorical register. Only academic texts rank slightly higher (18.2%). The category of implicit metaphor in news does not contribute to the significant

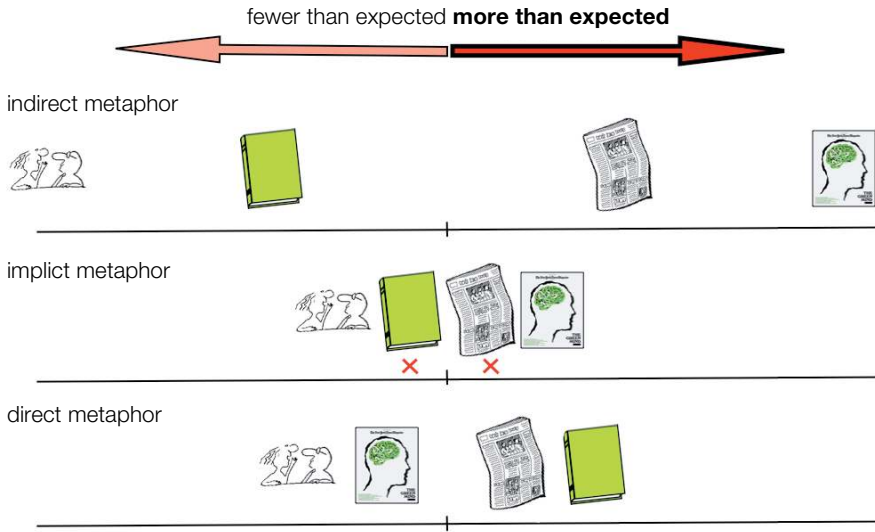


Figure 5.1 Visual ranking of metaphor types for indirect, implicit and direct metaphor. Non-significant deviations from what is expected by chance are marked with a cross.

interaction between metaphor type and register. Direct metaphor, by contrast, does have an impact, even though in the overall picture direct metaphors are not important. Interestingly, for direct metaphor, news is preceded by fiction. The higher percentage of direct metaphor in fiction than news may be connected to the intuitive assumption that fiction is more metaphorical than news (while analysis has shown that it is the other way around).

5.4.3 Relation of metaphor, subregister and word class

Just as there are different subregisters within the broad register of conversation (Cameron, 2003), there are subregisters in news as well. They too, have different purposes. Whereas business and world news have the main purpose to inform and analyze, texts from the arts or leisure section also want to entertain. Op-ed pieces, film or book reviews express personal opinions, whereas articles in the commerce section are kept more to the facts and try to explain abstract concepts. A story on a political event may need more minute research, rewriting and editing than a book review in the leisure section. While they all share similar production circumstances, it is mainly their communicative purpose and content that differ. This difference is also reflected in linguistic differences.

The following analysis therefore focuses on the specific subregisters making up the general news register and examines the distribution of metaphor across different newspaper subsections. The present news sample consists of the seven subregisters commerce (8 texts), world affairs (19), natural sciences (3), social sciences (7), applied sciences (5), arts (8) and leisure (13). For purposes of statistical analysis, the seven subregisters are divided into three main groups in order to keep the number of texts in each of the groups roughly equal. The three main groups with a total of 44,792 words consist of the subregisters “hard news” (commerce and word affairs – 27 texts, 18,208 words), “sciences” (natural, social and applied sciences – 25 texts, 9,595 words) and “soft news” (arts and leisure – 21 texts 16,999 words).

Biber (1988) has shown that register interacts with word class, reflecting the registers’ different situational characteristics. Since the broadly defined news register consists of subregisters that may share production circumstances but not necessarily a communicative purpose, it is reasonable to expect that there is not just a three-way interaction between metaphor, word class and the quite different registers news, fiction, conversation and academic texts, but also between metaphor, word class and the three *subregisters* (hard news, sciences, soft news). This also logically follows from Biber’s (1988, p. 191) observation that subregisters vary with respect to multiple dimensions. For example, out of six subregisters of press reportage (politics, sports, society, sport news, finance, cultural events), he found cultural press reportage to be the most involved type and financial reportage to be the least involved. The following section thus addressed the following question:

Is there a significant three-way-interaction between the variables metaphor, subregister and word class?

The results of a loglinear analysis showed a significant three-way interaction between subregister, metaphor and word class: class $\chi^2(14) = 62.27, p < .001$. This means that the main effects of subregister and metaphor cannot be interpreted on their own because of the significant higher-order interaction between metaphor, subregister and word class; if some word classes, for example, were not included in the analysis, comparing subregister and metaphor would yield a different picture.

The three-way interaction effect is broken down by looking at two sets of two-way interactions. One chi square test shows that there is a significant interaction between the variables “subregister” (hard news, sciences, soft news) and “metaphor” (metaphor, non-metaphor), ($\chi^2(2) = 65.991, p < .001$, Cramer’s $V = 0.04$). The effect size is small. Table 5.7 illustrates that the

significant interaction is mainly due to two cells: metaphorical units are overused in hard news but underused in soft news. Intuition would suggest the other way round (just as fiction is intuitively judged to be more metaphorical than academic texts). Earlier analysis of the registers has shown, however, that the most abstract one – academic texts – is most metaphorical. Similarly, hard news is commonly more abstract and may thus need metaphors to explain complex situations and concepts to the average reader. Articles in this section of the newspaper may at times need knowledge that goes beyond that of some readers (e.g. in financial news *poison pill defence* or *LMX spiral*). Soft news, in contrast, usually presents topics (e.g. descriptions of a landscapes in travel news or book reviews) that are easier to digest, and may thus have less need for metaphorical mappings.

A series of eight chi-square tests, one for each word class separately, was then performed in order to highlight what is typical for each subregister in comparison to the others. Chi-square tests for the word classes adjectives, adverbs, determiners and conjunctions were not significant. Significant interactions between the variables metaphor and register were found for nouns, verbs, prepositions and the remainder category. The strongest difference between subregisters was found within prepositions. While hard news is characterized by an underuse of non-metaphorical prepositions relative to the other subregisters, metaphorical prepositions are overused. Soft news displays the exact opposite pattern: it is characterized by an overuse of non-metaphorical prepositions but an underuse of metaphorical ones. Hard news

Table 5.7

Lexical units in relation to metaphor, divided by subregister (significant deviations in bold)

		non-M	M	total
hard news (commerce & world affairs)	count	14912	3296	18208
	% within subregister	81.9%	18.1% (+)	100.0%
sciences (natural, social, applied)	count	8106	1479	9585
	% within subregister	84.6%	15.4%	100.0%
soft news (arts & leisure)	count	14432	2567	16999
	% within subregister	84.9%	15.1% (-)	100.0%
total	count	37450	7342	44792
	% within subregister	83.6%	16.4%	100.0%

Note. + and – indicate over- and underuse of a category.

Table 5.8

Standardized residuals for relation of lexical units to metaphor per word class, divided by subregister (significant deviations in bold)

		hard news	sciences	soft news
nouns	non-M	-1.4	0.9	0.8
	M	3.7	-2.3	-2.1
verbs	non-M	-2.2	1.5	1.2
	M	3.6	-2.4	-2.4
adjectives	non-M	0.6	0.3	-0.8
	M	-1.2	-0.7	1.6
adverbs	non-M	-0.2	-0.3	0.4
	M	0.7	0.7	-1.1
prepositions	non-M	-2.8	-0.3	3.2
	M	3.5	0.4	-4.1
determiners	non-M	0.2	0.3	-0.4
	M	-0.9	-1.0	1.7
conjunctions	non-M	0.03	0.05	0.01
	M	-0.3	0.6	-0.1
remainder	non-met	-0.3	0.1	0.3
	met	2.2	-0.6	-1.8

typically makes use of metaphorical nouns, relative to soft news and the sciences pages, for which both metaphorical and non-metaphorical behave according to expectation. In that sense the hard news subregister behaves more like academic texts (see Table 5.8).

To summarize, the significant interaction between subregister and metaphor is mainly due to an overuse of metaphorically used words in hard news and an underuse of metaphorical expressions in soft news. Testing interactions between subregister and metaphor for each word class separately has revealed that hard news uses metaphorical prepositions more often than expected. Hard news is furthermore characterized by a prominent use of metaphorical nouns as well as verbs. Thus the more abstract and complex hard news seems to be more in need for metaphorical mappings than the more accessible soft news.

Adding the variable of metaphor to Biber's register analysis has revealed a significant three-way interaction between metaphor, register and word class. This means that metaphorical language use has to be interpreted with the knowledge that word classes are distributed unequally across registers and metaphors are distributed differently across word classes and registers. For example, in absolute numbers, metaphorically used nouns are common in

news. However, since nouns are a prominent feature of news and other highly informational texts, the high number of metaphorical nouns loses its importance.

The relation between metaphor and word class within the news register has revealed an underuse of metaphorical nouns as well as adverbs, determiners, conjunctions and the remainder category. On the other hand, metaphorically used verbs, adjectives and prepositions are overused. The relation between metaphor and word class within each word class has shown that metaphorically used verbs, adjectives, adverbs, and the remainder category are used significantly more frequently in news texts than in other registers while metaphorical determiners are used less often than expected.

More fine-grained analysis has shown that the significant three-way interaction is mainly due to indirect metaphor. In news, 97.3% of all metaphor-related words are indirectly used. In comparison to the other registers, news is highly metaphorical. While its indirect metaphor use is lower than in academic texts, it is higher than in fiction and conversation. Direct and implicit metaphors are not common overall, but they do contribute to the significant interaction. The pattern for direct metaphors in news most closely resembles that in fiction. In both registers, direct metaphor is found more often than expected. Fiction even precedes news, which may be a reason why, intuitively, fiction is judged as the more metaphorical register. Implicit metaphors in news do not contribute to the significant three-way interaction.

The statistical analysis conducted above has not only confirmed a three-way interaction between metaphor, register and word class, but also between subregister, metaphor and word class. This makes sense, since not only different registers but also subregisters diverge in their communicative functions or content (and thus their distribution of word classes). The relation between metaphor and subregisters has shown that metaphorical language use is most common in hard news and least common in soft news. The science sections use metaphorical language as expected by chance in comparison with the other two subregisters. The relation between subregister and metaphor for each word class separately revealed that metaphorically used verbs, nouns and prepositions are more commonly used in hard news than in soft news and science pages. Parallels can be drawn to Biber's (1988) findings of cultural press reportage (soft news) as the most involved subregister and financial reportage (hard news) as the least involved.

5.4.4 Case studies of nouns and verbs

Further qualitative analysis is necessary to interpret the quantitative findings and first tentative proposals. Moreover, it will allow drawing connections between patterns found in the quantitative analysis and situational characteristics of the news register. Below a subset of the most important findings is examined in more detail in order to set the groundwork for more extensive qualitative analysis in the next chapter. I first look at the unexpected finding that metaphorical nouns are atypical of news compared to other registers (Section 5.4.4.1). Section 5.4.4.2 moves on to discussing the surprising result of metaphorical verbs being typical of news, even though verbs in general are not typical of informational registers.

5.4.4.1 Nouns in news texts

Informational registers such as academic texts and news are characterized by a high number of nouns, which allows for dense information packaging. The analysis in the previous section has shown that while nouns are typical of news as an informational register, metaphorical nouns are not typical. The clear opposition between an overuse of non-metaphorical nouns and an underuse of metaphorical nouns is absent in academic discourse, which also ranks high on the informational end. When the relation between register and metaphor use within nouns is examined, the different behavior of nouns in academic texts versus news texts is confirmed. Nouns in academic texts, relative to the news register, tend to be metaphorical: an overuse of metaphorically used nouns is opposed by an underuse of non-metaphorical ones. In news, by contrast, non-metaphorical nouns do not contribute to the significant chi-square test statistic. They are used as expected based on chance.

As a first explanation, I suggested that the non-metaphorical character of nouns in news may stem from writing about concrete places and people and reporting on societal events and institutions that are designated by abstract but non-metaphorical words. The top ten most frequently used non-metaphorical nouns make reference to time (*year, time, day, week*), people (*Mr., people*), places and institutions (*house, church, government*) and societal issues (*problem*), and are a good reflection of that speculation. What is striking is that five of these top non-metaphorical lemmas are never used metaphorically (*year, Mr., government, week, church*). The other five are used metaphorically only once (*people, time, day, house, problem*). This is because most of the top nouns do not have a more basic

meaning that could serve as a basis for a metaphorical contrast based on indirect language use.

In order to make more tangible the behavior of nouns in news, as opposed to their behavior in the very similar register of academic discourse, I produced a list of ten highly frequent metaphorically used nouns in news texts, as well as a list for academic texts. To form the lists, I selected the ten most frequent metaphorically used lemmas in each register for which no single text contributed a majority of their citations. This was done to ensure that the list is representative of the corpus and not a single text; for example in news, the lexical unit *plant* occurred 24 times, but 17 out of the 24 occurrences could be attributed to one text about factories (“Rechem International’s high-temperature incineration plant” (A1U-fragment04)). The 17 uses in this text were all metaphorical, and thus comprised almost all uses of the overall 20 metaphorical markings for *plant*. Since what is observed about the behavior of *plant* can be attributed to, for a great part, one text, *plant* was excluded from the top 10 list. According to this procedure, the lists are comprised of 10 of the top 12 most frequently used nouns in news (*plant* and *system* were excluded) and 10 of the top 16 nouns in academic texts (*field*, *force*, *stage*, *application*, *subject*, *course* excluded). The lists are as follows (see Table 5.9).

The most popular metaphorical nouns in news can be attributed to the semantic domains of places, location and direction (*way*, *point*, *center*, *side*, *world*, *market*), anatomy and physiology (*member*), objects (*part*, *thing*) and physical force (*power*). The top 10 items in academic texts can be grouped into a domain

Table 5.9

Top 10 metaphorically used nouns in news texts and academic texts

nouns	news texts			academic texts			
	<i>not-M</i>	<i>M</i>	<i>total</i>	<i>nouns</i>	<i>not-M</i>	<i>M</i>	<i>total</i>
way*	3	42	45	way*	0	51	51
member	0	26	26	form	1	41	42
thing	2	25	27	part*	14	33	47
point*	0	23	23	level	3	26	29
power	6	20	26	point*	4	26	30
market	2	17	19	model	3	24	27
part*	10	16	26	section	1	24	25
centre	8	14	22	resource	1	22	23
side	6	13	19	approach	1	20	21
world	14	12	26	attitude	1	20	21

Note. Overlapping items are marked with an *. Lemmas that count 0 in non-metaphorical use are shaded in grey.

of places, location and direction (*way, attitude*), objects (*model, section, part*), moving, coming, going (*approach*), shapes (*form*), dimension (*level*) and materials (*resource*). (These semantic labels are largely based on semantic fields built into the semantic annotation tool Wmatrix, which will be the subject of Chapter 7.)

While the top non-metaphorical nouns in news are almost exclusively non-metaphorical, this opposition is not as strong for the top metaphorically used words. They also tend to occur non-metaphorically in both registers. This is not surprising since metaphorical meaning is based on a contrast between an abstract and a more basic sense. Most of the top non-metaphorical nouns do not have one sense that is more basic (*year, time, day, week, Mr., people, church, government, problem*). While non-metaphorical use of the top metaphorical nouns is common, it is noteworthy that for all but one of the nouns abstract usage is more common. Only the item *world* is used more often non-metaphorically than metaphorically; this can perhaps be attributed to news texts describing what is going on in the world ('the planet that we live in').

Registers may share the same top items, but this does not automatically mean that their use is the same. Consider the shared items in the top ten list of the news and the academic register *way, part* and *point*. Whether the overlapping items work in similar ways needs to be determined in qualitative analysis. For example, in news texts, *way* may be employed in order to present the one and only approach to address a societal problem (e.g. "The only *way* to remove the Government (...)") (A1J-fragment34), ("The only *way* to develop a prototype (...)"), ("death through asphyxiation seem to be the only *way* to get out [of the pub]" (A1K-fragment02). Academic texts, more strongly than news texts, use *way* in order to point out different angles for discussion. ("A second approach is to frame the law in such a *way* (...)"), ("the essence of both approaches is that there is no precise *way* of describing those non-intentional killings" (ACJ-fragment01), ("It seems worth stating at the outset that there are two *ways* geographical research in this general area can proceed" (A1G-fragment02)). This demonstrates that even though the same items occur in both registers, it does not indicate that they are also used the same way.

Metaphorical use outnumbers non-metaphorical use for all items but *world*. I checked for both registers whether the distribution of metaphorical and non-metaphorical use parallels the other register. *Member* and *power* do not occur at all in academic texts. *Model* does not occur at all in news texts. Almost all other words that are more frequently used metaphorically than non-metaphorically in news texts are also used more often metaphorically in academic texts: *way, thing, point, part, side, market*. The only exception is *centre*,

which has more metaphorical than non-metaphorical instantiations in news texts, but more non-metaphorical ones in academic texts than in news texts.

A closer look at the data reveals some inconsistent marking of *centre*. The basic meaning of *centre* is ‘the middle of a space or area’. Inconsistent markings have occurred for descriptions of buildings or groups of buildings where a particular activity is happening (e.g. “Cancer Help *Centre*” (A1X-fragment05), “Disaster Research *Centre*” (A1G-fragment02)), which slightly skews the numbers. Had consistent marking been applied (i.e. marking cases such as the ones above as consistently metaphorically used), *centre* would count even more metaphorical uses in news texts. The inconsistency between coders is likely due to the fact that these examples still refer to a location but are at the same time more abstract than the basic meaning.

There is a clear distinction in the use of *centre* between the two registers. In academic text there is only one highly abstract use: “(...) the Secretary is inviting the Probation Service to move *centre* stage in the Criminal Justice System” (ALP-fragment01). Note that *centre* is always marked as a noun by the BNC and it only has a noun entry (but not an adjective entry) in both Macmillan and Longman. In news, by contrast, abstract uses are more common, e.g. in political discourse to describe the position of parties (“small minority *centre* parties” or “a pull towards the *centre* ground” (A1J-fragment34) or to express importance (e.g. “the western has galloped back to *centre* screen”) or important locations in more abstract terms (e.g. “Modern information technology has given people in remote regions the opportunity to overcome their worst handicap; their distance from the *centres* of learning and development” (A1M-fragment01). Again, as has been shown with *way* further above, quantitative differences between registers need to be subjected to qualitative analysis for a more refined picture.

In order to obtain a more encompassing picture of commonalities and differences in the use of nouns in news versus academic texts, I compared a

Table 5.10

Metaphorical versus non-metaphorical use in top nouns: news texts versus academic texts

	news		academic texts	
	types	%	types	%
M > non-M	23	100.0	58	100.0
M > non-M in news (academic texts) but M < non-M in academic texts (news)	6	26.1	4	6.9
M > non-met in other register as well	12	52.2	12	20.7
no occurrence in top nouns of other register	5	21.7	42	72.4

greater fraction of lemmas from both registers, taking an arbitrary cut-off point of 10 or more tokens in each of the two subcorpora. From these, I considered all lemmas that are used more often metaphorically than non-metaphorically in one register and checked whether these lemmas also occur in the other register. Table 5.10 provides an overview.

In news, there are 23 types that have 10 or more tokens for which metaphorical use is higher than their non-metaphorical use. Academic texts count 58 such types. There are 12 overlapping lemmas between the academic and the news register: *way, thing, part, point, side, end, form, rule, hand, level, ground, subject*. The following words that are more frequently metaphorically than non-metaphorically used in news texts are used less frequently metaphorically than non-metaphorically in academic texts (second line in the table): *plant, centre, body, group, team, community*. For academic texts, nouns that are more frequent as metaphors than non-metaphors but more frequent as non-metaphors than metaphors in news texts (second line in the table) are: *system, interest, view, and training*. For the sake of completeness the table also states the number of types that have a higher number of metaphorical tokens than non-metaphorical ones in both registers (line 3). It also gives the number of types in one register that do not occur in the top nouns of the other register (line 4). As statistics for certain tokens (e.g. *plant* and *system*) are dominated by single text fragments, I urge caution in extrapolating trends from these data. Nevertheless, they are instructive and may suggest further qualitative analysis.

While writers of academic texts have a higher tendency to opt for metaphorical nouns than news texts, metaphorical nouns look more varied in news than in academic texts. Lexical variability can be measured by calculating type-token ratios. A high type-token ratio indicates large variability; a low type-token ratio signals low variability. While news has overall a slightly higher type token-ratio than academic texts, the difference is greater when metaphorically used nouns are looked at alone (see Table 5.11).

Both registers analyze issues for an audience. That audience, however, differs. While journalists write for the general public, authors of academic publications write for experts. This may explain the observed differences in the

Table 5.11
Type-token ratios for nouns in news texts versus academic texts

	news texts	academic texts
all nouns	0.33	0.23
metaphor-related nouns	0.47	0.29
non-metaphor-related nouns	0.35	0.25

top ten list of metaphorically used nouns as well as the diverging distribution of metaphorical versus non-metaphorical words in news versus academic texts. More abstract content in academic texts may call for more metaphorical nouns for concepts that are not tangible.

The diverging use of nouns is, however, also clearly influenced by register-specific topics and does not necessarily reflect functional differences only. Differences in the type-token ratio – particularly for metaphorical nouns – may, however, be an indication that news writing makes use of a variety of metaphorical lexical items to transfer a message to the audience, while academic writing tends to reuse metaphorical nouns that are perceived as conventional to the expert audience. Academic authors and news writers make different choices regarding the repeated use of a term for some phenomenon. Academic writers value consistency while journalists make the opposite tradeoff: they avoid repeated use of any one term in the name of stylistic variation.

To summarize, journalists typically make use of non-metaphorical nouns designating concrete people and places. Abstract nouns referring to institutions (e.g. *government*) or points in time (e.g. *day*, *week*) do not have a more basic sense that could be used for a mapping and are thus never metaphorically used. The top metaphorical nouns come from a restricted number of semantic fields, namely “places, location and direction”, “anatomy and physiology”, “objects” and “physical force”. The high type-token ratio of metaphorical nouns in news suggests that they are more varied compared to their use in academic texts.

5.4.4.2 Verbs in news texts

As the analysis in 5.4.1 has shown, the use of metaphorical verbs in news, as a written, highly informational register, differs from the use of metaphorical verbs in the less informational register fiction and the spoken register of conversation, which is even less so. For instance, while a high number of verbs is characteristic of spontaneous conversation, *metaphorical* verbs are atypical. Verbs in news, which are generally not typical of informational production, are more frequently metaphorical relative to fiction or conversation.

I examined possible influential factors for this unexpected result. One potential explanation may be the use of personification in news compared to conversation (Wodak, de Cilla, & Liebhart, 1999, p. 44). Personification can be used to cover up responsibilities of individuals and hides their actions behind an institution (e.g. “Labour *hopes* to transform the situation by increasing the number of A-levels to five (...)” (A1F-fragment07). *Hoping* is a human action

(and counts as the basic meaning) but is, in the present context, applied to a non-human referent. The contextual meaning is not in the dictionary. This is an instance of what was marked as ‘possible personification’ by the MIPVU procedure. The use of personification may be more typical of news writing than of spoken language and may contribute to the unexpectedly high usage of metaphorical verbs.

Figures are tentative but show that, out of all word classes, personification resides most frequently in the verb. While 20.3% of all lemmas are verbs, 68% of the personifications from the overall database are found within verbs. This is followed by adjectives (18.9%) and nouns (10.8%). The other word categories comprise between 0% and 1.2% of all personifications. 2% of the overall data are metaphor-related due to personification alone. Had this code not been used, these items would have counted as literally used units.

Note though that this annotation method does not catch all personification there may be. Consider the verb *danced* as in “the waves *danced*”. The – human-related – basic meaning of dance is ‘to move your feet and your body in a pattern of movements that follows the sound of music’. In the present context a non-human entity is dancing. In this case, however, the contextual meaning of *dance* is in the dictionary (‘if something dances, it makes a series of quick light movements’). Since the contextual meaning and the basic meaning can be understood in comparison to each other, cases like these are conventionalized personification and are thus marked as indirect metaphor and not as ‘possible personification’. The actual frequency of personification may thus be higher. Our annotation procedure for ‘possible personification’ may have contributed to the abundant use of metaphorical verbs in news texts, however, for otherwise these verbs would not have been marked as related to metaphor.

I tested whether the unexpected overuse of metaphorical verbs (which includes the verbs marked for personification) can be attributed to personification. Annotation for personification was not part of reliability testing. Therefore, 100 tokens marked for personification were checked for errors. 50 were from analyses early in the annotation process and 50 were taken from later stages. Out of 100 cases only 4 were wrongly marked as ‘possible personification’. I also checked 100 cases that were not marked as personification but were candidates for personification because they were connected to non-human agents or actions. 16 errors were detected. Those cases were not marked personification but should have been. Overall, this yields a total of 20 errors out of 200 checked cases, which is an acceptable percentage to continue the analysis for the present exploratory purposes.

One may also ask what happens to the relation of register and metaphor when lexical units that were marked as metaphorical only due to possible personification are treated as a separate category. To test this, I conducted a chi-square test crossing the variables “register” (academic texts, news, conversation, fiction) and “metaphor” (non-metaphorical, metaphorical, personification) within verbs. Chi-square results were significant ($\chi^2(6) = 1,737.52$ $p < .01$, Cramer’s $V = 0.15$, $p < .001$). In news, 27.6% of the verbs are metaphorical, 4.3% of which are metaphorical due to possible personification. This is significantly different from their behavior in conversation, where 9.2% of the verbs are metaphorical, of which only 0.6% have been marked for possible personification (PP). (This is not the only cell that contributes to the significant chi-square, as can be seen in Table 5.12, but since this section compares news with conversation, the percentage of ‘possible personifications’ in news and conversation is the focus of interest.)

15.61% of all metaphorical verbs (M+PP) in news are ‘possible personification’ (PP), which is the highest proportion of the four registers. Conversation ranks last, with only 6.22% of all metaphorical verbs marked as ‘possible personification.’

To shed more light on the unexpected behavior of verbs in news and the role of personification in this phenomenon, I first compared the top ten highly frequent metaphorically used verbs in news texts and conversations and subsequently extracted the lemmas that are typically metaphorical in news but

Table 5.12

Verbs in relation to metaphor, divided by register (significant deviations in bold)

		non-M	M	PP	total
academic	count	5892	2046	209	8147
	% within register	72.3% (-)	25.1% (+)	2.6% (+)	100.0%
news	count	5697	1833	339	7869
	% within register	72.4% (-)	23.3% (+)	4.3% (+)	100.0%
fiction	count	8233	1425	130	9788
	% within register	84.1% (+)	14.6% (-)	1.3% (-)	100.0%
conversation	count	11048	1041	69	12158
	% within register	90.9% (+)	8.6% (-)	.6% (-)	100.0%
total	count	30870	6345	747	37962
	% within register	81.3%	16.7%	2.0%	100.0%

Note. + and – indicate over- and underuse of a category.

not in conversation from a larger sample. The selection procedure for the top 10 list is the same as for nouns. I chose the ten most frequent metaphorically used lemmas in each register for which no single text contributed a majority of their citations. The final lists (Table 5.13) are comprised of the top 10 most frequently used verbs in news and 10 of the top 11 verbs in conversation (*feel* excluded).

In news texts only one item (*feel*) was never marked as personification. In conversation, by contrast, four lemmas were never given that code (*see, take, come on, go on*). *Find*, the lemma with the highest percentage of personification in news, was never marked as possible personification in conversation.

Table 5.13

Top ten metaphorically used verbs in news texts (top panel) and conversation (bottom panel)

news texts				
verbs	not M	met (PP)	total	% PP of M
have*	418	125 (9)	543	7.2
make*	10	69 (1)	79	1.5
give*	9	66 (3)	75	4.6
come	7	50 (4)	57	8.0
take*	6	46 (1)	52	2.2
find	10	32 (7)	42	21.9
get*	19	32 (3)	51	9.4
go*	33	30 (6)	63	20.0
<i>feel</i>	1	24 (0)	25	0.0
put	4	22 (1)	26	4.6
conversation				
verbs	not M	M (PP)	total	% PP of M
have*	795	150 (2)	945	1.3
get*	387	142 (10)	529	7.0
go*	389	63 (6)	452	9.5
see	130	58 (0)	188	0.0
take*	40	38 (0)	78	0.0
make*	22	37 (3)	59	8.1
<i>come on</i>	2	31 (0)	33	0.0
give*	31	31 (1)	62	3.2
do	1164	24 (7)	1188	29.2
<i>go on</i>	0	22 (0)	22	0.0

Note. Overlapping items are provided with an *. Lemmas that are never labeled 'possible personification' are shaded in grey. Lemmas that have more non-metaphorical uses than metaphorical uses are printed in boldface.

Half of the metaphorical uses of *say*, which is among the 10 most popular non-metaphorical verbs in news, can be attributed to personification. In conversation, by contrast, only one fifth of metaphorical uses of *say* can be attributed to that phenomenon. In face-to-face conversation, individual people talk about what they or other people say. News reporters also write about what people *say*, or *find*, however, the individuals are frequently hidden behind abstract institutions (parties, companies, agencies etc.). For example, in “The Roman Catholic Church *says* this is a deterrent to unity (...)”, the person(s) who actually made that statement is/are not named. *Saying* something is a human action of expressing something in words. This is also the lexeme’s basic meaning. In the present context, *saying* can be interpreted both metaphorically and metonymically. If the individuals that make up the Roman Catholic Church are in focus, the Church is interpreted metonymically and *say* is not used figuratively. Alternatively, the Roman Catholic Church can be interpreted as an abstract group acting as one person. Taking the perspective of the verb, *say* is metaphorically used, because its basic human-related sense does not apply. It is thus as case of ‘possible personification.’

The table reveals further interesting details about verb use in news versus conversation. It shows that metaphorical verbs in both registers are also used non-metaphorically but in conversation more so than in news texts. In conversation, six items are used more often non-metaphorically than metaphorically (*have, get, go, see, take, do*) whereas in news only two items are more common as non-metaphor (*have, go*). More than half of the lemmas overlap between the two registers (*have, make, give, take, get, go*). In addition to being frequently metaphorically used, *get* is also among the top ten non-metaphorically used words in conversation but not in the top ten non-metaphorical lemmas of news. Items that are not shared within the top 10 are *come, find, put, feel* (news only) and *see, come on, do, go on* (conversation only). (Note though that *feel* was excluded from the top list of conversation and would otherwise be also an overlapping item). *Come on* and *go on*, being more typical of spoken language, never occur in the news sample (e.g. “(...) Really? Ah, into oh *come on, (...)*” (KBW-fragment17)). These non-overlapping items may be particularly interesting for further qualitative analysis.

The top verbs in both registers are mostly delexicalized, which means that their metaphorical meanings are difficult to establish because they carry little meaning (Cameron, 1999a, pp. 121ff). The metaphorical verbs in both registers can be largely attributed to the semantic domains of movement (e.g. *come, go, take* etc.) and perception (*feel, see, find*). In lexical and semantic terms

they are thus quite similar. Qualitative analysis would be needed to reveal whether there are any functional differences.

Let us now broaden our focus by looking at all lemmas with 10 or more citations. From these I considered all lemmas that are used more often metaphorically than non-metaphorically within news and within conversation and checked whether the lemmas that are used more often metaphorically than non-metaphorically also occurred in the other register. Table 5.14 provides an overview.

In news, 38 types of all verbs with 10 or more tokens count more metaphorically used tokens than non-metaphorical ones. In conversation, there are only 9 such types. The overlapping types between those verbs in news and conversation are *make* and *feel*. The following words that are more frequently used metaphorically than non-metaphorically in news texts are used less frequently metaphorically than non-metaphorically in conversation (second line in the table): *come, take, see, put, run, keep, mean, show, bring, leave, stand, help, hold, get, and find*. All of them but *keep* and *hold* have also been marked for possible personification. Interestingly, the basic sense of most of these lexemes describes human activities. Human senses frequently provide the basis for metaphorical mappings, and – as has been shown above – are candidates for being metaphorical due to possible personification, which seems to be a feature of news texts but only to a lesser extent for conversations. For conversations there are no verbs which are more frequent as metaphors than non-metaphors that are more frequent as non-metaphors than metaphors in news texts (second line in the table). 12 verbs of the 38 ones in news that are used more often metaphorically than non-metaphorically are never labeled as possible personification: *feel, keep, face, fall, set, bear, lose, open, reduce, consider, cover, and hold*. Overall, 68.4% (26 types) of all verbs in news that are used more

Table 5.14

Top verbs used more often metaphorically (M) than non-metaphorically (non-M) in one register in comparison to the other register

	news		conversation	
	types	%	types	%
M > non-M	38	100.0	9	100.0
M > non-M in news (conversation) but M < non-M in conversation (news)	15	39.5	0	0.0
M > non-M in other register as well	2	5.3	2	22.2
no occurrence in top verbs of other register	21	55.3	7	77.8
metaphorical due to possible personification	26	68.4	1	11.1

often metaphorically than non-metaphorically, have been given the ‘possible personification’ code at least once. In conversation only one of the verbs with a higher metaphorical than non-metaphorical count was also marked ‘possible personification’. This illustrates that personification as well as metaphorical use of verbs is more typical in news texts than in conversations. For the sake of completeness the Table 5.14 also includes the number of types that have a higher number of metaphorical tokens than non-metaphorical ones in both registers (line 3). It also states the number of types in one register that do not occur in the top verbs of the other register (line 4).

A closer look at *come*, which is typically metaphorical in news but typically literally used in conversations, reveals the following picture: the bulk of literal uses of *come* in news (and there are only 7 out of 50), occur in the leisure section and describe people going to places. For example through describing hiking directions (e.g. “Wriggling across country on the D216 to Port-d’Envaux, you *come* to two more chateaux (...)”, (AHC-fragment61), reporting about people attending events at theatres or centres “(...) the locals *come* for entertainment (...)” (A3K-fragment11), “(...) Do your husbands *come* here [to the council estate]?” (AHF-fragment24). So there seems to be a difference between different subregisters of news. It would be not justified to extrapolate from this one example to the behavior of all verbs, but it may be a hint to the contrasting behavior of verbs in soft and hard news, which merits further exploration. Literal use of *come* in conversation is dominated by people seeing each other or making other people go somewhere (e.g. “(...) But at least when this bloke *comes* tonight you’ve got something for him (...)” (KCF-fragment14), “(...) *come* home from work she said (...)” (KCU-fragment02), “(...) Who *come* to see you? (...)” (KCU-fragment02), “(...) Oh I didn’t show you it. Just *come* this way (...)” (KCU-fragment02).

While these literal uses are common in conversations, metaphorical uses are not. The bulk of the 17 metaphorical uses can be attributed to ‘possible personification’ (e.g. “(...) the rain *came* tumbling down splish, splash (...)” (KBW-fragment42). Unlike in news, *come* is typically not connected to other lexemes whose basic meanings indicate movement or describe paths. The only example is “(...) I have *come* a long way and they said he told them (...)”, for which it is actually not quite clear from context whether *way* is used literally or metaphorically. *Come* in news, by contrast, does occur in close vicinity of terms whose basic meaning is related to movement and direction (e.g. “(...) We’ve *come* to the *end* of our *road*. (...)” (A5E-fragment06), “(...) Anyone can set up a letting agency (...). They *come* and *go*.” (AHB-fragment41), “Plants should *come* a long *way down* the list of priorities for the novice gardener” (A3E-

fragment03). What is also striking is that the majority of uses are connected to a non-human agent. The effect is that human responsibility for decisions and actions are concealed and are given the impression of a fact (e.g. “(...) Tax rebellions *come* in crests” (A9J-fragment01). Even if an individual is mentioned, *come* may be used for describing that an action simply happened to a person and therefore responsibility cannot be claimed. Consider this example from political news: “his speech, however, *came* after a 24-4 vote in the national executive to oppose a proportional representation (...)” (A1J-fragment34).

Finally, I checked how many different metaphorical verbs are involved in each of the registers. I first determined the type-token ratio for all of the verbs (see Table 5.15). The ratio is as expected based on research by Biber (1988). News, as a high-information register, has a higher type-token ratio (0.16) than conversation (0.05). This means that news makes use of a greater variety of verbs than conversation. Strikingly, even more distinct lemmas are involved when verbs are metaphorical, as is indicated by a higher type-token ratio of 0.32. In news there is also a greater variety of verbs involved in possible personification than in conversation, for which only a restricted number of verbs is involved.

To summarize, the top metaphorical verbs in both registers are mostly delexicalized and are mainly attributable to the semantic domains of movement and perception. Surprisingly, metaphorical verbs are more typical of news texts relative to conversation. This is interesting because informational production, such as news, is not characterized by a high use of verbs in general, while involved production, such as conversation, is. The analysis has suggested ‘possible personification’ as an influential factor for the unexpectedly high number of metaphorical verbs in news. Indeed, verbs in news are significantly more often marked with that code than in conversation. In news, actions of individuals are often hidden behind abstract entities or have a simplifying function when the identity of individual people acting is not directly relevant for comprehension. Its use allows for dense information packaging, which is

Table 5.15

Type-token ratios for verbs in news texts versus conversation

	news texts	conversation
all units	0.16	0.05
metaphor-related units	0.32	0.19
non-metaphor-related units	0.16	0.05
possible personification	0.60	0.38

necessary due to space constraints for articles. Spontaneous conversation, in contrast, revolves around real people, which is why human-related verbs are mostly literally used. Moreover, both metaphorical verbs as well as verbs marked as ‘possible personification’ are more varied in news than in conversation, as the relatively high type-token ratio suggests.

5.5 Conclusion

News texts have been used as a welcome source for examining metaphorical language (e.g. Charteris-Black, 2004; Chilton, 2004; Kitis & Milapides, 1997; Musolff, 2000, 2006; O'Halloran, 2007; van Dijk, 1987, pp. 372-373). Even though news articles primarily inform, they may also entertain, explain, persuade and convey opinions. Metaphors in news texts have primarily been examined for their persuasive potential and to unmask underlying ideologies. As van Dijk (1988, p. 177) notes, “lexical choice is an eminent aspect of news discourse in which hidden opinions or ideologies may surface.” This lexical choice may also encompass the selection of metaphorical expressions.

The popularity of newspaper texts for metaphor research seems to suggest that news is indeed a very metaphorical register. However, no prior research has attempted to give a precise description of how common metaphorical language use is in the news register in general. What research there is has focused on a restricted sample of source domains, lexical units, subregisters or topics or was based on an explicit, systematic method of metaphor identification.

In order to show what is typical of metaphorical language use in news writing, I have quantitatively compared metaphor in news to metaphor use in three other registers – academic texts, fiction and spontaneous conversation. They all have been coded for metaphor using the MIPVU metaphor identification procedure.

The four registers have been studied extensively previously from a grammatical point of view by Biber (1988). His work has revealed a statistically significant relation between register and linguistic features such as word class, contractions, use of passive voice etc. In face-to-face conversations, for example, private verbs, present tense verbs, contractions, first, second and demonstrative pronouns, questions etc. co-occur at a high degree of frequency, whereas features such as nouns, prepositions and attributive adjectives are relatively lacking. The presence of the former features correlates with a high degree of involvement, which is typical of conversation. Their absence is

typical of written registers, in particular of news and academic texts. These registers are characterized by a low degree of involvement but a high degree of “informational production”. These findings can be connected to situational characteristics of different registers (e.g. production circumstances, audience etc.), which are reflected in the diverging prominence of word classes across registers.

Biber (1988) and Biber et al.’s (1999) research has not included metaphorical language use as a linguistic feature. I have connected the variable metaphor to what is known about the relation between register and word class as a first step towards a differentiated analysis of the function of metaphorical language use in news articles. I have performed four different kinds of analysis:

First, I investigated whether there is a three-way interaction between the variables metaphor, register and word class (Section 5.4.1). Indeed, the addition of metaphor has revealed a significant interaction between the three variables. I therefore refined the analysis by examining what different types of metaphor (indirect, direct and implicit) contribute to this complex picture (Section 5.4.2). The news corpus consists of several subregisters. Since not only registers may vary in their communicative goals, topics, text structure etc. but also differences between subregisters are likely, Section 5.4.3 has tested whether there is a three-way interaction between metaphor, subregister and word class. The final Section (5.4.4) has taken a more interpretative angle. I presented two case studies of word classes that exhibited an unexpected distribution of metaphor. The first looked at nouns in news texts versus academic texts. The second one was devoted to verbs in news versus in conversation.

The addition of metaphor to the interaction between register and word class has revealed a complex picture. There is a three-way interaction between the variables metaphor register, and word class. This means that the metaphor category has to be interpreted with reference to the different behavior of word classes across registers. For example, news, as an informational register, has a higher proportion of nouns, determiners, prepositions and adjectives, compared to more involved registers such as conversation, and a low proportion of verbs, adverbs and the remainder category. More frequent and thus more prominent use of a word class naturally raises the number of metaphorically used words in the category. Because of the three-way interaction, their absolute numbers need to be interpreted in relation to the importance of the word classes in a register.

I have shown that if a word class is more prominent in news than in other registers, this does not necessarily mean that metaphorical uses of that

word class are also more typical of news than of other registers. In fact, results indicate that it is metaphorical verbs, adjectives, adverbs and the remainder category that are more typical of news relative to the metaphorical use of these word classes in other registers. Note that metaphorical adverbs and the remainder category are underused relative to other word classes within the news register. In relation to the other registers, though, metaphorical use of adverbs and the remainder category in news stands out. Nouns are a characteristic feature of informational texts such as news and academic texts. Academic texts, however, show an unexpectedly high proportion of metaphorical nouns, relative to news texts. Within news, metaphorical nouns are used less often than expected, relative to other word classes. While prepositions are also a common feature, an overuse of metaphorical ones can be observed relative to other word classes but not relative to the other registers. Determiners are typical for news as well, but metaphorical determiners are atypical relative to the other registers and the other word classes. Conjunctions and the remainder category count fewer metaphorical units than expected, relative to other word classes. Relative to the other registers, conjunctions occur as expected and units in the remainder category are observed more frequently than expected.

The significant interaction between metaphor, register and word class is mainly due to indirect metaphor. These are lexical units for which a basic and a contextual sense can be identified, compared, contrasted and understood in comparison to each other. Overall, they make up 97.5% of all metaphorically used words. Compared to other registers, news is fairly metaphorical. With indirectly used metaphors comprising 16% of the register, news precedes fiction (11.4%) and conversation (7.6%) and only ranks lower than academic texts (18.2%). This correlates with Biber's (1988) dimensions of informational versus involved production – the more informational the discourse, the more metaphorical. News, as a highly informational register, ranks high in metaphorical language use. This makes it most different from conversation, which is a highly involved register and features comparatively few metaphorical expressions. This finding is compatible with the general cognitive-linguistic view of metaphor as a conceptual device which helps to present information on a relatively abstract topic in terms of another, more concrete domain. News texts play an important role in helping people to make sense of the world around them. Metaphorical language is a device that can assist them in doing so.

Direct and implicit metaphors are not distributed equally across registers, which suggests that they may play different roles in different registers. Unlike

what may be inferred from psycholinguistic research, direct metaphor is not common overall. Together with implicit metaphors, they make up only about 2% of all metaphorically used words. Implicit metaphors in news do not make a significant contribution to the interaction effect.

According to Biber (1988), not only registers but also subregisters vary with respect to multiple dimensions. I therefore tested whether there is a three-way interaction between subregister, metaphor and word class. The interaction was significant. The significant relation between subregister and metaphor can be mainly attributed to an unexpected prominent use of metaphorically used words in hard news and an underuse of metaphorical units in soft news. Hard news is characterized by an unexpectedly frequent use of metaphorical prepositions, nouns and verbs, relative to other subregisters.

The variability between metaphor use in news across word classes and relative to the use of metaphor in other (sub)registers indicates that, for example, metaphorical verbs may have different functions in news that go beyond a mere conceptual function. Not only does news have different production circumstances, a different audience and a preference for different topics, it also has different communicative purposes than the other registers. The characteristic use of certain word classes as more metaphorical, relative to other registers, may reflect special rhetorical functions that are typical of news but not of other registers. For example, metaphor may be used for different rhetorical strategies such as influencing the readers' opinion or view on particular societal problems. They may be used to create humorous effects and add color in articles in the arts and leisure section of newspapers. Since news writing is a process of writing and rewriting, certain word classes may be also exploited for establishing coherence through metaphorical usage.

When a distinction between metaphorical and non-metaphorical use of word classes is made, it is possible to extract a picture of the functions of metaphorical uses of these word classes, which does not necessarily parallel the functional variation of word classes as established by Biber (1988). The significant three-way interaction between subregister, word class and metaphor supports these speculations. It means that the metaphor category needs to be interpreted in the light of the different behavior of word classes across (sub)registers. Whenever communicative functions differ, metaphorical language use will differ as well, but not necessarily in ways suggested by the usage of the general word classes.

Two exploratory case studies have taken a closer look at nouns, which are in general a prominent feature of news texts, and verbs, which are not a highly frequent word class in news. When verbs are used metaphorically, however,

they were observed more often than expected. Metaphorically used nouns did not feature prominently.

The analysis of nouns suggested that, in contrast to authors of academic texts, journalists typically rely on non-metaphorical nouns to describe where and when something happened, and the people involved in newsworthy events. The most frequent metaphorically used nouns can be attributed to only a small number of semantic fields, mainly to the field of places, location and direction.

I have identified the code ‘possible personification’ as one influential factor for the unexpectedly high frequency of metaphorically used verbs in news. Personification has the power to hide individuals and their actions behind abstract entities. Furthermore, it has simplifying functions and allows for dense information packaging. Spontaneous conversation, by contrast, revolves about real people and their actions. As a consequence, verbs are usually used in their basic human-related sense. The observation that a number of movement related verbs in news writing, but not in conversation, tend to occur in close vicinity to other movement terms is interesting and cause for further investigation.

Conclusions drawn from the analyses in this chapter, must, however, remain tentative. Both the log-linear and the chi-square analysis assume that observations are independent. Since each lexical unit is surrounded by other – different – lexical units, and each text consists of a different number of sentences, paragraphs and words, observations on the word level are not independent. It would require a more complex multi-level analysis that takes these variations into account. While the present findings may need further confirmation, they are interesting, intuitively plausible and promising for further theoretical and empirical work.

As with any database, size is a limiting factor. While trends can be reported, I urge caution in interpreting results for individual lemmas. For example, *plant* is among the top ten metaphorically used nouns in news. However, almost all uses can be attributed to one single text. It would thus be misleading to interpret *plant* as a typical metaphorical noun for the news register. For any quantitative analysis can show rough patterns, but analysis of individual words needs to check their representativeness of the overall register. To remedy this situation, my case studies of nouns and verbs only considered those items for which no single text contributed the majority of tokens.

The distinguishing feature of this work is that it builds on systematically collected data using an explicit procedure. Such a solid basis has so far been lacking. I presented the first estimates of metaphor use in news texts based on

reliable data. The findings refine what is known about the association between word classes and register from Biber's (1988) research in that the distinction between metaphorical versus non-metaphorical meaning is added to the picture. I have shown what is typical of metaphorical language use in news in quantitative terms. While news is characterized by a high proportion of nouns, prepositions and adjectives, as is typical for informational registers, nouns in news are not typically metaphorical. Instead, prepositions, adjectives and verbs are commonly metaphorical, relative to other word classes. Relative to other registers, verbs, adjectives and adverbs are more often used metaphorically in news than would be expected. The functional relationship between characteristic metaphor use in news and situational characteristics of the register, which are distinct from those of other registers, needs to be examined by delving into the data using a more qualitative approach.

5.6 Appendix

Loglinear analysis

Associations of more than two categorical variables are checked by a loglinear analysis (e.g. Section 5.4.1). The loglinear analysis in Section 5.4.1 tests whether there is a relationship between the variables “metaphor” (metaphor, non-metaphor), “register” (academic texts, news texts, fiction, conversation) and “word class” (adjectives, adverbs, determiners, nouns, prepositions, verbs, conjunctions, remainder).

The loglinear analysis showed a significant three-way interaction between metaphor, register and word class $\chi^2(21) = 1511.41, p < .001$. This means that the main effects of register and word class cannot be interpreted on their own because of the significant higher-order interaction between metaphor, register and word class $\chi^2(21) = 1511.41, p < .001$. For example, if some word classes were not included in the analysis, comparing register and metaphor would yield a different picture. Similarly, if one or two registers were not included in the analysis, the relationship between metaphor and word class would be affected. The interaction effects are further examined by breaking down the three-way interaction by chi-square tests (e.g. testing the association between register and word class as illustrated below).

Chi-square analysis

Here I provide a brief description of the first chi-square analysis performed in Section 5.4.1. I use the data of Table 5.1 as a guide. A chi-square analysis tested whether there is an association between the categorical variables “register” (academic texts, news texts, fiction, conversation) and “word class” (nouns, verbs, adjectives, adverbs, prepositions, determiners, conjunctions, remainder). Such as test compares the frequencies in each category observed in the data to the frequencies for those categories that are expected by chance. Crossing the two variables produces a two-way frequency table (Table 5.16).

Table 5.16

All lexical units in relation to registers, divided by word class (significant deviations in bold)

word class		registers				
		academic	news	fiction	conver.	total
nouns	count	13342	12930	9648	5582	41502
	expected count	10962.8	9957.6	9925.6	10656.1	41502.0
	% within word class	32.1%	31.2%	23.2%	13.4%	100.0%
	std. residual	22.7	29.8	-2.8	-49.2	
verbs	count	8147	7869	9788	12158	37962
	expected count	10027.7	9108.2	9078.9	9747.1	37962.0
	% within word class	21.5%	20.7%	25.8%	32.0%	100.0%
	std. residual	-18.8	-13.0	7.4	24.4	
adjectives	count	4659	3760	2969	1750	13138
	expected count	3470.4	3152.2	3142.1	3373.3	13138.0
	% within word class	35.5%	28.6%	22.6%	13.3%	100.0%
	std. residual	20.2	10.8	-3.1	-27.9	
adverbs	count	2503	2183	2839	4290	11815
	expected count	3121.0	2834.8	2825.7	3033.6	11815.0
	% within word class	21.2%	18.5%	24.0%	36.3%	100.0%
	std. residual	-11.1	-12.2	.3	22.8	
prepositions	count	6463	5135	4228	2479	18305
	expected count	4835.3	4391.9	4377.8	4700.0	18305.0
	% within word class	35.3%	28.1%	23.1%	13.5%	100.0%
	std. residual	23.4	11.2	-2.3	-32.4	

determiners	count	6743	5700	4961	4195	21599
	expected count	5705.4	5182.2	5165.6	5545.8	21599.0
	% within word class	31.2%	26.4%	23.0%	19.4%	100.0%
	std. residual	13.7	7.2	-2.8	-18.1	
conjunctions	count	3028	2437	2498	2401	10364
	expected count	2737.7	2486.6	2478.6	2661.1	10364.0
	% within word class	29.2%	23.5%	24.1%	23.2%	100.0%
	std. residual	5.5	-1.0	.4	-5.0	
remainder	count	4429	4778	7717	15079	32003
	expected count	8453.7	7678.5	7653.8	8217.1	32003.0
	% within word class	13.8%	14.9%	24.1%	47.1%	100.0%
	std. residual	-43.8	-33.1	.7	75.7	
total	count	49314	44792	44648	47934	186688
	expected count	49314.0	44792.0	44648.0	47934.0	186688.0
	% within word class	26.4%	24.0%	23.9%	25.7%	100.0%

Here is a guide to reading such a table. The variable “word class” is presented in the rows, whereas the variable “metaphor category” is listed in the columns. Each row shows the following information:

1. The first line in each row presents the count of a particular category that was actually observed in the data. For example, news texts count 12,930 nouns
2. This is 31.2% of all nouns (third line in the column news).
3. The second line shows the frequencies of a particular category that is expected on the basis of chance, if there is no relation between register and metaphor, given the total number of observed cases for a specific group of lexical units crossed with a particular register. In news, 9,957.6 nouns would be expected based on chance, under the assumption that the distribution of word classes is equal across registers. This is more than was actually observed in the data.
4. This discrepancy between observed and expected frequencies is reflected in the so-called ‘standardized residual’, which can be found in the last line of each row. This is a standardized unit that measures the degree of deviation of the observed frequencies from the expected frequencies. The greater the magnitude of the standardized residual of any given cell in the table, the larger is the contribution of that particular cell to the total value

of the chi-square statistic. In essence, this means that the cells with significant standardized residuals contribute most to the significant interaction between register and word class, as is evident from the chi-square test. For nouns in news, 12,930 units are observed in the data, which is more than expected based on chance (9,957.6), resulting in a positive standardized residual. The cutoff point for significance at the 95% level is +/- 1.96. The cutoff point at the 99% level is 2.58. Since we are dealing with large groups of data, which makes it more likely to find statistically significant results when there are in fact none, we work with a 99% significance level. Residuals meeting this criterion are marked in boldface.

CHAPTER 6

Form and function of metaphor: A qualitative analysis

6.1 Introduction

The metaphor analysis in the previous chapter has illustrated the complexity of metaphor variation. We detected variation between news and other registers as well as variation between subregisters within news. There is also considerable variation between individual texts. A rank order of all the news fragments shows that the percentage of metaphors per text ranges from as little as 6.7% to as much as 25.9%; the overall percentage for metaphor in news is 16.4%.

While a quantitative analysis of the previous chapter can show general trends for (non)metaphorical language use that are typical of the news register compared to fiction, conversation and academic texts, a more qualitative analysis of metaphorical language use is required to gain a better understanding of its functions in a larger discourse context. A quantitative analysis describes the text, but not the discourse (Widdowson, 2000, as cited in Koller 2002, p. 192). Variation in metaphorical use across different texts may be explained by different communicative goals of individual news articles. For example, an op-ed piece has different communicative goals than a factual report on a train accident – while the former transports an opinion and wants to persuade, the major concern of the latter is simply to inform.

In this chapter I will explore metaphor use in texts with differing percentages of metaphorical units, different sections of newspapers and various communicative purposes in order to find connections between textual characteristics, communicative goals and functions of metaphor. In particular, I will investigate why some news texts may seem more metaphorical to the reader than others – despite a similar number of metaphorically used words. Such different experiences depend on whether or not the reader recognizes a metaphor as being used deliberately as a rhetorical device (Steen, 2008). I will also present a new procedure to detect such deliberate metaphor. Moreover, I will make explicit how deliberate metaphor fits into a model of metaphor in language, thought and communication (Steen, 2008) that distinguishes between symbolic and behavioral analysis.

A review of the literature on metaphor in news creates the impression that news articles are full of extended mappings, creative word play and novel metaphorical expressions (e.g. Charteris-Black & Musolff, 2003; Kitis & Milapides, 1997; Musolff, 2000, 2006; Santa Ana, 1999; Semino, 2002, 2008). One major claim of conceptual metaphor theory is that metaphorical expressions can be grouped according to conceptual metaphors in a systematic way. The claim is supported by the numerous examples of conceptual metaphors and their surface linguistic expressions in individual texts or collections of reports that are cited in research on metaphor use in news articles. The role of such systematic sets in our understanding of language has been examined experimentally, by e.g. Gibbs (1994), Allbritton et al. (1995) and Keysar et al. (2000). For example, they tested whether metaphorical expressions from the same source domain embedded in a short context aid understanding of a subsequent expression consistent with that source domain. If understanding is facilitated, this suggests that people rely on the underlying conceptual metaphor during discourse comprehension. As will be detailed in Chapter 9, results have been inconclusive. While some studies found support for the hypothesis that even conventional metaphorical expressions require activation of the underlying conceptual metaphor, others claim that the relevant meaning of metaphorical expressions can be accessed directly without resorting to comparing two different domains.

Shen and Balaban (1999) have sought connections between the claim that people make use of conceptual metaphor in discourse comprehension, claims about the systematic nature of metaphors (Lakoff & Johnson, 1980) and the distribution of metaphorical expressions in discourse. According to Lakoff and Johnson (1980), conventional metaphorical expressions can be clustered together according to a shared conceptual metaphor (e.g. “spend one’s time”, “invest one’s time”, “cost time” can be clustered together under the conceptual metaphor TIME IS MONEY.) Paralleling metaphor processing research, Shen and Balaban (1999) hypothesize that a metaphorical expression from a certain source domain should support the subsequent use of expressions from the same source domain in the immediate context, rather than expressions that are inconsistent with that source domain. They selected a sample of what they called “planned discourse”, that is texts that deliberately employ metaphor, and an “unplanned” sample where metaphor was not deliberately used. The criteria for planned discourse were 1) the underlying metaphor had to be explicitly stated and 2) the texts needed to have at least three novel instantiations of the metaphor.

They found that metaphorical coherence is significantly less prevalent in unplanned discourse than in planned discourse. Unplanned discourse was characterized by a use of many metaphorical expressions connected to a range of source domains. Elaboration of a conceptual metaphor was not common. Their research suggests that “special planning seems to be required to make discourse metaphorically coherent” (Shen & Balaban, 1999, p. 151). This seems to suggest that deliberate use of coherent novel or conventional metaphorical expressions is uncommon unless the discourse is “planned”.

The production circumstances of news articles allow for careful planning, writing and editing. Not only the journalist but also the editor may add, change or delete parts of the writing. This means that a journalist has sufficient time to create “planned discourse”, i.e. discourse that makes deliberate use of metaphors. Does this mean that newspaper articles typically exhibit deliberate metaphor use? Not every news text contains extended mappings, creative word play, novel mappings and explicit statements of metaphorical mappings, despite what research on metaphor in news tends to suggest. For example, a text may rank high in metaphor use but may be low in deliberate metaphor use.

This chapter will look at metaphorical patterns in selected news articles from our database, drawing from a list of patterns compiled by Semino (2008, pp. 22ff). It will explore connections between metaphorical patterns (or the lack thereof) and the notion of deliberateness. Links will be drawn to functions of metaphors in news discourse, i.e. it pursues the question why a particular metaphorical expression occurs in particular texts, in a particular context and in a particular form or pattern. Functions will be examined taking situational and textual characteristics of news texts into account, drawing connections to some functions of linguistic features as suggested by Biber (1988, p. 35) (e.g. ideational, textual, interpersonal functions).

6.2 Exploring highly metaphorical texts

In order to explore patterns and functions of metaphor, I begin with a discussion of two newspaper articles with an extremely high percentage of metaphorically used words. I will then focus on metaphorical lexical units that cluster together and may thus act as cohesive devices. The two highest-ranking texts in terms of percentage of metaphorically used words are from the business section. The number one text (AL2-fragment23), for which 25.9% of its lexical units are metaphorically used, is a highly specialized article on the

management of syndicates. As a general rule, newspapers are accessible to a broad audience and expert knowledge is usually not needed for understanding. This article, however, makes use of specialized terms that may be unknown to people who are not familiar with financial terminology and utilizes long and complex sentences. The text's conceptual and textual complexity may be the reasons for this exceptionally high metaphor usage. A check of how metaphorical language use is statistically distributed across word classes in this particular text reveals that, besides a higher than expected number of metaphorically used verbs, metaphorical prepositions are significantly overused compared to other word classes. Since the topic in this text is highly abstract, the prepositions connecting the complex phrases are metaphorical. An example of such a complex construction is given below. Metaphorically used prepositions are in italics.

- (1) Earlier this month, preliminary findings *from* an investigation by Kenneth Randall found that the Gooda Walker agency may have overstated its syndicates' profits *between* 1981 and 1988 *through* the use of time and distance policies, *about* which it had failed to inform its auditors *in* at least one syndicate. (AL2-fragment23)

Metaphor use in the runner up text is similarly high. Of all lexical units 25.2% are related to metaphor. This text describes a similarly difficult topic: it reports on the potential acquisition of one firm by another. The opening paragraph starts with a cluster of metaphorically used words that are clearly semantically connected (*winning, battle, defence*):

- (2) Container group Tiphook yesterday said it was still confident of *winning* its joint £643 million bid for Sea Containers even though the *battle* has swung towards James Sherwood's ferries-to-trailers combine. The offer from the Anglo-Swedish consortium formed by Tiphook and Stena AB is the subject of an appeal in the Bermudan courts which is aimed at overturning an earlier ruling allowing SeaCo to proceed with its 'poison pill' *defence*. (A8U-fragment14)

While it may be tempting to relate these words to a BUSINESS IS WAR metaphor, deriving conceptual metaphors from linguistic expressions is not straightforward. Since the present chapter is mainly concerned with patterns of metaphorical expressions in discourse, it does not focus on the discussion of conceptual metaphors. An approach to revealing the conceptual mapping for the related expressions in the above example will be presented in Chapter 8.

The above pattern does not recur in other parts of the text. Instead, a range of other expressions are used that are also said to be typical of business discourse (e.g. Boers, 1999; Charteris-Black & Musolff, 2003; McCloskey, 1983, p. 502) such as conceptualizing money as a liquid and changes in value as spatial movements: “this *flowed* through to earnings per share”; “*boost* the latest figures”; “shares *rose*”; “Christian Salvesen (...) *raised* pre-tax profits”; “earnings *crashed* by a third to 41p”. While those expressions are simply a common way to talk about economic development, their use does give the text cohesion, particularly through contrasting upward and downward movements (in italics):

- (3) Almost a third of group profits are earned overseas, interest and tax charges are *down* on last year and gearing stands at 13 per cent. Capital spending of £43 million should reach a total of £87 million for the full year. The shares *rose* 10p to 170p. Avon treads warily. Shares in Avon Rubber have *fallen* sharply this year (...). Whessoe saw pre-tax profit *rise* to £4.78 million, from £3.55 million, on sales of £58 million *down* from £100 million. Earnings were level at 17.5p a share. Dividends total 5p, *up* a penny, with a 3.75p final. (A8U-fragment14)

Referring to Crystal and Davy (1969), Moon (1994, p. 120) points out that “connectedness” is a key feature of newspaper writing. Such connectedness can be established, for example, through lexical repetition or contrasting statements. The above excerpt is an example of “recurrence” (Semino, 2008, p. 23) of metaphorical language, which involves expressions that are not explicitly connected but rather mirror a conventional tendency to describe changing money values in terms of upward and downward movements. While they do not serve a particular communicative function, they may, through opposing expressions for upward and downward movements, ease comprehension for the reader by helping him or her to compare and contrast what is happening in the market. Of course, determining whether this is indeed the case would require experimental tests. The function of spatial movement terms in this news article is mainly conceptual (i.e. they enable us to talk and think about the abstract topic of price development) as well as textual functions of cohesion. They are the prime example of metaphorical language use in the tradition of Lakoff and Johnson (1980). They are what Lakoff and Turner (1989) would call “generic-level metaphors”, used as a “central organizing device” (Henderson, 1986, p. 110).

Because both articles are rather specialized in nature, we also find metaphorical expressions that have been devised because an appropriate word for the description of a specific concept is lacking. Examples are “*poison pill*

defense” in the excerpt further above and “LMX *spiral*” in “(...) the members had not produced enough evidence of irregularities in the ‘LMX *spiral*’ (...)”(AL2-fragment23). *Poison pill* defense refers to a strategy that aims at causing negative consequences for a company that attempts a takeover. LMX *spiral* is a term referring to the phenomenon of businesses re-insuring themselves without actually meaning to. Note that in both cases the terms are put in quotation marks, signaling their metaphorical usage (Goatly, 1997, p. 175). The function of these two examples is to fill “terminological gaps” (Skorczynska & Deignan, 2006, p. 97).

Overall, the metaphors in both texts do not seem to stand out. The texts are not planned metaphorical discourse according to Shen and Balaban’s (1999) definition. Nevertheless, in the second text, metaphors from related source domains describing vertical movement tend to occur in close vicinity to each other. This may ease comprehension by emphasizing contrasting developments. While impressionistic knowledge of the 62 texts in the news corpus aligns with Shen and Balaban’s observations that metaphorical expressions close to each other can usually be attributed to a range of different source domains, this business text shows that texts that do not meet the criteria for Shen and Balaban’s “planned” discourse can also contain metaphorical expressions from the same source domain in close vicinity to each other.

By looking at concordances for the lexeme *come* in the previous chapter, we have also seen that even conventional metaphorical expressions may be surrounded by other conventional expressions from related source domains (e.g. “We’ve come to the *end* of our *road*” (A5E-fragment06) or “(...) Anyone can set up a letting agency (...) they come and *go*” (AHB-fragment41). *Come*, *end*, *road*, and *go* are conventional metaphorical expressions that may be broadly attributed to a JOURNEY metaphor. It seems as if spatial and directional terms are particularly likely to cluster together – even in “unplanned” discourse.

The following analysis takes a closer look at the noun *way*, which has been shown to be among the most frequently used metaphorical nouns in news texts and indicates direction. I have checked whether it appears with semantically related lexemes and if so what function such a cluster of related terms may have.

Of the 42 metaphorical occurrences of *way* in news texts, about half are accompanied by lexemes expressing movement or direction. The metaphorical expressions (in italics) are all conventional. The sentences below present a selection of examples:

- (4) In among those on their *way up*, and those who will never *go* anywhere, the pub rock circuit plays host to those who were once really something. (A1K-02)
- (5) As long as you can show that they owed you a legal duty to be careful and have been negligent, damages could *come* your *way*. (A31-fragment03)
- (6) The first, albeit tentative, *steps towards* forming a new Pacific-based economic union display an astute awareness of the *way* events are *moving* within Europe: *movements* with which Number 10 has yet to *come* to grips. (A7T-fragment01)
- (7) (d) The only *way* to develop a prototype is for the analyst to *get inside* the head of the user (...). (A8R-fragment02)

Only the last two excerpts stem from texts that employ movement-related terms to a greater extent. In (6) the extensive use is already foreshadowed by the word *compass* in the headline “The US sets its *compass* on two trading oceans”. In example (7), a text on computer systems development, there are initially no hints that would point to an exploitation of movement-related terms. Halfway through the text, however, there is a burst of such clusters. Abstract development is described in terms of concrete movements:

- (8) (...) Now that would be a great *leap forward*. Unfortunately you cannot *reach* this stage until you have developed a prototype system. (...) The only *way* to develop a prototype is for the analyst to *get inside* the head of the user (...). (...) the analyst will be *driven* by the user to meet key needs. Good system development *goes through* two distinct phases. Initially the analysis does all the work, *leading* the user *towards* a system he thinks is right for the business. (...)

Example (6) may point to planned discourse (albeit by a less strict definition than that of Shen & Balaban, 1999), since the use of the headline suggests deliberate employment of metaphors that are loosely connected to terms describing journeys. It is, however, also possible that the editor who created the headline noticed the metaphorical expressions used by the other writer. In excerpt (7) it is less clear whether the movement terms were employed in a planned manner or whether they were simply selected because they constitute a convenient way of describing abstract development. The first two examples, (4) and (5), show less indication of an intentional use of movement terms. These two articles exhibit only a small number of isolated cases. Movement terms in the first two examples – and quite likely even in the third – have been employed because they are a conventional way of talking about the topic and

not because the journalist wanted the reader to view the topic from a different perspective.

The examination of *way* has shown, like the analysis of *come*, that even in unplanned discourse terms related to the same source domain may occur in close vicinity. This observation is in line with Lakoff and Johnson (1980), who support the idea of conventional metaphorical expressions clustering together because of a shared underlying conceptual metaphor. It does not lend support to Shen and Balaban's (1999) finding that related metaphorical expressions tend to cluster together in planned but not in unplanned discourse. Whether the findings for *way* and *come* apply to a wider range of movement-related terms merits further investigation.

The behavior found for *way* and for expressions of upward and downward movement is, however, not typical of all news text and also not true for all lexemes. Metaphorical expressions may cluster together, but they are frequently from clearly different source domains, as in AA3-fragment08, again from the commerce section (metaphorical uses in italics):

- (9) (...) So they compromised and gave £100 *to* the Barlow Clowes Investors Group which was *formed* last July to *represent* the investors' interests and *coordinate* the *fight* for compensation. *That*, says Mr. Tyson, has been their only *blessing*. "They are dedicated people who clearly know what they are *talking about* and have *guided* us *through* it. (...)" (AA3-fragment08)

Semino (2008, p. 23) notes that such "combining and mixing" often remains unnoticed by the reader. This mixing of metaphorical expressions from different source domains is far more common than clusters formed by semantically related expressions, as was observed for *come* and *way*. Kimmel (2010) found that mixed metaphors in political news texts accounted for 76% of metaphor clusters. Though they are from varied source domains, they do not disrupt coherence or comprehension because they usually belong to different clauses, which "creates little cognitive incentive to blend metaphorical imagery" (Kimmel, 2010, p. 114).

Most texts from the news sample that have revealed other movement terms close to the lexeme *way* are not built on an overarching movement mapping. Rather, the use of these movement terms is commonly restricted to small stretches of text. Apart from example (6) above, where the movement terms indeed seem to suggest that the reader should understand economic developments in terms of physical movement, the use of movement terms close to each other merely constitute a conventional way of talking about abstract development.

While *way* is not always accompanied by other terms related to movement, in news texts it seems to occur close to such terms frequently. It may function as an invitation for the reader to understand one thing in terms of another or may help establish coherence. In order to see whether this behavior of the noun *way* is particularly typical of news texts, I checked concordances for *way* in the registers of academic texts, conversation and fiction.

In the academic text sample, there are also cases of *way* being accompanied by terms that can be attributed to the same broad source domain:

- (10) (...) they agreed to ‘have a *go*’ and the placement *went ahead*. She commented: I had to fight every *step* of the *way* for this. (CRS-fragment01)
- (11) A second *approach* is to frame the law in such a *way* as to make it clear that the court should make a moral judgment on the gravity of the defendant’s conduct. (ACJ-fragment01)

The occurrence of *way* together with such terms, however, is less abundant compared to news texts.

In conversation such patterns are rare (e.g. “Most of them *get back into* it in a big *way*” (KCU-fragment02); “Do it that *way* on. (...) Do you *follow*?” (KBJ-fragment17)). Instead, *way* appears without further direction or movement related terms in the immediate context. Its use is largely limited to formulaic expressions (e.g. *no way*, *in a way*, *in a big way*, *in a funny way*, *by the way*, *the other way*, *in any way*). What is more common than using related source domain terms is a speaker repeating the same term (KCVfragment42).

- (12) Patrick: Yes you have to careful with er that a holiday doesn’t just doesn’t become an expensive *way* of being uncomfortable you know.
Katherine: But it isn’t.
Patrick: Oh! Oh yes it is. To me it’s an expensive *way* of being uncomfortable.
- (13) Barry: I mean, the only *way* you could do that would be if you (...) That’s the only *way* you could actually make that work at all. (KBD-fragment21)

Literary writing also makes use of *way* as part of fixed expressions, which makes its use similar to conversation (e.g. *in one way*, *no way*, *in a way*, *in her way*). Unlike in conversation, there are stretches of text where related terms are used in close vicinity (e.g. “I’m fifty and have a *long way* to *go*. I don’t think you can see things the *way* I see them” (AC2-fragment06). “If the *approach* was that *way* he would get no warning at all (...)” (BPA-fragment14). “Delaney knew there

was no *way* she would be *shifted* from her chosen *course*” (BPA-fragment14). This co-occurrence with related terms is, however, not as prominent as it is in news articles.

The exploration of *way* (and *come* in the previous chapter) is suggestive, but findings cannot be extrapolated to conclusions on the use of all movement and direction terms. However, it calls for a more systematic analysis of such terms and their context in different registers. This analysis suggests different usage across registers that may be rooted in diverging situational and textual characteristics. In conversation, for instance, there is no time to carefully plan the selection of source domains. Journalists, on the other hand, are given that time and may purposefully select expressions. The analysis above suggests that while journalists may employ cohesive elements in the form of related metaphorical expressions, they are not by default consciously selected with the aim of making the reader connect source and target domains. Nevertheless, they contribute to textual connectedness.

While the two news texts ranking highest in metaphorical language use exhibit some recurrences of related metaphorical expressions as well as clusters of expressions that can be related to similar source domains, these top two texts are probably not experienced as particularly metaphorical by the reader. As has been shown above, metaphorical expressions in these articles serve mainly ideational (conceptual) and textual functions. They are a prime demonstration of how we simply conceptualize abstract ideas in terms of metaphors and these metaphorical expressions may also provide coherence in the text. Metaphorical expressions are used because they provide the most efficient, straightforward way of expressing such meaning.

Metaphor is more than just a conceptual or textual device

In order to make explicit the connections between textual characteristics, communicative goals and functions of metaphor, I will now contrast the two news reports with the highest percentage of metaphorically used lexical units with two other articles – one with a similarly high percentage of metaphorical expressions and another ranking lower in metaphor use. The major difference from what has been discussed so far is that they are comparatively deliberate in their use of metaphor. The first text is an op-ed piece on the conflict in the Middle East (A9J-fragment01). It displays the fourth highest use of metaphor (24.3%) of all news texts and is thus similar in the number of metaphors to the business texts I have analyzed above. The second article ranks lower in metaphor usage (18.1%). It is a piece on the TV western genre from the leisure section (A2D-fragment05).

Compared to the two business texts, the world affairs article on the conflict in the Middle East draws attention to its metaphorical language use. Despite the similar frequency of metaphorical expressions, it is likely experienced as much more metaphorical by the reader than the business texts discussed above. The headline starts out with lexemes from the semantic field of 'birth' ("*Midwife* at the *birth* of a state") which recur later in the text, and subsequently continues with words from the semantic field of war ("It [the Intifada] has employed a dual *strategy* to achieve these two *objectives*. First, a comprehensive disobedience *campaign* was begun (...)"). Terms related to building and construction extend across large parts of the text ("*constructing* a political infrastructure"; "the *structure* allows for continuous interchange of roles and ideas"; "*building* our state *block* by *block*" etc.) These are prime examples of deliberate metaphor – metaphorical expressions that make the reader view the topic from a different perspective. While there are a few deliberate novel metaphorical expressions, the bulk of deliberate expressions in this political op-ed piece are, like in the two commerce texts discussed above, conventional. Novel metaphors are infrequent in general – despite news being a register whose production circumstances allow for careful thought and editing.

The article on the TV western has a much lower percentage of metaphorically used words than the two commerce texts, as well as the news report on the Middle East. Similar to the text on the Middle East, however, it is hard not to notice the metaphorical language use. The journalist employs what Koller (2003a) calls "topic-triggered" metaphors. For example:

- (14) By the mid-80s they had all *gone the way* of the *buffalo: extinct* save for *preservation* in the *national park* of permanent re-runs.
- (15) There are encouraging signs, however, that the TV western is *struggling back into* the *saddle*.
- (16) Will the western *ride* again?

The metaphorical expressions in italics all allude to the topic of the text – the western. Even though this text ranks much lower in terms of overall metaphorical language use, it does appear more metaphorical to the reader than, for instance, the business texts discussed above. Why is it the case that some news texts, despite their abundant use of metaphorical expressions, do not seem particularly metaphorical to the reader? What is different about these expressions, their use or the particular texts they are used in? The following

section will take a closer look at the different functions metaphorical language may perform.

In the business texts above, the functions of metaphorical language use were identified as primarily ideational and textual. The writers of the articles on the conflict in the Middle East, as well as the one on the TV western, used metaphors in clearly different ways. Looking at metaphor in discourse thus requires taking into account more than just the notion of metaphor as a conceptual device. News texts are produced by real people for real people. News producers as well as the recipients of news bring their own knowledge and motivations into the production and reception process. They may use metaphor to transport an opinion, to achieve stylistic effects, or to force the reader to view the topic from a different angle. To what extent metaphor performs these functions depends on the linguistic form of the metaphorical expressions as well as on the intentions of writer, the topic and the purpose of the news article.

6.3 Metaphor and deliberateness

Metaphor has traditionally been researched in language and thought. Approaching metaphor from a discourse perspective naturally moves the communicative dimension of metaphor into the spotlight. According to Steen (2008), the communicative function of metaphor includes attending to whether or not the producer of a text deliberately invites the addressee to understand one thing in terms of something else or whether the recipient experiences an expression to be such a deliberate attempt to change his or her perspective on the topic. Consider the following two examples that set apart non-deliberate and deliberate metaphor use:

- (17) The metaphor is apt, as Palestinians regard themselves as engaging *in* a process of *giving birth* to their independent Palestinian state. (A9J-fragment01)
- (18) Prices have remained *high* – indeed the FT-SE index has *risen* another 55 *points* since then (...). (AL2-fragment16)

The first example clearly invites the reader to draw a connection between the development of a Palestinian state and the process of birth. The target (state development) is viewed through a completely different domain (child birth). This contrasts sharply with the second example. The lexemes *high* and *risen* may both be representatives of the source domain UP. It is unlikely, however, that

the journalist wants the reader to conceptualize an increase of prices or stock in terms of upward movement and equally unlikely that the reader in fact does so. Thus, another dimension – the communicative one (see Table 6.1) – needs to be added to questions about metaphor identification in language and thought that have been formulated in Steen (2007, p. 14).

As has been emphasized in the previous chapters on metaphor identification and analysis, the different levels of research need to be held apart. We were careful to operationalize what counts as a metaphor on the symbolic level. A metaphor on the page as identified through comparing and contrasting the contextual and a more basic sense in a dictionary is not necessarily processed as a cross-domain mapping in people's minds. The same holds for the present discussion of metaphor deliberateness. Just as with metaphorical expressions in general, it should be possible to determine what counts as a deliberate metaphor on an analytical level. A text's perceived metaphoricity (by the text producer or the recipient) can subsequently be operationalized as, for example, the number, distribution or kind of deliberate metaphors used in the text. Whether a metaphor that has been found to be a

Table 6.1

Areas of research for cognitive-linguistic approaches to metaphor in usage

approached as		questions on metaphor identification
	language	When does any linguistic form-meaning pairing in text and talk count as metaphorical?
symbolic structure	thought	When does a conceptual structure related to any linguistic form in text and talk count as metaphorical?
	communication	When does any linguistic form-meaning pairing in text and talk or a conceptual structure related to any linguistic form in text and talk count as deliberately metaphorical?
	language	When does the production or reception in text or talk of any linguistic form-meaning pairing count as metaphorical?
behavior	thought	When does the production or reception in text or talk of a conceptual structure related to any linguistic form count as metaphorical?
	communication	When does the production or reception in text or talk of any linguistic form-meaning pairing or the production or reception in text or talk of a conceptual structure related to any linguistic form count as deliberately metaphorical?

deliberate metaphor by an analytical procedure is indeed experienced as deliberate, needs to be tested experimentally. According to Steen (2008, p. 224), a metaphorical expression is experienced as deliberate when it is recognized as a rhetorical device.

This section is devoted to the deliberate use of metaphor in news texts. It starts out by addressing the lack of reliable methods of identifying deliberate metaphor. The focus will be on discussing different forms, levels of conventionality and patterns of deliberate metaphor use including functions such a use of figurative language may perform.

I am aware of only one prior attempt to list explicit criteria for the identification of deliberate metaphorical language use (Goddard, 2004, p. 1213). The criteria are somewhat vague, however, and do not go much beyond the identification of metaphor in general (e.g. dissonance between literal meaning and intended meaning; implied statement of likeness). Below I suggest an expanded and more precise protocol for identifying deliberate metaphor (IDeM) in language. Most of these criteria have already been raised in Steen's (in press-b) discussion of the communicative function of metaphors; however, here they are collected and explicitly placed in the context of *identifying* deliberate metaphors.

In order to determine whether or not an expression can be considered to be a deliberate metaphor, it is necessary to first determine whether a lexeme has been used metaphorically in the first place. This is done by applying MIP or MIPVU. For the identification of deliberate use, the analyst needs to determine whether the metaphorical expression that has been identified by MIP/MIPVU is meant to change the recipient's perspective on the topic of the text. This can be determined by checking whether there are any features present that make the reader aware of the intended metaphorical usage of an expression:

- Is the metaphorical unit signaled (e.g. by a simile or other signaling device)?
- Is the metaphorical unit in the form of A = B?
- Is the metaphorical unit expressed directly?
- Is the metaphorical unit novel?
- Is the metaphorical unit surrounded by metaphorical expressions from compatible semantic fields, which are somehow connected?
- Is the metaphorical sense of the unit particularly salient through, for example, alluding to the topic of the text?
- Does the metaphorical unit participate in word play?

- Does the metaphorical unit elicit rhetorical effects such as, for example, persuasion or humor?

These features are not meant to define deliberateness but are used as a tool to search for them. Note that not all of these questions need to be answered positively. While there may be cases where an affirmative answer to one of these questions points to deliberate metaphor usage, in other cases a combination thereof will apply. The identified items are probably those that a reader would intuitively recognize as metaphorical. In order to determine whether or not a metaphor as identified by this procedure is indeed perceived as such, however, is a question about metaphor processing and needs to be determined through experimental research.

Deliberate metaphor may be employed for different purposes. Cameron's research on classroom discourse (2003, p. 102) revealed that teachers tended to use deliberate metaphor in order to explain concepts, while students used it in playful ways when talking amongst themselves. In educational discourse, deliberate metaphors typically occur in "bursts or clusters" (Cameron, 2003, p. 106) in order to explain difficult concepts. Cameron suggests that this may be also the case in other types of discourse, though difficulty may not just mean a difficult topic but may refer to a difficult interpersonal situation as well.

Deliberate metaphor may also take on various different forms and different levels of conventionality. Metaphors that are deliberately used are not necessarily novel (Steen, 2008, p. 223), as the excerpt on the development of a Palestinian state shows. *Giving birth* ("(...) *giving birth* to their independent Palestinian state.") is a conventional expression that is employed to make the reader establish similarity relations between developing a state and the process of giving birth.

Deliberately used metaphors are not always marked as such (e.g. through a simile, textual or other linguistic markers like the word 'metaphor' above). In the sentence "In general, our policy should be to proceed with *building* our state *block* by *block* (...)" the metaphorical use of the construction-related lexemes is not highlighted by a signaling device. Nevertheless, it is clearly selected deliberately to make the reader view the development of a state in terms of constructing a concrete object. The journalist could also have chosen to go for a non-metaphorical description (e.g. developing the state one institution at a time) but went for metaphorical expressions instead to make the reader experience the topic in terms of the source domain. "There are always different ways of saying the same thing, and they are not random, accidental alternatives" (Fowler, 1991, p. 4).

Just as *giving birth*, the expressions in the above example are all conventional. This shows that deliberate uses of metaphorical language are not necessarily novel, as one may intuitively expect. These brief examples illustrate that deliberate metaphor can take on various different forms and different levels of conventionality. The following sections home in on the use of (non)deliberate metaphors in news discourse, their forms, patterns and functions and how this may relate to textual and situational characteristics of news texts.

6.3.1 Conventionality and linguistic form

Let us now consider the interplay of deliberateness and conventionality, i.e. whether a metaphorical expression is novel or conventional. Besides the level of conventionality, this section also looks at the interplay of deliberateness and the form of metaphor, i.e. whether an expression occurs as a metaphor or a simile and whether the expression is used indirectly (“*build* a state”) or directly (“he wings up high like an *eagle*”).

Deliberate metaphor can be used in different degrees of conventionality. In the following example from the text on the Palestinian-Israeli conflict mentioned above, *walls* is used in a novel way since its contextual meaning is not listed in the dictionary. “A pyramid administrative structure (...) can be established. During the Intifada people have been engaged in building the *side walls*. A government would provide the roof which would bring these *walls* together” (A9J-fragment01). Other metaphorical expressions that also stem from the semantic field of construction such as *building* and *block* (“building our state *block* by *block*” (A9J-fragment01)), by contrast, are clearly conventional (the contextual meaning of *block* is in the dictionary) but no less deliberate. They are surrounded by other construction related metaphors, both novel and conventional, and thus clearly encourage the reader to see the development of a Palestinian state in terms of building something concrete.

Cameron (2008, p. 202) notes that novel metaphors in spontaneous talk are deliberate “since some search for an appropriate expression must have preceded production.” Identifying each novel metaphor in the corpus as deliberate may seem odd at times. Recall, for instance, a sentence discussed in a previous chapter: “Walking here, you leave the 20th century behind on the *outskirts* of the forest and enter the reconstructed emptiness (...)” (AHC-fragment60), in which *outskirts* is a novel expression, according to the criteria applied in this thesis (conventionally, *outskirts* is applied to cities but not to forests). Using the principles for deliberate metaphor identification suggested

above, it is deliberately employed in this context. Note though, that *outskirts* has been established as novel based only on the criteria employed in the MIPVU procedure. The basic meaning of *outskirts* in the dictionaries only refers to cities or towns. The distinction between novel and conventional expressions is not always easy to make, since metaphorical expressions lie somewhere on a continuum between these two extreme, and *outskirts* is an example for which the assignment to one or the other category is difficult. Based on the MIPVU protocol, *outskirts* is defined as a novel metaphorical expression, though it may have been regarded as conventional had other criteria been applied.

Signaling (Goatly, 1997, p. 183) the underlying metaphor by a simile is another aspect – probably the clearest – of deliberate metaphor. For example, in “the chestnuts prance at him, holding up their gleaming branches *like hysterics*” (A36-fragment07), *hysterics* is used metaphorically. While its meaning cannot be compared to a more basic sense, there is a switch away from the topic of the text. It is thus used metaphorically in a direct way. The movement of the chestnuts is compared to hysterics. (It should be noted that the use of a simile is likely but not necessarily an attempt to make the recipient think of a different domain; for example, very conventional idioms such as “sleep *like a log*” may not necessarily be deliberate devices.)

In her spoken discourse data, Cameron (2008, p. 202) observed that deliberate metaphors tend to be signaled. Our quantitative analysis has shown, however, that metaphor is rarely signaled in any register. In news, signaling does not play a more prominent role than in other registers. Thus, while it is true that metaphor signaling often points to deliberate usage, the converse is not true: deliberate metaphors are not always signaled – at least not in the news register. Written news discourse does not have at its disposal signaling devices such as those Cameron (2008, p. 202) found for her spoken data (e.g. pausing, hesitation). Note that while these devices may point to deliberate metaphor use, not every pause indicates that a deliberately used metaphor is going to follow. Its main signaling devices are therefore lexemes introducing similes (e.g. *like, as*), other comparison markers (e.g. *as if, resembling*) or textual features such as quotation marks (e.g. “He rejects charges that he was partly responsible for the ‘*casino atmosphere*’ that gripped US corporate life in the early 1980s” (A1E-fragment01).

Directly used metaphorical expressions following comparison markers are almost always an open invitation for the reader to compare two dissimilar things and are thus deliberately employed devices. Direct metaphor does not, however, need to be signaled in order for it to qualify as deliberate use.

Consider the excerpt from an article on computer systems development discussed in Chapter 4, in which the journalist compared the system developer assisting the user to a doctor helping the patient.

- (19) IN SYSTEMS development nothing is more fundamental than assessing user requirements. (...) But many system developers are unable to assess requirements properly. They seem to think that you can ask a businessman what his requirements are and get an answer that amounts to a draft system specification. *A doctor doesn't ask his patient what treatment to prescribe. The patient can explain only what the problem is. It is the doctor that provides the remedy.* (...) A user may have a deep knowledge of business problems, but knowing little about computers, has no idea how they should be tackled. (A8R-fragment02)

The medical source domain is not signaled. Nevertheless the journalist forces the reader's attention to the source domain through an extended direct comparison. Apart from being linguistically different from indirect metaphor, direct metaphor is commonly also communicatively different – it is deliberately metaphorical because “it leaves the addressee no option but to pay explicit attention to the source domain as a source domain” (Steen, in press-b). In the example above, the main function of the deliberate comparison is to explain the relationship between a systems developer and a user in more familiar terms – the relationship between a doctor and their patient.

While direct metaphor seems to be more frequent in the news register than in academic writing and conversation, it plays only a marginal role compared to indirect metaphor. Its use may also be in part a stylistic choice by the writer. Of all 62 news texts in our corpus, 18 texts contain direct metaphors. Half of these texts exhibit direct metaphor on more than one occasion. The two texts with the highest incidence of direct metaphor use stem from the leisure section (4 uses each). Writers of articles for the leisure and arts section seem most likely to employ direct metaphor. Six out of the eight articles in the arts section contain directly used metaphorical language. The second highest percentage is found for the leisure section: 38.5% of all texts in this category contain direct metaphors. The commerce and the natural science section do not use direct metaphor at all.

As the above examples demonstrate, the notion of deliberateness is independent of the level of conventionality and whether or not a metaphor is signaled, though signaling points to deliberate use in most cases. As Cameron (2003, p. 101) points out, “the deliberateness lies in the use of the linguistic metaphor in its discourse context, for a particular purpose on a particular occasion”. This means that conventional metaphorical expressions can also be

deliberate. Note that conventional metaphorical expressions far outnumber novel ones. It is tempting to conclude that deliberate metaphor is therefore typically conventional. To conclude this with certainty, however, would require knowing the strength of the interaction between conventionality and deliberateness, for which there is no data.

Cameron suggests that deliberate uses are likely marked through, e.g., intonation in talk or orthographic features in writing. Nevertheless, Cameron (2003, p. 101) distinguishes between “deliberate” and “conventionalized” metaphors, describing the latter as “part of the participants’ shared language resources for talking about [a] particular topic.” This distinction may be misleading because such shared resources can also be deliberately exploited for achieving certain effects. Consider the following example of an obituary of a composer in a newspaper (A1H-fragment05) – “But the resulting mixture of hymns, folksy tunes and recitatives at times of *intoxicating* banality was a sensation” (Steen et al., 2010). While *intoxicating* is a conventional metaphor (its basic meaning is ‘capable of making you drunk’), it seems to be deliberately employed in the present context because of the playful contrast established between *intoxicating* and *banality*.

Further examples of conventional metaphorical language are idioms such as *play with fire*. When encountering this idiom in the following sentence taken from a sports report on a rugby match, it does not stand out as deliberately used. “Each new indignity in the heap visited on Welsh rugby seems worse than the last. The selectors knew they were *playing with fire* when they decided to arrange a couple of club fixtures (...)” (A1N-fragment09). Reading further along, however, it becomes clear that the journalist deliberately draws from related knowledge domains: “(...) and they have duly been *consumed* in a *conflagration* of their own making. The New Zealanders, appropriately garbed in *funeral* black, arrive next week to scatter the *ashes*”. *Conflagration* refers to a large destructive fire. *Consumed* also refers to destruction by fire. The next sentence continues the theme: fire produces ash and ash can be linked to the cremation of bodies at funerals. Moreover, there is a connection to the headline of the news report “Rugby Union: Welsh horizon all turns *black*”. *Black* refers to the unhappy loss of the Welsh team but also alludes to the team, the “All Blacks”, named for their black uniforms. Given the discourse context, the headline can be clearly linked to fire and ash. This is very different from the conventional but non-deliberate use of idioms in spontaneous conversation, as the following corpus excerpt illustrates: “Well he’s going to carry on like that isn’t he? – Not unless someone *puts their foot down*” (KBH-fragment04). The source domain of FIRE set up by the idiom *play with fire* extends further across the paragraph

through the words *conflagration*, *consumed*, *fire*, *ashes*, and *black*. These semantically related terms are textually connected through a deliberate exploitation of the broad source domain of FIRE.

As the corpus examples above have demonstrated, deliberateness and level of conventionality as well as deliberateness and metaphor form are independent of each other. A deliberate metaphor can be conventional or novel. Conventional metaphorical expressions can be deliberate or not while novel ones are deliberate; recall, however, that distinguishing novel from conventional metaphors can be difficult. Signals often indicate the deliberate use of a metaphorical expression, but this does not necessarily always have to be the case. Thus, as Steen (in press-b) points out, metaphor has three dimensions: “the linguistic dimension of (in)directness, the conceptual parameter of conventionality, and the communicative dimension of deliberateness.”

6.3.2 Patterns and functions

In order to get a better grasp of the function of metaphors in news texts, it is helpful to examine its patterns in all discourse (Semino, 2008, p. 22). A close look at such patterns will allow deduction of potential reasons for their use and description of the text or context in which they are used. Moreover it allows one to determine the purpose of their use and the potential effect on the reader. The analysis will start out with topic-triggered metaphors and will then move on to metaphorical expressions from related semantic fields that stretch over sentences or paragraphs. Both patterns will be examined in a range of different texts and contexts, revealing their involvement in establishing textual cohesion and their communicative functions (e.g. creating humor, raising attention). The analysis of extended metaphors related to construction in a political news report will highlight the persuasive potential of metaphor. The section will conclude with examples of metaphors that are not topic-triggered and do not appear in clusters of semantically related terms but are nevertheless clearly deliberately used.

As mentioned above, one pattern of metaphorical expressions that can be found in newspaper texts are so-called “topic-triggered” (Koller, 2003a) metaphors. For example, an article on public transportation is titled “Design: *Crossed lines* over the toytown tram: City transport could soon be back on the right *track*” (A3M-fragment02). The journalist is clearly playing with language. The use of the metaphorical word *track* has been triggered by the topic of public transport, in particular trams. The same applies to *crossed lines*. It can be

interpreted both literally (electric lines) and metaphorically (problematic situation). Semino (2008, p. 27) describes this kind of metaphorical punning as typical for news headlines. Journalists need to grab the readers' attention and want to make the headline striking and memorable and make them interested in reading the article (Reah, 2002, pp. 15, 17, 28). Both the metaphorical and the basic meaning of *track* are evoked at the same time.

Such contrast between literal and metaphorical uses of words is particularly striking in an article from the leisure pages on the revival of the TV western, also mentioned above. It is entitled "Media: Return of the six-gun saga: Modern actors cannot ride and young viewers do not understand the cowboy code, but a revival of the western looms on the horizon, John Lichfield says" (A2D-fragment05). As demonstrated above, this news article, while not even among the top ten most metaphorical texts in terms of metaphor frequency, does feel metaphorical. Here are some more examples in addition to those given in Section 6.2.

- (20) The TV western seemed to *fade into* the *sunset* some time in the mid-1970s (...).
- (21) The cost has gone through the *barn roof*.
- (22) It is premature, then, to say that the western has *galloped* back to centre screen. But there is a *puff* of *dust* on the *horizon*.

The topic (TV Western) has clearly influenced the choice of metaphorical expressions associated with the Wild West (e.g. *sunset*, *gallop*, *horizon*). These expressions evoke both the literal and the metaphorical meaning and create humorous effects that liven up the article and are a deliberate choice by the author. Kövecses (2005, pp. 237-238) suggests that this "pressure of coherence", as he calls it, is pervasive in journalism. Some of the above Western-related terms are used in a novel fashion (e.g. *puff*, *dust*) and stand out as metaphorically used. Others (e.g. *galloping*) are quite conventional but are no less obvious because they occur together with other topic-triggered metaphorical expressions. The journalist uses language creatively. For example, "to go through the roof" is a conventional way of expressing a quick increase of something. By adding *barn*, however, the writer once more brings the source domain into the center of attention. Topic-triggered metaphors grab attention and have a humorous function (Semino, 2008, p. 223). Thus newspapers not only contain reports about newsworthy events that aim primarily to inform but also aim to entertain (Reah, 2002, p. 8).

Unlike in real-time conversation, in newspaper discourse there is no direct contact between the producer and the receiver of the message. News producers and news readers usually do not know each other and there are only limited possibilities for feedback in the form of letters to the editor. Due to the written modality and the production circumstances of newspapers, this limited feedback cannot happen immediately but is only possible with a time delay. Compare conversation, where metaphorical language may help build and negotiate interpersonal relationships (e.g. Semino, 2008, p. 32) by expressing emotions (e.g. “Just a minute darling (pause) it’s alright I (pause) can afford to buy you a packet of Polos. (...) *Pet* hold mummy’s hand (pause) hold mummy’s hand, there’s a good girl (...)” (KBH-fragment09), attacking others (e.g. Obnoxious little man int he? He’s like a *ferret!* (KBD-fragment21) or creating humor as in the following example (KB7-fragment10):

- (23) Unknown: You’d got the toilet there (pause) and behind the door, I mean you had to sort of squeeze yourself and shut the door, and behind the door was a shower.
 Jill: You’re joking.
 Stuart: (unclear)
 Unknown: No shower curtain mind you.
 Jill: Even so, no room to *swing a cat*.

The journalist, in contrast, cannot directly interact with the reader. Nevertheless the journalist strives to tie the reader to the text. He or she may achieve this by linguistic means such as metaphorical expressions that entertain the reader or that are humorous and attention-grabbing.

Besides this interpersonal function, metaphorical expressions also serve the textual function of achieving textual cohesion (Goatly, 1997, p. 163). The metaphorically used words relating to the topic of the Western genre do not all cluster together in one or two paragraphs but are spread out roughly equally across the complete text. This supports connections between different paragraphs and creates overall connectedness. This is different from Cameron’s observation of clustering of metaphors that are used to explain difficult concepts in classroom talk.

Another article employing topic-triggered metaphors is the text on the conflict in the Middle East discussed above. The topic of the text is the development of a Palestinian state. This process has frequently been interrupted by violence and war. In part of the text, the author of this article makes use of metaphorical expressions that are related to physical violence. Here are some examples: “It [the Intifada] has employed a dual *strategy* to

achieve these two *objectives*. First, a comprehensive civil disobedience *campaign* was begun (...).” The basic meaning of *strategy* is ‘movements in war’, of *objectives* ‘a place that you are trying to reach, especially in a military attack’, and of *campaign* ‘series of actions by an army to win a war’. Further lexemes that can be attributed to the semantic field of war, or more generally physical conflict, are metaphorically used in a direct way, introduced by a comparison marker: “(...) local institutions and the general public constitute the *field commanders* in the battle of civilian disobedience (...),” or “It is as if it is *walking through a minefield*.” These signaled direct uses draw attention to the comparison of two different domains.

These examples are less obviously topic-triggered than the Western related terms in the previous text because they exist alongside very prominent metaphorical expressions from the semantic field of construction (“*construct* a political infrastructure”, “state *building*”, “*pyramid* administrative *structure*” etc.) and thus do not immediately stand out. Their use here is quite different from the previous example. They are not attention grabbing or humorous, but their repeated use highlights the struggle by the Palestinians. Interestingly, some of these expressions of metaphorical struggle occur in close vicinity to further semantically related expressions of violence and war that are literally used (e.g. “*occupation*”, “*armoured* units *raided* these villages, *storming* through makeshift defensive road blocks (...)”, “(...) *demolishing* homes, *uprooting* olive or citrus trees, physical *intimidation* and *terror* tactics employed by *raiding* army units, *shooting*, *killing*, (...)”). These literal uses describe actions by the Israelis. This has the effect of contrasting metaphorical violence of the Palestinians with real violence used by the Israelis.

The author’s position on the subject is clearly not neutral. He opposes literal and metaphorical expressions for rhetorical purposes. Because of the persuasive qualities of metaphors they are frequently employed in argument to achieve certain rhetorical effects. They thus play an important role in the development of ideology (Charteris-Black, 2004, pp. 7-8). The writer wants the reader to take side with the Palestinians. The reader is manipulated in a way such that he or she will perceive the actions of the Palestinians as politics and the action of the Israelis as violence and is thus more likely to sympathize with the Palestinians. In addition to this persuasive function based on the deliberate metaphorical manipulation of perspective, both literally and metaphorically used words interact with each other, fulfilling a cohesive function on a textual level.

There is also a semantic link between the military and construction-related metaphors frequently used throughout the text. “War and building

seem to have a natural relationship of opposition to one another” (Ritchie, 2006, p. 152). The metaphorical expressions from the semantic field of construction have an ideational function, which means that they help create a certain view of reality (Semino, 2008, p. 31). The metaphorical use of construction terms is interesting because at the same time the Palestinians are not only building an infrastructure but are also literally (re)building their houses. The use of the metaphorically used word *home* towards the end of the article (“It would add another necessary touch in the process of creating a Palestinian *home*.”) is particularly suggestive. It stresses that many Palestinians have been literally forced to leave their houses but that now the time has come to create a *home*, i.e. a Palestinian state.

The construction-related expressions are also subtly persuasive. As Lakoff and Johnson (1980, p. 13) remark, a mapping is always partial: “If it were total, one concept would actually *be* the other, not merely be understood in terms of it”. Some aspects of a metaphor are thus the subject of greater focus – they are highlighted – whereas others are hidden (Lakoff & Johnson, 1980, p. 10). According to Hellsten and Renvall (1997, p. 41) this phenomenon makes metaphor a rhetorical means of persuasion. Conventional metaphors “limit the perspective from which matters can be seen. While highlighting something they also hide some aspects.”

Just as Charteris-Black (2004) found in his corpus, the writer of the opinion piece on the Middle Eastern conflict uses expressions from the semantic field of construction to create a positive evaluation of the Palestinians’ activities. “Metaphors from this source domain carry a strong positive connotation because they express aspiration towards desired social goals” (Charteris-Black, 2004, p. 70). What is hidden by those metaphors, however, is the notion that the process of establishing a Palestinian state can be a tedious and long process that may in fact never be finished.

In their 1980 work, Lakoff and Johnson (1980) noted that metaphors are powerful in that they “define reality (...) through a coherent network of entailments that highlight some features of reality and hide others” (p. 157). Ritchie (2006: 147) notes that “the choice of metaphor vehicle can itself be a rhetorical move (...) and, referring to Bem (1967), continues that “the way we describe an event to ourselves, often, in effect, creates our attitude towards it.” Thus, as van Dijk (1991, p. 116) notes, an analysis of news discourse needs to consider that textual structures may “express or signal various ‘underlying’ meanings, opinions, and ideologies.”

Newspapers play a role in “mirroring or manipulating reality” (A. R. Anderson & Nicholson, 2005, p. 158). The article on Palestine clearly tries to

influence the readers' attitudes through the recurring semantically connected expressions. Interestingly, at the beginning of the news article, there are no clear indications of an extended use of construction-related terms. The first expression from the semantic field of construction occurs only in sentence eight. There is no indication in the headline. In fact, the headline compares creating a state to giving birth (“*Midwife at the birth of a state*”). The headline is a typical component of the news schema (van Dijk, 1988, p. 26) and generally states the most important topic. However, many different people are involved in the production of newspapers and it is unclear to what extent the author of an article is actually solely responsible for its content (Chimombo & Roseberry, 1998, p. 313). “The headline will rarely, if ever, be written by the reporter who wrote the news story” (Reah, 2002, p. 13). Moreover, there are restrictions on its formulations through space constraints (Reah, 2002, p. 13). Expressions from the semantic field of construction are picked up again in sentences 16 and 17. From sentence 31 onwards, almost halfway through the text, these expressions keep appearing regularly. In spoken language data Cameron and Stelma (2004, p. 132) discovered that such clusters mostly occurred when speakers presented their opinions, which parallels their function in the present article.

Metaphorical expressions of building and construction are particularly frequent towards the end of the article. Koller (2003b, p. 120) found that metaphors clustering towards the end of a text have a strong persuasive function. They assist the author to “restantiate and reinforce their particular metaphor constructions and thus ‘drive the point home’ to their readers”, serving an interpersonal function. This points to the deliberate use of construction-related metaphors in particular at the end of the text to once more place emphasis on the progress and positive outlook that has been initiated by the Intifada and to summarize this viewpoint. The expressions are deliberately chosen for argumentative purposes. They aim to achieve the desired effect of giving the Palestinian efforts a positive spin and not merely for effective transfer of information. The article is signed, indicating that it does not just inform but that it informs from a certain perspective (Kitis & Milapides, 1997, p. 539). The expressions drawing from the semantic fields of building and construction are thus a “conscious discourse strategy” (Steen, 2008, p. 223). Such “sustained metaphors” (Werth, 1994) are clearly not just a feature of literature. Thus, on the one hand the metaphors used in this article assist the public in understanding complex political issues by turning them into “more simplified packets of information” (Mio, 1997, p. 113). Political issues are rendered into something concrete (Hellsten & Renvall, 1997) and “reduce

the political world into simpler models that are easier to manipulate.” Thus they also become relevant to the general audience of newspaper readers (Mio, 1997, pp. 114, 118). On the other hand, these metaphors are not merely employed to help people understand complex abstract situations; they also have a rhetorical function (e.g. Charteris-Black, 2005). Metaphors are thus an instrument of social control (Fairclough, 1989, pp. 36-37) that the media have at their disposal. It seems safe to conclude that the author deliberately used metaphor to influence the reader’s opinion about the Intifada. How they are cognitively represented by real readers is, of course, another issue, as is the way they can then exert an effect on their knowledge and beliefs and attitudes.

As the examples above have shown, metaphors in journalism can function ideologically – whether they are used deliberately or not. Some news articles put the reader into the position of the passive spectator that does not have any influence on events happening in the world (Hellsten & Renvall, 1997). Consider the following example from the world news section (A7W-fragment01):

- (24) It did not help at all that upon arrival yesterday the royal couple instantly *touched base* in that comforting symbol of past British power, the Hong Kong and Shanghai Bank. (...) Britain still cannot decide when to *play* the mandarinate *game* of silence with the Chinese and when to *break* the *rules* (as Beijing does all the time). The ideal *tactics* should be a mixture of both (...)

The conventional metaphorical expressions describing competitive events (in italics) limit the reader’s role to that of, for example, a spectator at a sports event. Readers are watching the actions by politicians from a distance, giving them the impression that they have no influence on events. This may have consequences for their political interest and participation in societal issues. Thus, “metaphors can simultaneously make politics accessible to the (metaphorical) average citizen and induce acquiescence and passivity” (Thompson, 1996, p. 185).

Extensive use of topic-triggered metaphor, as is the case for the text on the TV Western and, to a lesser extent, the article on the Middle-Eastern conflict seems rare. These are the only two texts in the complete news sample displaying such abundant use. If this phenomenon occurs at all, it exists on a much more local level. In the sports report on a rugby match between a Welsh and a New Zealand team the journalist refers to Wales as the “Land of Song”. (“On and off the field the national game of the Land of Song is in a *discordant* mess” (A1N-fragment09)). This expression likely triggered the use of the adjective *discordant* whose basic meaning refers to music. Thus the expression

referring to the topic (Wales) presumably motivated a deliberate choice of a lexeme from the semantic field of music.

The words in the above examples are drawn from the same semantic field and thus contribute to the overall cohesion of the text. Such connectedness can also be achieved by using words that are connected only at a higher level of abstraction. Consider the following sports report on a soccer game (A8N-fragment19). At first sight, this text seems to be the prototypical example for an underlying SPORTS IS WAR metaphor (e.g. “they *held* their *line*”, “Oldham *struck*”, “Oldham took up the *attack* again”, “their *defence* had been found wanting”). However, there are numerous other expressions that do not necessarily share the same source domain but contribute to the overall theme of violence, as shown in the following paragraph:

- (25) The *predatory* Ritchie chested the ball down and *hammered* a volley past Lukic. Arsenal had no choice but to *attack* as soon as the second half began. A neat step-over by Rocastle sent Thomas hurtling in on goal but Rhodes moved sharply off his line to *smother* the *shot*. (...) Finally, with Arsenal *pressing* hard, he *clawed* away Quinn’s careful header from Thomas’s drag-back.

The soccer player is metaphorically compared to a wild animal (*predatory, clawed*). Since such behavior suggests violence, these expressions are compatible with words such as *attack* or *strike*. There are, however, other expressions that are less directly related to violence but still contribute to the overall emphasis on the physical action in the game. For instance, *hammer*, (“*hammer* a volley”) is metaphorically used because its basic sense describes working with tools. Hammering in a nail requires physical force, which makes the word fit in well with the present context that attempts to create a feeling of physical energy. The journalist employs a further toolkit metaphor: (...) “Henry, who *drilled* a slow shot (...)” *Smother*, through its basic meaning ‘to kill someone by covering their face until they stop breathing’, also fits in because smothering someone is a violent act as well. Further reference to aggressive behavior is made by using *pressing* as well as *beat* in “OLDHAM Athletic, who had never *beaten* a First Division side (...)”. The use of terms whose basic meaning draws, in a broad sense, on physical force, is interesting, since soccer itself is a game that can be physically violent. Nevertheless, sports is a different knowledge domain, which is why the above lexemes are metaphorically used. The metaphorical use of these terms emphasizes the physical involvement of the players.

It is difficult to argue that the journalist deliberately used all these words in a metaphorical way. Arguably, the journalist does portray the game as rough

and draws attention to this through the use of these metaphorical expressions. For example, *beat* in the opening paragraph (see above) of the article does not meet the criteria for deliberate metaphor laid out in Section 6.3. As the text progresses, however, the terms related to violence and physical energy given above may count as deliberate metaphors on a symbolic level. Whether they were all indeed intended as deliberate metaphors and whether they are all experienced as such is a different issue.

The above examples of deliberate metaphor may suggest that deliberate metaphor always comes in groups of two or more words that share the same semantic field. While repeated occurrence of the same source domain is likely to draw the reader's attention to the metaphorical mapping, more isolated uses may have the same effect, as can be seen in this excerpt on trams:

- (26) After all, Mancunians and visitors to the Manchester conurbation are going to have to look at these mechanical *millipedes* for well into the twenty-first century. (A3M-fragment02)

Trams are not conventionally referred to as millipedes. This usage makes the reader connect physical properties of millipedes (many feet) to physical properties of a trams (many wheels), a connection a reader would not naturally make.

To summarize, topic-triggered and extended metaphors are likely deliberately used. They act as cohesive devices and have the potential to grab the reader's attention and pique their interest. This is important in news writing because there is no direct contact between the sender of the message and the recipient, such as is the case in face-to-face conversation. The communicative purposes of those lexical patterns may differ, however, and are dependent on topic or goals of the journalist. They may seek to entertain or create humorous effects but they may also aim to persuade. Overall, extensive use of topic-triggered metaphor in news is rare. If it occurs then it is generally used more locally on single occasions without recurring in other parts of a text. I have also given examples from the news corpus that are not topic-triggered or part of extended mappings but are nevertheless used deliberately and draw the reader's attention.

Personification

While the metaphorical expressions discussed above grab readers' attention and contribute to their enjoyment of reading, there is another pattern typical of news writing that can have the opposite effect, namely to remain unnoticed.

The quantitative analysis in the previous chapter has revealed that metaphorically used verbs in news are unexpectedly prominent. I have suggested that this is at least in part due to the use of personification. The use of personification (see examples below) conceals the presence of the author and his or her views, creating a sense of objectivity (Caballero, 2003, p. 164) that is associated with newspaper writing.

- (27) Container group Tiphook yesterday *said* it was still confident (...). (A8U-fragment14)
- (28) NORCROS, the property, building materials and printing group, *saw* profits crash (...). (A8U-fragment14)

“(...) although journalists typically present a news account as an ‘objective’, ‘impartial’ translation of reality, it may instead be understood to be providing an ideological construction of contending truth claims about reality” (A. R. Anderson & Nicholson, 2005, p. 158). Alternatively, it may simply be used for efficient communication. News articles have strict space restrictions and information needs to be packed efficiently, which is reflected in the high use of noun phrases and prepositions. Personification may act as another such space-saving method, one which is easy on the reader conceptually but also reduces complexity on the linguistic level. For example, in “The US has *talked* of a genuine North American free trade zone (...)” (A7T-fragment01), *talked* is used metaphorically due to ‘possible personification’. This is because *talking* is a human activity that is, in the present context, attributed to an abstract entity (the US). The use of personification reduces complexity, in that actions of a number of different people as well as complex political and economic processes are attributed to the single agent, ‘the US’ (see Thompson, 1996, p. 188). This use of metaphor closely interacts with metonymy. It may thus be appealing to readers who “have learned to encounter and experience [their] world in media-generated, metonymic bits and pieces” (Chantrill & Mio, 1996). In this context the function of personification is to make the situation easier to grasp for the reader, but also to help the writer save space and express meaning clearly and concisely. Since the journalist cannot check with his or her readers whether they understand what they have read, introducing additional complexity is unfavorable.

These examples of ‘possible personification’ given above are slightly different from the deliberate metaphors discussed so far. Even though they may have been consciously selected as stylistic devices, they need not have been selected as metaphorical stylistic devices. In particular, they do not

necessarily aim at making the reader see the topic from another perspective and readers might be hard pressed to define such an alternative perspective. These are thus not deliberate metaphors in the sense previously discussed.

While ‘possible personification’ aims at clarity by simplifying, it does come with a “certain degree of vagueness” (Semino, 2008, p. 102). In the example above it is not clear who and how many people have been talking about a free trade zone or who is involved in the decision making and political and economic processes. While most uses of personification in news can be attributed to simplification for conceptual and textual reasons, some uses may be deliberately employed to exploit personifications for rhetorical reasons. For example, the journalist reporting on the state of the NHS, the British National Health system, chose to include direct quotes by the health secretary:

- (29) ‘I want to see a health service at *ease* with itself – *optimistic* and *confident* about its essential *work*. Health is something which touches every individual and family in the country’, she said. (AL5-fragment03)

The use of personification (in italics) in this utterance serves a persuasive function. Attributing human qualities to an abstract entity creates a sense of personal connection and emotional involvement. “Personification is persuasive because it evokes our attitudes, feelings and beliefs about people and applies them to our attitudes, feelings and beliefs about abstract political entities” (Charteris-Black, 2005, p. 41). According to Graesser, Mio, and Millis (1988, p. 151) personification is also powerful because the source of the message is authoritative (e.g. “The White House said (...)” instead of “A White House staff member said (...)”).

Strikingly, the journalist has chosen to quote the health secretary on multiple occasions when she made use of metaphorical language:

- (30) (...) she said the election result (...) had finally ‘*nailed* the lie’ about privatisation of health care.
- (31) ‘(...) An organisation that does not change *fossilises* (...)’
- (32) ‘It will always be the case that the *holder* of my office will need to *fight* the *corner* of the health service and there will always, inevitably, be more than we can do.’
- (33) (...) ‘*That* is a real *challenge*’, she said.

As Hellsten and Renvall (1997) note, politicians and public relations officials may consciously use metaphors with the aim of having the media take them over without editing. At the same time, journalists may also exploit such metaphors to convey their own stance, and in addition can always come up with their own metaphors.

Human-related adjectives attributed to non-human entities achieve a different effect in this article on the travel pages:

- (34) Water is everywhere: canals, streams, small *busy* rivers with charming names like the Boutonne, the Mignon and the Belle, and big *lazy* rivers like the Sevre Niortaise and the Charente. (AHC-fragment61)

They are not meant to persuade, disguise or simplify but rather create a poetic effect, resembling use of personification in literary texts (e.g. “a man’s voice; drawling and *lazy*” (CCW-fragment03), “*edgy* faces” (BPA-fragment14), “*uncompromising* soil” (C8T-fragment01)).

While personification in news may be used as deliberate stylistic devices as in the example above, they are most commonly employed to ensure efficient communication by reducing complexity. They enhance clarity and moreover save space. They help achieve desired objectivity but may at the same time have a persuasive effect on the readers.

Personal style

While general tendencies for metaphorical language use in news can be reported in quantitative terms, some phenomena may be typical of one text but not of another, which can only be revealed by qualitative analysis. For example, each newspaper employs numerous journalists, and while each of them may strive to adhere to what they believe to be appropriate writing for the news genre, each of them brings with them their own style of writing, including the extent and the way they make use of metaphorical language. Their interests and life experiences may shape their metaphor use (Kövecses, 2002b, p. 194). For example, one part of a journalist’s personal writing style is whether or not he or she signals metaphorical language by using quotation marks (AL5-fragment03).

- (35) The Government will also encourage more family doctors to hold budgets to ‘buy’ services for patients, (...).
- (36) The Conservative manifesto contained a commitment to increase, year by year, the level of ‘real resources’ committed to the NHS (...)

Furthermore, qualitative analysis of a business report (A7T-fragment01) has revealed that some authors like to play with sounds:

- (37) (...) a Northern American **b**lock **b**ased around the US-Canadian *free* trade area (...).
- (38) (...) America maintains a **s**trong **s**take in each forum (...).
- (39) (...) Mr. Bush threatened to veto the budget unless it *contained* real **c**uts.
- (40) (...) ministers are **p**repared to **p**ut political expediency *before* the interests of the industry (...).

In the examples above, metaphorically used words following each other display alliteration (marked in bold). Alliteration is also found for words next to each other of which only one is metaphorically used (see examples below).

- (41) The first, albeit *tentative, steps* (...) *display* an **a**stute **a**wareness (...).
- (42) (...) a seat at the **t**op **t**able *at* the European *Community*: a suggestion **r**udely rebuffed.

Boers and Stengers (2008) have found alliteration typical of idioms (e.g. why do we say “it takes two to tango” and not “it takes two to waltz?”), arguing that metaphorical idioms are partially phonologically motivated. As the above examples show, there may be tendencies for metaphorically used words to cluster together based on phonology, even in non-idiomatic language. However, while there may be tendencies to prefer such sound combinations even for non-idiomatic language, such preferences are likely to depend on the individual journalist’s style. They are likely not consciously selected but are preferred choices emerging during the writing process. Sound play may have also triggered the use of *light* in “Try to quench your thirst with a *light*, fresh white (...)” (A3C-fragment05). The article which was quoted above is the only one in the news corpus with such an abundant collection of alliteration of metaphorical expressions, which points to style differences between writers.

To summarize, the functions of metaphors in news texts are closely tied to the situational context in which news articles are embedded, such as production circumstances, participants involved, the setting, or the topics as well as communicative goals. Topic-triggered metaphors are particularly attention grabbing, as they highlight both the topic and the metaphorical basis

of the expressions involved. They may create humorous effects that make the recipient keep on reading but may also be used for rhetorical purposes and be subtly persuasive. Other patterns, such as repeated use of semantically related expressions, may have similar goals. At the same time, the use of metaphorical expressions in news texts has the conceptual function of reducing complexity of reported events. The use of personification is an example of such a reduction and at the same time aids effective, space saving communication. It may also be manipulative, in that it disguises the agents behind public actions. The choice of metaphorical expressions in news also depends on individual preferences by journalists and may be selected for stylistic reasons as well. The audience of newspapers is diverse with a wide range of interests and needs (Reah, 2002, p. 13). Therefore, news articles range in their communicative goals. They all inform about events that have been decided to be newsworthy but some may entertain, others may evaluate, persuade, or explain.

Table 6.2 summarizes the metaphors and patterns as well as their functions discussed in this chapter, opposing non-deliberate and deliberate use. Metaphor generally fulfills several functions at the same time. Depending on its form, conceptual structure and communicative function other functions may be added or may gain predominance. The empty cells merely indicate that these instances were not discussed in this chapter; it does not mean that they do not exist. Bracketed cells are unlikely to exist.

The wider context in which news is embedded is connected to the expectations people have about the genre of journalism. These expectations have an effect on the production of news articles on the part of the journalist, on the one hand, and the reception of news reports on the part of the reader on the other. This “genre knowledge” (Steen, in press-a) enables people to engage in discourse. “Cognitive genre representations facilitate such discourse aspects as co-operation with other language users, the selection and organisation of the content of messages, and the selection of the appropriate register” (Steen, 2002, p. 188). Genre knowledge encompasses communicative conventions (e.g. news report of daily newspaper versus academic paper), cognitive structures, opinions and values (e.g. news discourse directed at the everyday language user versus academic discourse directed at the expert) and linguistic register or style (e.g. language of newspaper reporting on administration versus language of administration) (cf. Steen, in press-a). The language user’s knowledge system thus includes several aspects of the news genre, such as its written nature, the lack of contact between the journalist and reader, headlines, or its informative character. Thus the use and the reception of metaphors will be influenced by the knowledge of the news genre. A

Table 6.2

Form, structure, patterns and functions of metaphor in news discourse

comm. function	metaphor form	concept. structure	patterns	other functions	
non-deliberate	met.	indir.	conv.	none, recurrence, clusters (semantically related terms), mixing, sound play, personification	conceptual, linguistic (fill lexical gaps), textual (cohesion, save space), linguistic (stylistic)
		[direct]			
	simile	direct	-	-	-
			-		
deliberate	met.	indir.	novel	topic-triggered, clusters (semantically related terms), extensions, personification	interpersonal (grab attention, raise interest, tie reader to text, humor, entertain, persuade), textual (cohesion), ideational (highlighting), conceptual, linguistic (word play, poetic effects)
			conv.		
	direct	direct	novel	-	conceptual
			[conv.]		
simile	direct	novel	-	conceptual, interpersonal	
-					

communicative analysis of the functions of metaphor in news discourse combined with a linguistic analysis as described in this and the previous chapter can pave the way for further data generation and analysis that looks at metaphor processing.

6.4 Conclusion

There is abundant research on metaphor in news articles, particularly on political press reports and financial news. Existing research gives the impression that journalistic language is full of creative, playful, attention-grabbing or manipulative metaphors. While such uses can be found in the newspaper, they appear less frequently in the news register in general than one might expect from past research.

While metaphor research in news discourse has increasingly relied on corpora, those are often restricted in focus, looking, e.g., at specific subsections of the paper or only at selected topics. Qualitative analysis, again, tends to sample a small number of texts or focuses on pre-selected conceptual metaphors and their corresponding linguistic expressions, and picks out a few interesting paragraphs. While this chapter did select specific examples from individual texts in order to describe patterns of metaphorical language use and their functions in news discourse, it has also emphasized that not all news language is full of creative language play and extended metaphors. In fact there are news articles that do not exhibit particularly striking metaphorical language but instead contain conventional metaphorical patterns typical of most language use. Thus a text that is high in metaphorical language use does not necessarily seem particularly metaphorical and may not use metaphor to achieve certain communicative goals. Whether or not a text seems metaphorical is mediated by whether or not metaphorical expressions are deliberately chosen as a discourse strategy (Steen, 2008, p. 223) with the goal of drawing the reader's attention to the source domain of an expression.

While the analysis has shown patterns of metaphorical language that can typically be expected in journalistic writing, it has also suggested that the bulk of metaphor is not deliberate and has therefore mainly linguistic and conceptual functions. In order to quantify these impressions, it will be necessary to identify deliberate metaphor by using a systematic procedure. This may be done by adding an additional step to MIP/MIPVU, as outlined in this chapter, which helps the analyst decide whether a unit is meant to change the reader's perspective on a referent or topic.

The notion of deliberate metaphor requires considering metaphor not only in language and thought but also in communication (Steen, 2008). I added this variable to the relation between metaphor in symbolic and behavioral analysis, visualized in Figure 6.1:

	language	thought	communication
<u>symbolic</u>	comparing and contrasting contextual and basic sense	labeling source and target domains, formulating mappings	determining change in perspective
	<i>form-meaning pairing</i>	<i>conceptual structure</i>	<i>form-meaning pairing/ conceptual structure</i>
<u>behavioral</u>	testing production/ reception of form-meaning pairing	testing production/ reception of conceptual structure	testing production/ reception of metaphor as rhetorical device

Figure 6.1 Symbolic and behavioral research across three dimensions

Shen and Balaban (1999) suggest that metaphorical coherence is typical of deliberate metaphor use. When metaphorical expressions are used non-deliberately, they are not elaborated on and can be connected to many different source domains spread across a text. I have shown that non-deliberate metaphorical expression can also cluster together. This phenomenon may be restricted to a few lexemes, possibly those related to direction and movement, and seems to have mainly textual functions. Adding further movement and direction terms in future analysis will draw a more precise picture of these first exploratory steps.

Deliberate metaphors can take on various different forms and different levels of conventionality. A signaled metaphor is usually intended to change the reader's perspective and make him or her view the topic through a different knowledge domain. This is not necessarily always the case, in particular with conventional idiomatic phrases. Though novel metaphors are always deliberate, one must be aware that there is a fuzzy line between conventional and novel uses: a metaphorical expression that has been identified as novel by our procedure might plausibly have been judged to be conventional – and thus *possibly* non-deliberate – using a different set of criteria. Similarly, while conventional expressions are mostly not deliberate, the examples given in this chapter have demonstrated that they are also employed deliberately on multiple occasions.

The deliberate or non-deliberate uses of metaphors display different functions that can be related to textual and situational characteristics of news texts. As news reporters do not have direct contact with their readers and there are no possibilities for immediate feedback and comprehension questions, the intended meaning has to be immediately clear. Metaphorical expressions taken from the same semantic field help establish cohesion across sentences and paragraphs, which in turn may ease readability and comprehensibility for the reader. Repeated presentation of complex topics in terms of more accessible source domains also reduces the risk of difficulties in understanding, serving an ideational function. Besides establishing textual cohesion and reducing complexity, metaphorical language in news texts is also used to tie the reader to the text by exploiting the attention-grabbing potential of metaphors. Some journalists like to play with words with the aim of achieving humorous effects. The use of these interpersonal functions of metaphor may make it more likely for the recipient to finish reading an article. Drawing and keeping the reader's attention is an important factor for journalists to consider, since newspapers are not, like literary texts, read from beginning to the end. The reader makes selections of articles, may read one article more closely, while only skimming

another. While news texts aim for objectivity, which surfaces, for instance, in the use of personification, some reports clearly transport opinions, exploiting the persuasive potential of metaphorical language.

While the above are general tendencies that can be found in newspaper writing, these phenomena are not typical for all the texts in our news corpus. There is individual variation depending on the topic and the section of the newspaper, but also due to individual writing styles of the journalists. I have shown that there are individual preferences as to how metaphor use is signaled or to the extent in which sound play is used. Overall, based on the definition of metaphor used in this thesis, most metaphor in news is not deliberate.

In the past, discussion of metaphorical language use in real language data has focused on the “nice” and “interesting” examples that demonstrate metaphorical creativity, novel metaphor usage, extended metaphor and the persuasive potential of metaphor. This can be enriching and insightful, as this chapter has shown. However it is important not to stop there. I have shown that metaphorical expressions in news do not always display such communicative functions but are often used simply because they are the most convenient way of expressing an intended meaning or because they contribute to cohesion and coherence, which is important for a written register such as news. It is therefore fruitful to pay attention to whether or not metaphors have been used deliberately. I have emphasized that a prerequisite for analyzing deliberate metaphor is its systematic identification using an explicit procedure such as IDeM. By such systematic analysis it will be possible to quantify deliberate metaphor and thus straighten the possibly skewed perspective we currently have about metaphor in news as creative, novel and striking.

Future research needs to quantify metaphorical language in general, as well as different types of metaphor (e.g. direct, indirect, implicit metaphor) and metaphor forms (metaphor, simile), but also needs to include metaphorical patterns into the analysis. The present dataset builds the groundwork for a fine-grained analysis, which could code e.g. patterns such as metaphor clusters, extensions, recurrences, topic-triggered metaphors, repeated elements and mixed metaphors. Only then will it be possible to give a precise picture of the frequency of these patterns that we find in news texts. This will lead not only to a more differentiated picture of metaphor in news compared to other registers but will also enrich any qualitative analysis that looks into functions of metaphorical language in news.

CHAPTER 7

Methodological exploration I: Wmatrix

7.1 Introduction

The previous chapters have focused mainly on linguistic metaphor. Before discussing what is typical of metaphorical language use in news compared to other registers, I have detailed how the annotated database has been built using a bottom-up approach (MIPVU). This approach identifies metaphorical expressions strictly on a linguistic level by comparing and contrasting their contextual and more basic senses as they are found in the corpus-based Macmillan dictionary. This relatively simple comparison of word senses has a clear advantage over decisions based on conceptual domains involved in a mapping. Conceptual analysis is a more challenging task. It involves deciding on suitable domain labels for a source and a target domain as well as on the appropriate level of generality at which a mapping is formulated (see Ritchie, 2003). Take the expression “Tina *defended* her thesis”, for example. Are the domain labels ARGUMENT and WAR, ARGUMENT and SPORTS, ARGUMENT and PHYSICAL VIOLENCE or ARGUMENT and PHYSICAL AGGRESSION? Conceptual domains are more difficult to demarcate (Warren, 2002, pp. 126-127 in Steen 2007, p. 180) than word meanings for which a dictionary can be consulted. The division between the linguistic approach of comparing word senses and the conceptual level of determining source and target domains put forward in this thesis has ensured clarity and reliability in data collection.

Steen (2007, p. 190) suggests that semantic fields, while not quite the same as conceptual domains, may be useful for the construction of domains involved in metaphorical mappings. “Lexical fields can provide an initial point of entry into (...) conceptual domains”. According to Kittay (1987, p. 288), they reflect conceptual schemas. A semantic field is a set of lexemes that have semantic relations to each other. Examples are hyponymy (*animal – dog*), antonymy (*high – low*) and synonymy (*strict – stern*). Each set of lexemes covers a certain conceptual domain, e.g. the conceptual domain ‘color’. The conceptual domain of ‘color’ is connected to the lexical field of color terms such as *red*, *blue*, *green*, etc. When two unrelated semantic fields are brought together, as is the case in metaphorical language, the semantic relationship between the lexemes remains and we can realize new connections between the fields (Kittay

& Lehrer, 1981, pp. 32-33, 59). “(...) a significant portion of a lexical field is transferred from one domain to another and imposes a structure on the recipient domain” (Kittay & Lehrer, 1981, p. 34).

There is thus a close relationship between semantic fields and lexical fields on the one hand (the linguistic level) and conceptual domains on the other (the conceptual level). This chapter bridges the linguistic analysis of the previous chapters and the conceptual analysis carried out in the next. It does so by a) checking whether there is a basis for a metaphorical mapping by comparing and contrasting different semantic fields a lexical unit may be part of (this parallels comparing and contrasting conceptual and basic senses) and by b) searching semantic fields of individual texts that may reflect underlying conceptual mappings.

For the purposes of semantic analysis I will use Wmatrix, a web interface for corpus analysis, which provides a tool for semantic annotation of running text. It was not designed for metaphor analysis, but it may nevertheless be useful to researchers who wish to identify metaphorical language on a conceptual level – as opposed to comparing senses in a dictionary, as is MIPVU practice. The reasoning is that the semantic fields the program automatically assigns to words of a text roughly correspond to metaphorical domains, as suggested by conceptual metaphor theory (Hardie et al., 2007). Even though conceptual domains are not quite the same as semantic domains, the semantic field annotation tool embedded in Wmatrix may be a tool that can assist finding metaphorical language use in texts.

The purpose of this chapter is primarily methodological. It explores the usability of the Wmatrix program for the identification of metaphorical language use in natural language data: can the metaphorical status of lexical units be determined by comparing and contrasting the semantic fields ascribed to a unit by the semantic annotation tool within the Wmatrix platform? I will address this question by taking a bottom-up approach to the data.

First, I will compare different semantic fields an individual lexical unit may be part of. If there is semantic tension between them, it may establish the basis for a metaphorical contrast. This parallels checking different word senses in a purely linguistic analysis via MIPVU. I will explore how this semantic approach parallels the identification of metaphor on a linguistic level. Moreover, I will examine the relation of a word's semantic fields to the fields of words in the immediate context. The aim is to check whether the fields of a metaphorically used word are distinct from those assigned to lexical units around it (Cameron, 2008, p. 198).

Second, I will also explore whether the tool can be used to determine metaphorical expressions, as well as their source domains, by searching for semantic fields that deviate from those fields that best describe the topic of a text. This is tested by taking a top-down approach to the data: I use the semantic annotation tool to establish the dominant target domains of the whole text and then examine semantic domains that stand out as different from those target domains and may thus qualify as potential source domains. This approach moves even more into conceptual analysis. It resembles a top-down approach taken by analysts who first determine underlying conceptual metaphors in a text and only then look for linguistic expressions that are consistent with the conceptual metaphors.

A tool that assists with semantic analysis may also be useful for metaphor identification. Since Wmatrix was not designed for metaphor identification or analysis, disagreements between MIPVU and a Wmatrix analysis are to be expected. Its usability for finding all metaphorical language use in a text has not yet been evaluated before, which is the goal of this chapter.

7.2 Tool

Wmatrix (Rayson, 2008) provides a web interface for corpus analysis. It contains the USAS (UCREL semantic analysis system) (Rayson, Archer, Piao, & McEnery, 2004), a framework that automatically annotates each lexical unit¹⁰ of a running text semantically. The system is built on a large semantic lexicon. Each item in this lexicon has a syntactic tag as well as one or multiple semantic tags assigned to it. The semantic tagset is categorized into 21 main semantic fields, which are further subdivided into 232 more fine-grained semantic labels (see Table 7.1). An example of a subdivision of the semantic field *government and public* (G) is given below the table.

The letters designate the semantic fields at their most general level. Added digits indicate subdivisions; the finer the subdivision, the more digits there are. The operators plus (+) and minus (-) indicate a positive or negative position on a semantic scale. The semantic groupings represent senses that “are related by virtue of their being connected at some level of generality with the same mental concept” (Archer et al., 2002, p. 1).

¹⁰ Though I use ‘word’ and ‘lexical unit’ interchangeably, note that a lexical unit, may consist of more than one word.

Table 7.1

Main semantic categories in the USAS tagset (Archer, Wilson, & Rayson, 2002, p. 2)

A general and abstract terms	B the body and the individual	C arts and crafts	E emotion
F food and farming	G government and public	H architecture, housing and the home	I money and commerce in industry
K entertainment, sports and games	L life and living things	M movement, location, travel and transport	N numbers and measurement
O substances, materials, objects and equipment	P education	Q language and communication	S social actions, states and processes
T Time	W world and environment	X psychological actions, states and processes	Y science and technology
Z names and grammar			

- G1 Government and Politics
 - G1.1 Government
 - G1.1- Non-governmental
 - G1.2 Politics
 - G1.2- Non-political
- G2 Crime, law and order
 - G2.1 Law and order
 - G2.1+ Lawful
 - G2.1- Crime
 - G2.2 General ethics
 - G2.2+ Ethical
 - G2.2- Unethical
- G3 Warfare, defence and the army; weapons
 - G3- Anti-war

The original tagset was loosely based on the *Longman Lexicon of Contemporary English* (McArthur, 1981) but has since been revised, arriving at the above 21 major discourse fields (Archer et al., 2002, p. 2).

When a text is annotated by USAS, the output is a list in which each lexical unit is matched with one or more semantic tags, as shown in the three examples below (AHC-fragment60).

- | | | | |
|-----|-------|-------------|------------------------|
| (1) | PPIS1 | I | Z8mf |
| | VVD | found | A10+ X2.1 X6+ |
| | PPH1 | it | Z8 |
| (2) | NP1 | Europe | Z2 |
| | GE | 's | Z5 |
| | JJT | largest | N3.2+++ N5+++ A11.1+++ |
| | JJ | man-made | O4.1 |
| | NN1 | lake | W3/M4 |
| (3) | VVD | leaned | M1[i22.2.1 M6 S5+ |
| | RP | over | M1[i22.2.2 T2- M6 |
| | APPGE | their | Z8 |
| | JJ | leafless | L3 |
| | NN2 | reflections | X3.1 A2.2/A10+ X2.1 |

The first column lists the part-of-speech tags (POS-tags), the second column displays the words of the text (AHC-fragment60) and the final column indicates the USAS tags for each lexical unit. Multiple semantic tags for a word are ordered according to likelihood, placing the most likely tag in initial position. The ranking is derived by a combination of factors such as, for example, the POS tag of the word (e.g. if *spring* has a noun tag, it filters out the “jump” sense), frequency (e.g. *green* as a color is more likely than *green* as in inexperienced), the context a word is likely to occur in (e.g. *account of* followed and preceded by a noun phrase most likely refers to narration), or the surrounding words (for more details on methods of disambiguation see (for more details on methods of disambiguation see Rayson, 2003, pp. 67-68; Rayson et al., 2004). Tags divided by a slash indicate double membership, which means that an item is part of more than one category at the same time. This category represents one sense and not two different meanings. A left square bracket followed by the letter *i* points to a multiword unit. A plus or a minus following the numbers specifies antonymity of conceptual classifications. The double and triple use of these operators expresses comparatives and superlatives respectively. The letters, *m*, *f* or *n* designate male, female or neuter (Archer et al., 2002, p. 1). The codes can be checked against a document provided on the Wmatrix platform that gives the labels for the

semantic fields for each of the codes (e.g. Z8 stands for “pronouns” and A10+ stands for “open; finding, showing”).

Any text in plain text format can be uploaded into the system for analysis. A tag wizard automatically assigns POS tags (by CLAWS – the Constituent Likelihood Automatic Word-tagging System) and semantic tags (by USAS) to each word. The text can therefore be analyzed on the word level, the POS level or the semantic level (USAS tags) (see Figure 7.1).

For the present analysis the USAS tags are of principal interest because they describe the semantic fields a word belongs to, which may correspond to conceptual domains (Hardie et al., 2007). Their close inspection may therefore be useful for metaphor identification purposes. The output further produces frequency lists that can be looked at by word, POS tag or USAS tags. Moreover, the program produces concordances and allows for comparison to a reference corpus (a normative corpus such as various samples from the BNC or any other uploaded text) through the ‘keyword analysis’. The comparison procedure produces those semantic categories that are significantly more or less frequently used in the analyzed text than in a reference corpus. Those fields are thus a good description of the prominent topics of the text. Any semantic fields that stand out as incongruent with those topics may point to their use as source domains.

The Wmatrix platform has not been designed for metaphor analysis. Its semantic field tagger may, however, be useful to the metaphor researcher. While the program assigns semantic fields to each lexical unit automatically, decisions as to whether they may form the basis of a metaphorical mapping need to be made by the analyst.



Figure 7.1 Analysis options for tagged texts within Wmatrix

7.3 Analysis

7.3.1 Bottom-up analysis

Just as a bottom-up linguistic analysis is initially not concerned with conceptual metaphor that may underlie a text but focuses on the identification of metaphorical expressions, a bottom-up analysis with Wmatrix does not consider the main semantic domain(s) of a text. Instead, paralleling the MIPVU analysis, which checks the relation between word senses, it concentrates on the relations between the semantic tags the programs has assigned to each lexical unit. The analysis assesses the usability of the semantic annotation tool for metaphor identification and draws comparisons to the MIPVU analysis.

The semantic tags can be analyzed in a horizontal and in a vertical fashion (Figure 7.2). A horizontal analysis looks at the relation between the semantic tags of each individual word. As has been explained above, a word may be assigned multiple semantic tags. The semantic tags can then be compared and contrasted with each other in order to check whether there may be a basis for a conceptual transfer between the semantic fields.

An analysis from a vertical perspective compares the variation of semantic domains between words in close vicinity. It therefore looks not only at the semantic tags for metaphorically related words but also at those of surrounding lexical items. In other words, it checks whether a word's semantic domain stands out as incongruous compared to domains of words around it. Great domain variation among neighboring words may confirm decisions on the metaphorical status of a word.

The present analysis first looks at the data horizontally (Section 7.3.1.1). This analysis examines whether the assigned semantic tags include two distinct

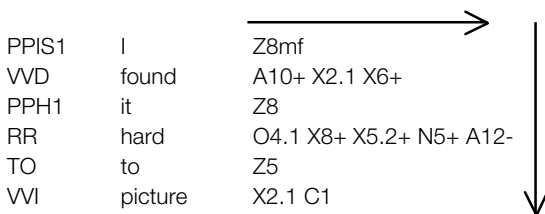


Figure 7.2 Horizontal and vertical analysis of semantic tags. In a horizontal analysis, the analyst compares tags that are next to each other. In a vertical analysis, tags between different lines are compared.

domains that may indicate a metaphorical tension and whether the tags correspond to the contextual and the basic sense of a word. This procedure aims to make comparisons to the decisions on the metaphorical status of a word using the MIPVU procedure. The second Section (7.3.1.2) examines semantic relations between neighboring words, which may point to metaphorical usage of words with incongruous semantic domains.

7.3.1.1 Horizontal analysis

The USAS system tags each word with one or several semantic tags. The analyst can then check whether the semantic tags assigned to a word correspond to its contextual and basic sense as defined in the Macmillan dictionary and whether they belong to two distinct domains.

7.3.1.1.1 Semantic tags and contextual and basic senses

The comparability of the MIPVU analysis and the Wmatrix analysis in terms of sense comparison in dictionaries versus semantic tag comparison generated by the semantic annotation tool was checked in a sample of lexical units in an excerpt from the BNC-Baby fragment A8U-fragment14, a news report in the commerce section. The excerpt is printed below and all metaphorically used words are in italics. For convenient reading, in the discussion, tag abbreviations (e.g. O2) will not be listed unless necessary for clarification; instead tag descriptions (e.g. “objects generally”) alone will be given.

- (1) Container *group* Tiphook yesterday *said* it was still *confident* of *winning* its *joint* £643 million *bid* for Sea Containers even though the *battle* has *swung* *towards* James Sherwood’s ferries-to-trailers combine. The offer *from* the Anglo-Swedish consortium *formed* by Tiphook and Stena AB is the *subject* of an appeal *in* the Bermudan courts which is *aimed at overturning* an earlier ruling *allowing* Seaco to *proceed* with its *poison pill* defence. (A8U-fragment14)

The excerpt contains a number of cases that are found to be clearly not metaphorical using the Wmatrix tool for metaphor identification. Examples of clear non-metaphorically used cases are *container* and *yesterday*. They are assigned only one semantic tag, which is representative of both the contextual and the basic sense (“objects generally” and “time: past” respectively). This concurs with the manual MIPVU analysis; the presence of only one tag means that a comparison to a different tag is not possible just as the presence of only one sense in the dictionary does not allow for comparing it to another sense. The

words *container* and *yesterday* are therefore not metaphorically used. In this sense, the Wmatrix analysis thus reflects manual MIPVU analysis.

A number of metaphorical uses of lexical units can also be successfully identified. The unit *aimed* is an example. It is assigned two different tags – “wanted” and “location and direction”. *Aimed* is used metaphorically because of the contrast between the tags “location and direction” (source domain) and “wanted” (target domain). The first tag corresponds to the word’s basic sense ‘to point a gun or an object you are throwing at something you want to hit’. The second tag, “wanted”, corresponds to the dictionary sense ‘to intend or hope to achieve something.’ As with the dictionary-tags that can be compared, contrasted and understood in comparison with each other, the two semantic fields indicating a concrete and an abstract domain form the basis for a conceptual mapping. The MIPVU and the Wmatrix analysis of *aimed* are thus comparable. As with the analysis by MIPVU, where there is an opposition between senses in the dictionaries, there is semantic tension between the tags. While Wmatrix verifies that there is a contrast between two semantic domains, it does not verify whether they can be understood in comparison. This is a task left to the analyst. This is also the case when MIPVU employs the dictionary.

The following examples are less straightforward cases that needed group discussion when applying MIPVU. I have checked their treatment within Wmatrix. The tagset for *winning*, for example, reflects the difficulties analysts faced when deciding on its basic meaning using MIPVU. The first two labels both indicate double category membership (two tags separated by a slash). The first semantic field includes “success” and “competition” (X9.2+/S7.3). The second tag comprises “success” and “warfare, defence and the army; weapons” (X9.2+/G3). The first slash label (success/competition) reflects the contextual sense (‘to succeed in getting something that you want because of hard work or ability’) most closely. Unlike the machine-generated analysis, the MIPVU method, however, opposes *success* (‘to succeed in getting something you want because of hard work or ability’) and *competition* (‘to defeat everyone else by being the best or by finishing first in a competition’). Group discussion resulted in judging this contrast as sufficiently distinct and thus *winning* was marked as metaphorically used. An analyst following the USAS tags would reach a different decision. The double membership tagging indicates that the contrast between the two senses in the dictionaries is not strong and suggests that it would also be plausible to take all senses as equally basic. This would render *winning* not metaphorically used.

A case for which the Wmatrix system supports the MIPVU-based decisions to mark a word as literally used is the lexeme *creating* (‘*creating* a

Palestinian state”). According to MIPVU it is not metaphorically used because Macmillan and Longman conflate concrete and abstract senses (‘to make something new or original that did not exist before – e.g. file, job, problems’). Wmatrix supports this decision. The semantic labels assigned to *creating* all refer to general actions and processes, (“general actions/making”, “cause & effect/connection”, “emotional actions, states and processes”). Thus there is no basis for a metaphorical mapping between domains.

Overall, the identification of metaphorical language using Wmatrix parallels the decisions made when applying the MIPVU protocol. Alternative suggestions may surface for cases that necessitated group discussion. This applies to cases for which analysts using MIPVU were unsure whether or not to treat two senses as sufficiently distinct. Wmatrix tends to suggest not making distinctions for these cases. While MIPVU uses the code WIDLII for cases on which analysts cannot agree in discussion, it does aim at minimizing ambiguous cases and tries to assign lexical units to either a metaphorical or a non-metaphorical category. It is thus likely that a horizontal Wmatrix analysis leads to a slightly lower number of metaphorically used words than using MIPVU.

In principle, comparing and contrasting semantic fields as assigned by a computational tool can identify metaphorical language use, as has been demonstrated above. While metaphor identification via semantic domains is possible, Wmatrix has only limited usability for metaphor identification for large amounts of data, as will be detailed in the next subsection.

7.3.1.1.2 *Limitations of using Wmatrix in bottom-up analysis*

As shown above, a horizontal analysis of a word’s semantic tags as assigned by USAS within the Wmatrix web interface can be useful. There are, however, limitations to the program’s applicability to horizontal tag analysis. For some lexical items there are problems when trying to compare and contrast lexical fields or when matching appropriate contextual and basic senses to the semantic fields assigned by USAS. These problems pertain mainly to the following issues:

- (a) assignment of prepositions to the grammatical bin,
- (b) conflation of word classes,
- (c) tagging of multiword units that differs from MIPVU practice
- (d) fairly broad and imprecise labels of the semantic categories.

The final part of this subsection will highlight each of these problems using examples mainly from the first two sentences of the BNC-Baby news fragment A8U-fragment14 discussed earlier.

- (2) Container *group* Tiphook yesterday *said* it was still *confident* of *winning* its *joint* £ 643 million *bid* for Sea Containers even though the *battle* has *swung* *towards* James Sherwood's ferries-to-trailers combine. The offer *from* the Anglo-Swedish consortium *formed* by Tiphook and Stena AB is the *subject* of an appeal *in* the Bermudan courts which is *aimed at overturning* an earlier ruling *allowing* Seaco to *proceed with* its *poison pill* defence. (A8U-fragment14)

(a) Items assigned to the “grammatical bin” cannot be analyzed. This is clearly a problem for prepositions, which are frequently metaphorically used as a word class but in Wmatrix receive this tag. For instance, according to the MIPVU procedure the item *towards* in “the battle has swung *towards* Sherwood's ferries-to-trailers combine” has to be marked as metaphorically used because of the opposition of the contextual sense and the more basic sense ‘in a particular direction someone or something is going, facing, or looking’. USAS, however, assigns the tag “grammatical bin” to the lexeme *towards*. *Towards* (and all other prepositions) must therefore be disregarded for metaphor identification with Wmatrix. This is a significant drawback.

(b) While MIPVU distinguishes between word classes, the semantic tagger is only sensitive to word class for the first tag. For instance, the adverb *still* in “Tiphook yesterday *said* it was *still* confident” is given the tags “time: beginning”, “discourse bin” and “calm”. While a look at these tags may suggest “calm” as a candidate basic semantic field, the analyst must exercise caution. The first tag refers to the adverb, whereas the third belongs to the adjective meaning of the word. The two fields therefore cannot be contrasted.

(c) MIPVU takes phrasal verbs as one unit, whereas each constituent of prepositional verbs is analyzed separately. The Wmatrix system recognizes phrasal verbs as a multiword unit, but it also tends to take prepositional verbs as one unit. In general, the system has a tendency to group words into larger units than MIPVU. Examples of single units within Wmatrix are *in fact*, *civil disobedience* or *of their own*. This changes the units of analysis in comparison with MIPVU. For the horizontal tag analysis this is not problematic because each component word also receives its own tagset and the analyst can therefore decide on his or her own whether or not to analyze each component separately. For instance, *in fact* was assigned the multiword tag “evaluation/true” but *in* and *fact* additionally get their own separate tags (*in*: “grammatical bin”; *fact*: “evaluation/true” and “knowledge”). It does pose a

problem for a top-down Wmatrix analysis. As will become clear in Section 7.3.2., a top-down approach does not allow for individual treatment of multiword components because it only considers first tags. For multiword units the first tag is the multiword tag and not the tags of individual words that make up the multiword unit.

(d) A further problem is that some semantic categories are very broad. Consider the metaphorically used lexical unit *add* in the fragment “it would *add* another necessary touch” (A9J-fragment01). It is metaphorically used because the contextual sense ‘give something an extra quality’ can be understood in comparison with the more basic sense ‘to put something with another thing or group of things’. The semantic tagger assigned the tags “quantities: many, much/modify, change”, “mathematics” and “inclusion”. They are too vague to make semantic field analysis useful for metaphor identification: none of them is a sufficiently precise match for the basic sense and the contextual sense. The first and the third tag roughly cover the basic sense but are so broad that they are not limited to concrete things only. Comparing and contrasting semantic field labels is therefore not useful because there are not two distinct semantic field labels that would form the basis for a metaphorical mapping.

Even though Wmatrix has not been designed for metaphor identification, comparing and contrasting the semantic field labels assigned to words by the semantic tagger can hint at their metaphorical use. While in MIPVU sense descriptions are compared and contrasted, in Wmatrix semantic fields are checked for semantic tensions. Its application to large datasets is limited for the following reasons: its occasionally vague/general semantic field labels, errors in assigning contextually appropriate labels, the exclusion of prepositions for semantic tagging, the fact that word class is only taken into account for the first tag, and the, at times, undesirably large units of analysis. While Wmatrix partly automatizes metaphor identification in the sense that it automatically assigns semantic fields to each lexical unit, it is still left to the analyst to select appropriate source and target fields and to decide on whether there is a metaphorical connection between them. The present analysis has shown, however, that only an adapted version of the program may be useful to the metaphor analyst.

7.3.1.2 Vertical analysis

The cognitive linguistic view of metaphor entails that metaphorically used words in discourse disrupt semantic coherence by introducing an incongruous conceptual domain. Metaphorical language use may thus not only be identified

by examining a lexical item's semantic domains but also by comparing its tags to tags assigned to lexical units in close vicinity. If a metaphorically used expression disrupts the semantic coherence of a text, the semantic shift should be visible in the behavior of semantic tags as assigned by the semantic tagger of Wmatrix. In a vertical analysis (see Table 7.2), I look at the semantic tags of a verb in relation to the tags of words around it and examine whether its semantic fields stand out.

More specifically, I examine the conceptual structure of a clause by looking at its semantic frame. A frame is

any system of concepts related in a such way that to understand any one of them you have to understand the whole structure in which it fits; when one of the things of such a structure is introduced into a text, or into a conversation, all of the others are automatically made available (Fillmore 2006: 373).

I use FrameNet, a lexical database built using frame semantics and corpus data (Ruppenhofer, Ellsworth, Petruck, Johnson, & Scheffczyk, 2006), as a tool to establish the semantic frame for the verb of a clause. I then examine the semantic tags of the words corresponding to the frame elements as to whether they are in line with the semantics suggested by the frame. If they are not, this may point to metaphorical usage of the verb. The semantic tags of other lexemes in the phrase that do not correspond to the main frame elements will not be considered.

This approach does not work equally well for each lexical unit because of the limitations of Wmatrix for metaphor identification discussed above. For example, not all of the tags adequately capture a word's contextual or basic sense, the word class may not be appropriately reflected in each tag of the tagset and contextual and/or basic meanings may not be represented by any of the semantic tags. As an additional inconvenience, the program lists semantic fields that do not correspond to contextual and basic senses, and which are irrelevant for present purposes. This makes it more difficult to spot lexical field deviation and necessitates close analysis of the tags in order to determine those relevant for the specific context. The following example illustrates a vertical approach for a case where the limitations of Wmatrix do not pose any problems.

Lies in “(...) its [the Declaration of Independence] significance *lies* in its double message (...)” (A9J-fragment01) is metaphorically used since its basic meaning ‘to be in a position in which your body is flat on a surface such as the floor or a bed’ contrasts with the contextual meaning ‘used for talking about

things such as plans, ideas, and qualities and what they consist of. The basic sense corresponds to the semantic tag “location and direction”; the contextual sense is expressed by the tag “existing”. Table 7.2 lists the excerpt (left column) with corresponding tags for each of the words on their right. The analyzed word is in boldface. Its semantic fields that may be involved in a metaphorical mapping are also in boldface. The field serving as a source domain, in addition, is also in italics. Elements of the frame and their relevant contextual meanings are underlined.

The semantic frame of *lie* in its basic meaning as given by FrameNet is “being_located” – “a Theme is in a stable position within a Location”. The Theme is a physical object, “an entity which is at a particular Location”. The location is “a salient entity that the Theme is located with respect to”. The Theme in this phrase is *significance*. As the tag “important” indicates, however, this is not a physical object, and therefore not in line with the semantics of the frame evoked by the basic meaning of the verb *lies*. The location, which the frame suggests as concrete, is abstract in this case (*message*). The target domain of the two crucial arguments of the clause is abstract, which contrasts with the frame suggested by the verb, and thus suggests metaphorical usage.

The vertical frame-semantic analysis as illustrated in this section does not work for all phrases because of the limitations of Wmatrix discussed in the previous section. It does, however, show that metaphorical language use involves a shift in semantic domains away from the semantic domain of the target topic, as the cognitive linguistic definition of metaphor suggests. A metaphorical expression stands out as alien against the context because its

Table 7.2

Excerpt of A9J-fragment01

text	tag code	tag description
its		
<u>significance</u>	A11.1+	<u>Important</u>
lies	A5.2-	Evaluation: false
	M1	Moving, coming and going
	T2++	Time: beginning
	M6	Location and direction
	A3+	Existing
in		
its		
double	N5+	Quantities: many, much
<u>message</u>	Q1.1	<u>Linguistic actions, states and processes; communication</u>
	Q1.3/Y2	Telecommunications/information technology and computing

semantic fields do not semantically fit in with the tags assigned for the contextual meanings of words making up the frame.

In summary, comparing and contrasting semantic fields assigned to individual words by the semantic tagger of Wmatrix parallels comparing and contrasting contextual and basic senses in dictionaries. While Wmatrix has not been designed for metaphor identification and analysis, analyzing semantic fields can also point to a word's metaphorical use. It could be used as an additional tool to assist decision-making in difficult cases encountered when applying MIPVU, and therefore has the potential of reducing the already low number of ambiguous cases in news texts. Due to its limitations it is currently less useful for analyzing large amounts of data.

Metaphorically used words can be identified by approaching the data in either a horizontal or a vertical perspective. A horizontal perspective looks at the USAS tags of each individual word, aligning corresponding basic and contextual meanings to the semantic fields assigned by the annotation tool. A vertical view establishes the frame evoked by a verb and checks whether the frame elements are semantically coherent with the description of the frame.

The usability is restricted by the limitations of Wmatrix for metaphor identification discussed in this chapter, but at the same this shows that there is potential to further develop the tool to fit metaphor identification needs. For applicability to all kinds of words and data in any context, the tagging system of Wmatrix would need to be altered (e.g. to incorporate more fine-grained descriptions of semantic fields) in order to accommodate the needs of metaphor analysis. Exploring this tool has shown that there is potential for such further development, which would also be a step further towards automated metaphor annotation. Currently, only a purpose-built protocol such as MIPVU, which is based on comparing and contrasting contextual and basic word senses in the dictionary, provides the desired reliability for metaphor identification purposes.

7.3.2 Top-down analysis

A bottom-up metaphor identification procedure such as MIPVU is exclusively interested in identifying linguistic – not conceptual – metaphor. Only at a later stage are conceptual metaphors formulated (for a possible approach see Chapter 8). A bottom-up semantic analysis as presented in the previous section also focuses on the identification of metaphorical expressions and does not look at semantic domains in reference to the text as a whole. Top down

approaches determine conceptual metaphors first and only then look for linguistic evidence. The following section explores the applicability of Wmatrix to a top-down approach: is the tool useful for finding metaphorical expressions, as well as their source domains, by searching for semantic fields that deviate from those fields that best describe the topic of a text? A top-down analysis within Wmatrix starts out from the text's overall semantic content. It tries to detect semantic domains that either deviate from the overall semantic context of the text, or that may be likely source domain candidates due to their concreteness, or that may resemble well-established source domains in the cognitive linguistic literature. Searching for deviant fields may be a quick way for the analyst to spot likely source domains. The lexical fields of these source domains are then likely metaphorically used and can subsequently be examined for metaphorical language use.

In order to retrieve semantic domains that describe a text, Wmatrix offers the so-called 'key analysis'. Such an analysis compares an uploaded text to a reference corpus (e.g. subcorpora of the BNC or any other uploaded text). Since newspaper texts belong to the written registers, for the present purposes the BNC-Sampler Written is selected as a reference corpus. The BNC-Sampler Written, a sub-corpus from the BNC, is a collection of one million words from different registers. A comparison of a selected text to this corpus yields the text's most salient semantic fields. This gives a good indication of the overall content and the most prominent topics of the text. Table 7.3 shows the output (top five semantic domains only) of a key analysis for the world news texts on the Palestinian-Israeli conflict (A9J-fragment01).

Wmatrix ranks the fields according to their Log-Likelihood value (LL), which expresses the degree of deviation of the examined text from the average of the reference corpus. I use 95% confidence, which is a Log-Likelihood value of 3.84, as a cut-off point for statistical significance. The column "item" lists the semantic field code (e.g. G1.1). Its corresponding tag description is listed in the column "semantic category" far right (e.g. Government). O1 states the observed frequency of the five most salient semantic domains in the analyzed text. The observed frequencies in the reference corpus (BNC Sampler-Written) are listed in the column O2. The + indicates an overuse in O1 (analyzed text) relative to O2 (reference corpus). Underuse is signaled by a -. Note that source domain candidates can also be found – and indeed often are – below the Log-Likelihood threshold, particularly because those items are less descriptive of the text. Due to the great domain variation in that part of the list, however, it is difficult to determine potential source domains based on

Table 7.3
Output of key analysis (top five semantic fields)

List	Broad list	Concordance	Item	O1	O2	LL	Semantic category
List	Broad list	Concordance	G1.1	32	3542 +	59.74	Government
List	Broad list	Concordance	G3	26	3152 +	44.67	Warfare, defence & the army; weapons
List	Broad list	Concordance	Z99	8	22165 -	29.23	Unmatched
List	Broad list	Concordance	Z1	4	16434 -	28.00	Personal names
List	Broad list	Concordance	M7	28	5888 +	25.07	Places

deviant semantic fields. For simplicity, I will therefore only consider the significantly overused semantic fields in my analysis.

The Wmatrix web interface can also produce a list of words for each semantic category (list) and concordances (concordance) of the semantic category output. The semantic categories only include words that have the relevant semantic tag occurring in the first position in the taglist. For instance, the semantic field “government” produces concordances of the words *state*, *authority*, *government*, *state-*, *council*, *summoning*, *naturalise*, *authorities*, *apolitical* and *officials*, since they all have the semantic tag “government” (G1.1) in first position. The word *cabinet*, however, which also fits this category, is not listed because its first tag is “furniture and household fittings” (H5) with G1.1 listed as a second tag. In order to include words in the analysis that carry a semantic tag regardless of its position in the taglist, the researcher needs to perform a so-called ‘broad sweep’ (it can be accessed via ‘broad list’ – see Table 7.3). This search function, a feature resulting from research by Hardie et al. (2007) in order to facilitate metaphor analysis by Wmatrix, finds all items containing the tag G1.1. – regardless of its position in the tagset. More details on this feature will be given further below.

The following sections explore the potential of the Wmatrix system as a tool for finding source domain candidates. This resembles the approach of an analyst who presumes specific conceptual metaphors for a text and then tries to find linguistic expressions that match these metaphors: in order to find semantic fields that stand out from semantic fields describing the target domain, it is necessary to first skim the text in order to determine its topic. The analyst then looks at the semantic field labels produced by the key domain analysis and searches for semantic fields of the text that may reflect underlying conceptual mappings (this resembles searching for conceptual metaphors). As

a final step he or she can collect linguistic examples by checking concordances for these semantic fields (this resembles searching for linguistic evidence for the conceptual metaphors).

In order to demonstrate how this procedure works, I will first identify source domain candidates among the semantic fields produced by the ‘key analysis’. Since my data has already been coded for metaphorical language use, I can then check whether the concordances of suspected source domain fields indeed function as such, i.e. mainly contain metaphorically used expressions. Obviously a researcher using Wmatrix as an assisting tool for identifying likely source domains will not work with an already annotated corpus. Instead, they would use the concordances as a way to expedite the application of a metaphor identification procedure, either an intuition-based one or a more rigorous method like MIPVU. The analyst would preselect semantic fields that are likely source domain candidates and then check the lexical units that appear in the concordance for their metaphorical status. This may be a fruitful approach for quickly identifying metaphorical expressions from a number of prominent fields that were detected as likely source domains. For present purposes, the concordances are used to check whether semantic fields have been successfully picked out as source domain candidates.

As will become clear in the discussion, this top-down approach does not work equally well for every type of metaphor and source domain. The first text I will discuss includes an extended indirect metaphor, i.e. multiple expressions that belong to the same source domain (Semino, 2008, pp. 25-26, 44). The second one contains a direct comparison between two different domains that extends over a longer stretch of text.

7.3.2.1 Case study 1: Text with extended metaphor

The text I analyze in this section is a world news article from *The Guardian* (A9J-fragment01) on the Palestinian-Israeli conflict, which has been the subject of earlier discussion. A key domain analysis yields the semantic fields that are significantly more frequent (LogLikelihood value above 3.84) in this news article than in the reference corpus ‘BNC-Baby Written’ and thus are a good reflection of the main topics of the text (Table 7.4). The numbers of metaphor-related words (M) refer to metaphorical expressions as identified by MIPVU. Potential source domain candidates, i.e. those that have concrete field labels, are well-known source domains in the cognitive linguistic literature or obviously deviate from the target domain topics are marked in grey. Not all of them will be discussed in detail.

I examined each of the domains listed in Table 7.4 as to whether it is representative of the overall content of the text and therefore corresponds to the target domain of the text, or whether it is somehow deviant. Source domains may also be detected by searching for very concrete semantic field labels or labels that resemble a source domain that is well-known from the cognitive linguistic literature. These may point to its use as a source domain. In

Table 7.4

Overused semantic fields of A9J-fragment01 in reference to the BNC-Sampler Written

case	tokens	LL	semantic category	M	%M
1	32	59.74	Government	2	0.06
2	26	44.67	Warfare, defence and the army; weapons	2	0.08
3	28	25.07	Places	3	0.11
4	4	23.73	Anti-war	1	0.25
5	9	20.90	Not part of a group	0	0.00
6	38	20.69	Likely	2	0.05
7	4	18.74	Alive	1	0.25
8	22	16.16	Wanted	6	0.27
9	11	15.82	Residence	2	0.18
10	22	13.34	Belonging to a group	3	0.14
11	1	12.95	Being	0	0.00
12	12	10.39	Architecture, houses and buildings	11	0.92
13	38	8.92	Geographical names	1	0.03
14	6	8.45	Hindering	4	0.67
15	2	8.11	Quantities: little	1	0.50
16	32	7.56	General actions, making	17	0.53
17	15	7.10	Quantities: many/much	4	0.27
18	11	6.71	People	0	0.00
19	12	6.39	Work and employment: Generally	5	0.42
20	5	6.29	Damaging and destroying	3	0.60
21	2	5.95	Lawful	0	0.00
22	9	5.28	Law and order	0	0.00
23	4	4.39	No constraint	4	1.00
24	13	4.23	Giving	5	0.38
25	16	4.12	Entire; maximum	3	0.19
26	4	4.00	Evaluation: True	2	0.50
27	9	3.97	Time: Beginning	1	0.11

Note. "M" stands for metaphor-related words, "%M" means the percentage of metaphor-related words out of all tokens in a category. Domains that are potential candidates for source domains are marked in gray. Categories containing more than 50% metaphorical expressions are printed in bold

order to make these judgments, an analyst needs to have a general idea of what the text is about. Reading the headline and skimming the text should suffice.

I will discuss a selection of semantic fields from Table 7.4 to illustrate this top-down approach for finding figurative language. The first category, “government”, is representative of the overall semantic content of this newspaper article – a political text about the Intifada and the vision of creating a Palestinian state. “Anti-war” and “alive” (as opposed to “warfare”), “not part of a group” (the wish for independence) and further down the list “geographical names” (e.g. *Israel*, *Palestine*, *Israelis*, *Palestinians*), “people”, “lawful” and “law and order” also reflect the text’s semantic content.

One might expect that the second semantic field, “warfare, defence and the army, weapons”, acts as a source domain, since the source domain WAR is commonly cited in the cognitive linguistic literature. Knowing that the text is about the conflict between Israelis and Palestinians, however, the high frequency of this semantic domain points towards literal usage. I checked the concordances to verify this impression. Indeed, only two out of 26 occurrences (*minefield* and *defuse*) have been identified as metaphorically used by MIPVU. Examples of the many non-metaphorical uses include *Intifada*, *militarily* (“(...) independent areas, if not *militarily*, then at least psychologically (...)), *shooting*, *army* (“raiding *army* units, *shooting*, killing (...)), and *bullets* (“live *bullets*”). The same reasoning works for the third domain, “places”. Even though the next term on the list, “places”, suggests concreteness and may generally serve as a source domain, most uses in this text are literal and refer to actual places in Palestine (e.g. *villages*, *territories*, *camps*, *territories* etc.).

The abovementioned fields reflect the topic of the text but the semantic field “architecture, houses and buildings”, stands out from the rest of the fields. While it can be consistent with warfare (e.g. the destruction of buildings), the analyst knows from reading through the article before starting the Wmatrix analysis that the “architecture, houses and buildings” semantic field does not match the overall topics of war and politics in the text. This hints at a potential function as a source domain. A check of the concordances supports this intuition: eleven out of twelve occurrences have been marked metaphorically used by MIPVU (*construction*, *masonry*, *build*, *building*, *pyramid*, *extension*). An analyst who has identified the “architecture, houses and buildings” source domain as a likely candidate can thus quickly collect metaphorically used items from the lexical field of housing, as displayed in the concordances.

There are two further possible source domain candidates: “damaging and destroying” and “giving”. Unlike “architecture, houses and buildings”,

“damaging and destroying” does not particularly stand out from the overall topic of the text because it is consistent with the text’s topic of war. This category may, however, qualify as a source domain due to its concreteness. The concordances show that “damaging and destroying” contains both metaphorical and non-metaphorical uses as identified by MIPVU. *Destroy(ed)* and *harm* were marked as metaphorically used in “The structure of the developing national authority has been both diffuse enough to prevent it from being *destroyed*.” and “We do not wish to *harm* you or your state.” The two literally used examples in the “damaging and destroying” category are *demolishing* and *destructive* (“(...) *demolishing* homes, uprooting olive or citrus trees (...)” and “(...) the Intifada as a constructive, not a *destructive*, force (...)” The semantic field “giving” also suggests concrete uses in terms of transfer of concrete things. The uses are quite varied, however, ranging from metaphorically used items (e.g. “(...) *giving* birth to their independent Palestinian state (...)”) to abstract expressions that are never metaphorically used (e.g. “we wish to achieve freedom (for our people), not to *deprive* others (Israelis) of it”). These two examples also show that an analyst cannot take for granted that all lexical units listed in the concordances are metaphorically used, even if the semantic field seems to function as a source domain. It is therefore still necessary to check all listed instances by hand in order to exclude all non-metaphorical uses.

An example from a different text, the business report A8U-fragment14, demonstrates most clearly that a semantic field may obviously stand out from the rest of the semantic fields but may not contain any source domain expressions. Most semantic fields of the key domain analysis are an adequate description of the topic of the article (e.g. “Money and pay”, “Money generally”, “Business: Selling, Quantities”). As expected, most linguistic expressions belonging to these three top categories are literally used, since they describe the target domain of the text. There is a domain that clearly stands out as alien given the business context, however: “substances and materials: liquid”. It looks like a source domain appropriate for the business subregister: MONEY IS A LIQUID is a conceptual metaphor frequently mentioned in the cognitive linguistic literature. A look at the linguistic expressions of the semantic field reveals, however, that all occurrences are used literally (*oil* and *water* in “*oil slicks*” and “separating *oil* from *water*”), describing the activities of a company.

While some of the semantic fields that look like source domains thus do not (primarily) function as such, the opposite is also possible – namely that semantic fields were not chosen as candidates but do in fact contain many

metaphorically used expressions. In order to check this possibility, I inspected the concordances for each semantic field. Indeed, a number of categories that do not seem likely source domain candidates do contain a large percentage of metaphorically used expressions. Such examples are the fields “hindering”, “general actions, making” and “no constraint”. I will use the two latter examples to illustrate this case. Due to its abstract label, “no constraint” is not an immediately obvious source domain candidate. Even though it would be difficult to predict by looking at the semantic field label alone, “no constraint” contains only metaphorically used items as identified by MIPVU - *freedom* three times and *liberated* once. *Freedom* is used metaphorically in “Its [the Intifada’s] two main slogans (...) are *freedom* and independence”. This is because in the present context it means ‘the right to do what you want without being controlled or restricted by anyone’, which can be understood in comparison with its basic meaning of being physically free. Similarly, *liberated* was marked as metaphorically used because it refers to more than being physically controlled (“Villages and refugee camps were thus being developed into *liberated* or independent areas, if not militarily, then at least psychologically, politically and infrastructurally.”)

“General actions, making” is also unlikely to jump out at the analyst as a potential source domain. It is too broad to suggest metaphorical use of its associated lexical items. MIPVU did, however, identify a number of expressions that can be attributed to this source domain. A look at the concordance reveals that most of the metaphorical examples in this semantic field are built upon a contrast between concrete and abstract. The semantic field label is so vague that it comprises both abstract and concrete references. In this case, about half of the items were indeed metaphorically used.

While the successful identification of the semantic field “architecture, houses and buildings” as a source domain may look promising, there are serious limitations of the top-down approach to metaphor identification with Wmatrix, which is best illustrated by the semantic field “wanted”. “Wanted” seems an unlikely source domain, but checking the concordances reveals that MIPVU has identified a number of metaphorically used cases, namely *strategy*, *objectives*, *campaign* and *aim*. Based on MIPVU, the basic sense for the first three is war-related. The first two words were, however, assigned only the abstract field (“wanted”). The third did receive the tag “warfare, defence and the army, weapons” but not in first position. *Aim* received a concrete location tag, but also as a second tag only. For the assignment to a semantic category in the key analysis, the program only considers a word’s first tag, which is why all these lexical items ended up in the category “wanted”. The program assigns the most

likely tag first – and this will often (though not always) – be the contextually most appropriate one. This is a problem for a top-down analysis because this means that a number of words are placed in categories that are not representative of their basic meanings. Thus, in order not to miss potential metaphorical expressions, it would be necessary to also check concordances of fields that do not immediately point to metaphorical usage. This defeats the purpose of a quick and fast method of finding source domains and their corresponding metaphorical expressions.

For those semantic fields that have already been successfully judged to function as source domains (such as “architecture, houses and building”), the problem of tag order can be alleviated by performing a so-called ‘broad sweep’ analysis. For instance, the concordance for “architecture, houses and buildings” (H1) lists only items with H1 as their first tag. This is problematic because it does not capture other potential candidates for a building-related source domain. The ‘broad sweep’ analysis also reveals items that have H1 in their taglist regardless of its position. Thus, this list is capable of revealing additional items related to a semantic field. To illustrate, Table 7.5 shows the list for the semantic field “architecture, houses and buildings” (H1). The table contains the first semantic tag (tag code) for each word. Items that are marked metaphorically used at least once are shaded in gray. Items that have the semantic tag H1 as their first tag were listed in the concordance of the semantic field “architecture, houses and buildings”. All other items in the list below were not listed because their first tag is not H1. Many of them are metaphorically used (in bold). They were missing from the concordance because H1 is not their first tag.

Table 7.5*Results of broad sweep for “architecture, houses and buildings (H1)”*

word	tag code	metaphors/total tokens
Masonry	H1	1/1
Build	H1	1/1
Building	H1	5/5
Construction	H1	2/2
Pyramid	H1	1/1
Extension	H1	1/1
Minarets	H1	0/1
Points	A10+	1/1
field-general	A11.1+	1/1
Developed	A2.1+	0/2
Developing	A2.1+	1/3
Civil disobedience	G2.1-	0/1
Spires	H2	0/1
Homes	H4/H1c	0/1
Home	H4/H1c	2/2
Erected	M2	0/1
Block	O2	2/2
Blocks	O2	1/3
Structures	O4.1	1/1
Structure	O4.1	5/5
Flags	Q1.1	0/1
Institutional	S5+	0/1
Units	S5+c	0/3
Institutions	S5+c	0/2
Church	S9/H1c	0/1
Establishment	T2+	0/1

The table shows that doing the ‘broad sweep’ is necessary in order not to miss metaphorical usages that also fit into the building-related semantic field. The broad list returns additional metaphorically used items. The analyst may decide that some of them should be considered as part of the semantic field “architecture, houses, buildings” (e.g. for the current example *home*, *block(s)* and *structure(s)* are appropriate candidates because their basic senses are related to construction and building. This example shows that in order to maximize the number of expressions that match a semantic field, the analyst needs to consult the broad list and not the concordances alone. The ‘broad sweep’, however, would only be done under the precondition that a semantic field has already been determined to be worth further searching.

To summarize, most overused semantic fields in this text are a good reflection of its general topics of war and politics. One of the overused domains, namely “architecture, houses and buildings”, clearly deviates from this overall semantic content. It does have connections to warfare, but an initial skimming of the text makes it clear that the field does not describe the destruction of houses and buildings, for instance. The concordance shows that this semantic field indeed overwhelmingly functions as a source domain: 92% of the expressions in this field have been identified as metaphorically used by MIPVU (11 metaphorical tokens; 5 types). Further semantically consistent metaphorically used items were added by considering items that had the “architecture, houses and buildings” tag in their taglist regardless of its position by performing a ‘broad sweep’ analysis.

Showing the underlying conceptual structure by finding semantic fields that deviate from the overall topics of the text works particularly well when there are multiple metaphorically used words sharing the same source domain. This means that series of metaphorically used items will be grouped under one semantic field, which makes them end up high on the list of overused items in the text and thus easier to spot.

The analysis of this text has also shown that concrete semantic fields that may be used as source domains in general (e.g. “warfare, defence and the army; weapons”, “places”) do not contain many metaphorically used instances because they describe the semantic content of the text. On the other hand, several fields that looked like target domains turned out to contain a high percentage of metaphorical uses (“hindering”, “no constraint” and “general actions, making”). This is due to broad semantic labels that contain both concrete as well as abstract meanings and due to the fact that the key analysis assigns expressions to semantic categories based on the first semantic tag. This tag is not necessarily the source domain tag, which generates difficulties for top-down metaphor analysis. The Wmatrix analysis should thus be most successful in detecting direct metaphor that extends over a longer stretch of text because for direct metaphor there is no more basic meaning. For example, in “like a *buzzard*”, *buzzard* takes its basic meaning, which is at the same time the contextual meaning. The next section will look at such a text.

7.3.2.2 Case study 2: Text with extended direct metaphor

To this point the focus has been on analyzing indirectly used language. Cross-domain mappings, however, are not exclusively a phenomenon of indirect language; metaphor can also be expressed directly, as illustrated in previous

Table 7.6

Most salient semantic fields of A8R-fragment14 in reference to the BNC-Sampler Written

case	tokens	LL	semantic categories
1	27	98.02	Using
2	30	89.45	Mental object: Means, method
3	18	70.43	Information technology and computing
4	18	30.46	Change
5	1	14.09	Light
6	10	14.00	Business: Generally
7	8	13.83	Medicines and medical treatment
8	22	12.66	Likely
9	14	12.51	Wanted
10	7	11.43	Difficult
11	1	7.41	Time: Early/late
12	9	6.70	Generally kinds, groups, examples
13	5	5.44	Detailed
14	2	5.26	No knowledge
15	4	5.22	Personal relationship: General
16	6	5.15	Knowledgeable
17	15	4.07	Speech acts
18	13	4.06	Negative
19	3	4.04	Long, tall and wide
20	2	3.96	Time: Early
21	1	3.87	Expensive

chapters. Direct metaphor is marked by a topic shift away from the target domain of the text. The incongruous domain should therefore be visible as a semantic field that stands out as alien from the categories describing the semantic content of the text. Since for direct metaphor there is no more basic sense, the appropriate tag is likely in first position. The problems of tag order that make analysis of indirect metaphor difficult should not be an issue.

This is demonstrated by the newspaper article on (computer) systems development from the applied science pages in *The Guardian* (A8R-fragment01), also discussed in previous chapters. Table 7.6 lists all semantic categories that are used significantly more frequently than in the reference corpus BNC-Sampler Written.

In Table 7.6, semantic fields whose labels suggest a source domain use because of either their concreteness (“long, tall and wide”) or their clear deviance from the overall topic of systems development (“light” and “medicines and medical treatment”) are marked in gray. A check of the concordances reveals that MIPVU has marked their corresponding lexical

items as metaphorically used, thus confirming the source domain usage of these lexical fields. All three items of “long, tall and wide” (*deep* (2), *thick* (1)), and the expression listed under “light” (*light*), are indirectly used (“*deep* knowledge”, “*deep* understanding”, “comments come *thick* and fast”, “come to *light*”). The semantic category “medicines and medical treatment” deviates most clearly from the topic of the text, indicating a topic shift. The linguistic expressions that are grouped under this field, *doctor* (3), *treatment* (1), *prescribe* (1) and *prescribes* (1), were all marked as direct metaphor using MIPVU. They do not describe the target domain of the text. As can be seen from the excerpt below, there is a shift from the target domain topic of systems development to the domain of medicine (in italics). The remaining two items from the semantic field “medicines and medical treatment” are a second case of *prescribes* and the item *cure*. While they have been marked as metaphor-related, they are not directly but indirectly used (and they are thus not printed in italics in example (3)).

- (3) IN SYSTEMS development nothing is more fundamental than assessing user requirements. (...) But many system developers are unable to assess requirements properly. They seem to think that you can ask a businessman what his requirements are and get an answer that amounts to a draft system specification. *A doctor doesn't ask his patient what treatment to prescribe. The patient can explain only what the problem is. It is the doctor that provides the remedy.* (...) A user may have a deep knowledge of business problems, but knowing little about computers, has no idea how they should be tackled (...). An effective analyst provides the same services to the business as *the doctor provides to the patient.* (...). He finds out what the needs of the business are and prescribes the cure. (A8R-fragment02)

Yet another direct metaphor, *remedy*, can be added to the collection of items that are part of a medical source domain. *Remedy* was not listed in the category “medicines and medical treatment” (B3) because its first tag is “mental object: Means, method” (X4.2) and not B3. It does contain the tag in second position, though, which is why it is revealed by the ‘broad sweep’ function. It is useful to additionally perform a ‘broad sweep’ search for expressions that contain the tag B2, “health and disease”, since this field is closely related to “medicines and medical treatment”. The search returns one further item that MIPVU has marked as direct metaphor, namely *patient* (2).

To summarize, in addition to finding indirect language use, semantic field deviations may also be an indicator of direct metaphor. This works best when the domain shift occurs across a longer stretch of text that contains multiple expressions from the alien domain, as was the case for the indirect use of an

extended mapping from the source domain of building in the previous text. For isolated direct metaphor (e.g. He wings up high like an *eagle*), there is only one expression (*eagle*) that is used as a source expression. Such direct metaphorical uses are likely more difficult to find: when directly used expressions are not used significantly more often than in the reference corpus, for example, they do not show up in the list of overused items at all. Deviant items are easiest to spot if they appear high on the list of categories. It is more difficult to find them in the lower part of the list because most of these items are not a good reflection of the target domain of the text, which causes the source field containing the directly used expression not to stand out as particularly deviant.

In summary, Wmatrix can assist the search for potential source domains, albeit with limitations. Comparing a text to a reference corpus yields semantic fields that best describe the topic of the text. It can be useful to look for semantic fields that deviate from this topic. Deviant domains such as, for example, “architecture, buildings and houses” in a political text on the conflict in the Middle East, are highly likely to function as source domains. This seems to work particularly well for texts with extended mappings because these semantic fields are more likely to end up high on the semantic field list and are thus more likely to stand out from the fields describing the topic of the text.

Additional metaphorically used items can be discovered by checking concrete semantic field labels such as, for example, “damaging and destroying”. It is necessary, however, to systematically check concordances because the source domain field may still contain lexical items that describe the target domain of the text and are literally used. Likewise, semantic field labels may be described in such broad terms that they do not immediately suggest the inclusion of a source domain use.

Performing a ‘broad sweep’ may help in revealing additional semantically similar items, which the analyst can add to the list of candidates grouped under a semantic field. The generated list contains all items that have been assigned a certain semantic field regardless of its position in the tagset. This thus includes words that were missing from the concordance because the relevant tag was not listed in first position. As a result, the analysis can expand the field to include a much broader range of items.

Not only indirect metaphor can be detected by searching the semantic category list for potential source domain candidates; direct metaphor can be detected by looking at the semantic field labels of the key domain list as well. The topic shift caused by a direct metaphor to which multiple expressions are

connected can be noticed in semantic field labels that are not in line with the semantic fields describing the overall content of the text.

Wmatrix may be helpful in some cases, it does fall short of the accuracy provided by manual analysis. It lacks not only in accuracy but also has difficulty finding deviant source domains if the metaphorical expressions from the text do not come prominently from a few but from many different semantic fields.

7.4 Conclusion

Identifying metaphor with MIPVU is an analysis that operates strictly on a linguistic level; the core of the procedure involves comparing and contrasting contextual and basic senses of words without constructing source and target domains and conceptual mappings. This chapter has moved beyond the linguistic level into semantic field analysis. Words and expressions can be grouped under semantic fields that roughly correspond to conceptual domains. The chapter has explored whether metaphorical language can be identified by inspecting semantic fields as assigned by the semantic annotation tool Wmatrix. I did so by taking two approaches to the data.

First, in a bottom-up procedure, I compared and contrasted semantic field labels assigned to lexical units and checked whether there was semantic tension that would form the basis for a metaphorical mapping. Even though this tool has not been developed for metaphor identification, I have shown that comparing and contrasting different semantic fields of a lexical unit can point towards metaphorical usage of the unit, albeit with limitations. This bottom-up approach parallels the MIPVU procedure of comparing and contrasting contextual and basic senses. The semantic field analysis cannot, however, replace metaphor identification using a rigorous protocol such as MIPVU that has been tested for reliability. The semantic field labels are often vague. This means that there is only one semantic field label to describe both abstract and concrete expressions. Thus no comparison can be made between two different semantic categories. Another main limitation is that only the first tag assigned by the tagging program tends to be contextually appropriate. Both of these are not insuperable limitations, which in practice could be remedied if this was needed.

Second, searching for potential source domains with Wmatrix can also be approached from a top-down perspective. Similar to an analyst who determines a text's underlying conceptual metaphors first and then looks for

linguistic evidence consistent with those mappings, a top-down approach with Wmatrix searches the prominent semantic fields of a text for fields that potentially act as source domains for metaphorical mappings. Such likely candidates are fields with concrete source domain labels or fields that stand out as alien from the rest of the semantic fields that describe the topic of the text. The approach seems most successful for texts containing extended metaphors, whether direct or indirect. A high number of metaphorically used words from the same semantic fields makes it more likely for that field to show up as a significantly overused field compared to a reference corpus. Since those categories best reflect the topic of the text, the field is thus more likely to stand out as deviant. Note that this is not necessarily always the case. For example, if a word of a certain field does not exist in the reference corpus, then that field will still show up as a significantly overused item – even if it only contains one token.

Because Wmatrix assigns words to semantic categories based on their first semantic tag (which is often the contextually most appropriate one), it is likely that a word will end up in a category that is not representative of its basic meaning. The top-down analysis does therefore not catch all semantic fields that contain predominantly metaphorically used words. This is a serious limitation to using the program for metaphor identification purposes.

Since the program has not initially been designed for metaphor analysis, it can currently only be applied with restrictions. Some additions for the purposes of metaphor research (e.g. the ‘broad sweep’ function) have resulted from research by Hardie et al. (2007). It is evident, however, that there is potential to develop Wmatrix further for metaphor identification purposes by, for example forcing the program to assign concrete domain labels in first position. This could be a further development of the ‘domain push’ function, which allows the analyst to select single semantic fields to be assigned as a first tag.

While a top-down Wmatrix analysis identifies semantic fields that may act as source domains, as well as their corresponding linguistic expressions, it specifies neither the exact nature of the mapping nor the exact label of the source and target domain. Similarly, the focus of a top-down approach by an analyst is not a fine-tuned, local analysis but is initially more concerned with global underlying metaphorical mappings before plunging into more detailed search for metaphorical expressions. The present analysis demonstrates that while the identification of a metaphorical theme is possible (e.g. the semantic field of “architecture, houses and buildings” as a source domain in the political text on the Middle East), the exact nature of the source domains and the

mappings is left implicit and is better approached by a fine-grained, manual bottom-up analysis. Such a bottom-up approach that guides the analyst from the metaphorical expressions to conceptual mappings is the focus of the following chapter.

CHAPTER 8

Methodological exploration II: A five-step method

8.1 Introduction

By applying the MIPVU procedure, linguistic metaphor identification has been systematized and controlled. The focus of conceptual metaphor theory clearly lies on the conceptual level. Conceptual metaphor theory claims that humans understand abstract domains through mappings from concrete domains derived from bodily experience: “Our ordinary conceptual system, in terms of which we both think and act, is fundamentally metaphorical in nature (...)” (Lakoff & Johnson, 1980, p. 3). Moving into the conceptual level is more challenging, as became clear in the previous chapter, since it is more difficult to delineate conceptual domains than to look up sense descriptions in a dictionary.

Ritchie (2006, p. 57), warns that

(...) from the substantial evidence that metaphors are not necessarily interpreted in a standard way, even by the same person on different occasions, and from the evidence that much of our vocabulary is acquired, at least originally, by way of connections with other words, it seems likely that Lakoff and Johnson have gone too far in asserting the primacy of embodied conceptual metaphors over language.

Despite this focus on the conceptual nature of metaphors, it is unclear how Lakoff and Johnson (1980) have actually come up with the formulations of conceptual mappings they claim underlie metaphorical expressions such as “How do you *spend* your time these days?” or “That flat tire *cost* me an hour” (p. 8). Lakoff and Johnson (1980) do not provide details on their method of data collection. Their intuition-based work has been subject to criticism (e.g. Gibbs, 2006; Haser, 2005; Jackendoff & Aaron, 1991; Leezenberg, 2001; Murphy, 1996, 1997; Verwaeke & Green, 1997; Verwaeke & Kennedy, 1996). Not only is it unclear where and how Lakoff and Johnson collected their examples of linguistic metaphors, but it is not apparent how and why their conceptual mappings are formulated the way they are. The previous chapters

have emphasized the importance of systematic, transparent data collection that is not based on intuition but on an explicit protocol that allows testing for reliability of linguistic metaphor identification in natural discourse. It is of equal importance to approach the identification of conceptual metaphors underlying linguistic expressions in a text in a transparent and systematic way.

Cameron and Deignan (2006, p. 674) note that “(...) metaphor emerges from the dynamics of language and thinking, and is at the same time conceptual and linguistic.” Both types of metaphor need their own methods of identification, since the linguistic and the conceptual level are not the same. “(...) linguistic forms do not express everything there is to conceptual structure (...)” (Steen, 2007, p. 175). The relationship between these two levels of “conceptual” metaphor and “linguistic” metaphor is complex and easily conflated. Even “the terminological distinction is not always maintained” Cameron (2003, p. 19) notes. This inconsistent terminology may at times be misleading. For instance, when Lakoff (1993, p. 203) speaks of “metaphor”, he refers to the actual mapping across two domains. What can be observed in language are metaphorical expressions. Though Cameron (2003) is convinced that language and thought must be separated for the development of the cognitive theory, she cautions that “they are not perhaps as separable as some of the programmatic statements and claims suggest.” While they may be difficult to separate at times, keeping them apart as much as possible adds transparency to both linguistic and conceptual metaphor identification and helps examine when they function in parallel and when they do not.

Approaching metaphor identification with a method such as MIPVU helps to keep the two theoretical levels apart. Applying MIPVU tells the researcher only whether a word or expression counts as metaphorically used on a linguistic level. It does not reveal the linguistic metaphor’s underlying conceptual structure. The process of deriving underlying conceptual structures is not straightforward and demands its own methodological treatment. For instance, if a politician has to change his or her *strategy* to *win* an election, how do we know whether the underlying source domain is WAR or GAME or SPORTS? Clearly, determining conceptual metaphors also demands a transparent procedure.

Work within a cognitive linguistic framework tends to favor deductive approaches to metaphor identification and analysis (e.g. Chilton, 1996; Koller, 2004; Musolff, 2004). This means that the researcher starts out either from complete conceptual metaphors or from particular source or target domains. Steen (2007, p. 27) identifies the (at least temporary) assumption of conceptual metaphors as a potential weakness of deductive approaches. It is certainly a

valid approach, especially when patterns of a large number of linguistic expressions can flesh out more details of the proposed underlying mapping. Without a reliable procedure for identifying conceptual and linguistic metaphor, however, linguists tend to “see concrete manifestations of conceptual metaphors everywhere.” The risk is, as (Low, 1999b, p. 49) points out, that researchers may over-identify expressions matching those metaphors they have recently been working on, while simultaneously under-identifying others. Similarly, if a conceptual metaphor is presumed, an analyst may tend to find exactly the kind of evidence he or she is looking for (Cameron, 2003, p. 252). For instance, if the analyst assumes the conceptual metaphor FOOTBALL IS WAR, he or she may be (mis)led into identifying linguistic expressions as evidence of such a mapping without considering that those very same linguistic data could be manifestations of an alternative mapping. Ritchie (2003, p. 125) writes extensively about this problem. “When a word or phrase like ‘defend’, ‘position’, ‘maneuver’, or ‘strategy’ is used, there is no a priori way to determine whether the intended underlying conceptual metaphor is an athletic contest or game of chess.”

This view goes against Lakoff and Johnson (1980), who have postulated single conceptual metaphors but neglected the fact that they can be interpreted in several different ways. The same is true of linguistic expressions: referring to research by Gentner and Bowdle (2001), Kövecses (1995) and Radman (1997), Ritchie (2003, p. 128) points out that “the evidence thus far is consistent with the idea that many everyday phrases represent overlapping interlocking systems of metaphor, affording many possible interpretations.” Vervaeke and Kennedy (1996) also stress that a metaphor on a linguistic level may be interpreted according to multiple underlying conceptual metaphors and is not necessarily a surface expression of a single cross-domain mapping.

These concerns suggest the need for an alternative approach that does not start from the presumption of existing conceptual metaphors but instead works bottom-up, deciding on underlying conceptual structures for each individual case (e.g. Cameron, 2003; Steen, 1999). Such an inductive approach does not deny the existence of conceptual metaphors. First identifying mappings locally, however, may prevent the analyst from assuming the most (subjectively) obvious mapping right away. Although it is tempting to think of global mappings consistent with the themes of a text, the actual mapping might not fit the scenario in every instance. Shen and Balaban (1999), for instance, have shown that a sample of opinion articles that did not deliberately employ metaphorical language contained many different conceptual metaphors, as opposed to being built around just a few. Metaphorical

expressions may not always fit best with well-established conceptual metaphors (see Semino, 2008, pp. 208ff).

By using a step-by-step procedure that makes the process of deriving conceptual mappings from linguistic metaphors explicit, I will demonstrate that an analyst must exercise caution when determining mappings for metaphorical expressions. This framework, a five-step-method (Steen, 1999, 2009), has been developed as an attempt to bridge the gap between linguistic and conceptual metaphor. It aims to arrive at conceptual mappings by starting out from the linguistic metaphors as identified through the MIPVU procedure.

By applying this bottom-up approach to three metaphorically used words in a business news report, I will first highlight the challenges a metaphor researcher faces when determining conceptual metaphors underlying linguistic expressions. This analysis shows the need to be sensitive to alternative options when formulating conceptual mappings. I will also discuss tools that help the analyst to move away from intuition while, at the same time, constraining the identification process as much as possible.

In principle, the five-step method is an inductive approach that formulates conceptual mappings only after linguistic metaphors have been identified. In the second part of this chapter, I adapt the method in a way that allows me to reveal the differences between analytical processes involved in a deductive versus an inductive approach and how they lead to two different outcomes when attempting to explicate conceptual metaphors and their mappings for linguistic metaphors.

8.2 A bottom-up five-step method analysis

The following section applies a five-step method to three semantically related metaphorically used words in a business news report excerpted below (italics and underlined).

- (1) Container group Tiphook yesterday said that it was still confident of *winning* its joint £643 million bid for Sea Containers even though the *battle* has swung towards James Sherwood's ferries-to-trailers combine. The offer from the Anglo-Swedish consortium formed by Tiphook and Stena AB is the subject of an appeal in the Bermudan courts which is aimed at overturning an earlier ruling allowing SeaCo to proceed with its 'poison pill' *defence*. (A8U-fragment14)

Does the presence of the lexemes *battle*, *winning* and *defence* mean that, for each of these items, the analyst can assign the mapping BUSINESS IS WAR? Selecting a source domain at the onset of research is a practice followed by, for example, (Koller, 2004). Her research was driven by the assumption that business media discourse is characterized by clusters of the “WAR metaphor”. Starting from the domains of WAR, SPORTS and GAMES, she drew up semantic fields for each of them using her corpus data as well as thesauruses and glossaries. While those tools may help to constrain the assignment process, starting from specific conceptual domains may lead to unquestioned assignment of expressions to one category while not considering its potential match with another. For example, *shoot* was assigned to WAR. But it could be ambiguous and also fit with SPORTS.

I will demonstrate that the analyst must exercise caution when determining mappings for metaphorical expressions. He or she needs to be aware of possible alternative mappings and should refrain from relying on initial intuitions to determine the conceptual metaphor(s) underlying complete texts or paragraphs. Here I briefly sketch the analytical framework and will then demonstrate its application:

The steps are (Steen, 2009):

- Step 1: Identification of metaphor-related words
- Step 2: Identification of propositions
- Step 3: Identification of open comparison
- Step 4: Identification of analogical structure
- Step 5: Identification of cross-domain mapping

The identification of metaphorically used words or expressions (step 1) is taken care of by applying the MIPVU procedure. In step 2, the excerpt above is deconstructed into propositions, using roughly the same method that van Dijk and Kintsch (1983) applied for the creation of a text-base, and a variant proposed by Bovair and Kieras (1985). Propositionalization is a way of capturing a text’s conceptual structure. The elements of the propositions stand for the concepts that may be activated through linguistic forms in the surface text (e.g. Bovair & Kieras, 1985; van Dijk & Kintsch, 1983). Kövecses (2002a) points out that propositions make the metaphorical relations in a discourse explicit and help to prevent overlooking patterns of metaphor. “(...) the propositional level is needed when we want to describe metaphor in naturally occurring discourse” (p. 76).

The third step creates a comparative structure between elements of the target and the source domain according to a formula suggested in Miller (1993). Elements of target and source domain that are still unknown (step 3) are made explicit in step 4, and the domains between which the mapping takes place are labeled. The last step arrives at a metaphorical mapping and a set of correspondences between elements of the target domain and elements of the source domain.

The method does not assume that the mappings it arrives at are also a cognitive reality. It produces source and target concepts at a symbolic level that can then inspire experimental research that looks into metaphor processing. It does not, however, reflect people's thinking (see also Gibbs, 2002, p. 81). As Crisp (2002, p. 9) points out, such experimental studies based on work on a symbolic level could "determine what proportion of the potential mappings is likely to be realized psychologically and what relations there may be between such realizations and the surface form of the linguistic metaphor themselves." Whether or not people may actually establish metaphorical mappings will be a concern of the following chapter, which will look at whether or not peoples' textual representation of a news article is based on its underlying metaphor.

In this chapter I focus on those words that are likely to be seen as evidence of the conceptual metaphor BUSINESS IS WAR. Thus only the words *winning*, *battle* and *defence* are analyzed. All three words were identified as metaphorically used in step 1 of the procedure. The basic and contextual meanings of the words as found in the Macmillan dictionary are listed below. A sense description in square brackets indicates that the contextual meaning could not be found in Macmillan or Longman, likely due to specialized use, and was therefore supplied by the analyst:

winning

contextual: to succeed in getting something you want because of hard work or ability

basic: to defeat everyone else by being the best or by finishing first in a competition

battle

contextual: a situation in which different people or groups compete with each other in order to achieve something or get an advantage

basic: a fight between two armies in a war

defence

contextual: [a measure taken by a company to prevent its acquisition by another company]

basic: actions that you take to protect someone or something that is being attacked (*physical* defence is basic)

In the first sentence, a company is trying to win a bid for the acquisition of another company. Step 2 (Table 8.1) breaks down the sentence into propositions, as shown below, in order to turn the surface text into a textbase consisting of concepts. *S* stands for ‘sentence’, *DU* stands for ‘discourse unit’ and the propositions are named *P*. All concepts that belong to some source domain are underlined to signal that they are used indirectly and are labeled with the subscript *s* for ‘source domain’.

The first concept I analyze is WIN, found in proposition P8. This

Table 8.1

Step 2: Identification of propositions

Text	Container group Tiphook yesterday said that it was still confident of <u>winning</u> its joint £643 million bid for Sea Containers even though the <u>battle</u> has swung towards James Sherwood’s ferries-to-trailers combine.	
Step 2	S1	P1 (EVEN-THOUGH DU1 DU2)
Identification of propositions	DU1	P1 (<u>SAYS</u> _s TIPHOOK P2) P2 (BE TIPHOOK <u>CONFIDENT</u> _s) P3 (TIME P1 YESTERDAY) P4 (MOD TIPHOOK <u>GROUP</u> _s) P5 (MOD <u>GROUP</u> _s CONTAINER) P6 (MOD <u>CONFIDENT</u> _s STILL) P7 (OF <u>CONFIDENT</u> _s P8) P8 (<u>WIN</u> _s TIPHOOK <u>BID</u> _s) P9 (POSSESS THIPOOK <u>BID</u> _s) P10 (MOD <u>BID</u> _s <u>JOINT</u> _s) P11 (MOD <u>BID</u> _s MILLION) P12 (MOD MILLION £634) P13 (FOR P8 CONTAINERS) P14 (MOD CONTAINERS SEA)
	DU2	P1 (<u>SWING</u> _s <u>BATTLE</u> _s) P2 (<u>TOWARDS</u> _s P1 COMBINE) P3 (POSSESS SHERWOOD COMBINE) P4 (MOD SHERWOOD JAMES) P5 (MOD COMBINE FERRIES-TO-TRAILERS)

Table 8.2

Step 3: Identification of open comparison

Text	Container group Tiphook yesterday said that it was still confident of <i>winning</i> its joint £643 million bid for Sea Containers (...)
Step 3	Derived from S1-DU1-P8: (WIN _s TIPHOOK BID _s)
Identification of open comparison	SIM { $\exists F, \exists x, y$ (F TIPHOOK BID) _T (WIN x y) _S }

proposition contains a second metaphorical concept (BID). Its metaphorical nature is due to ‘possible personification’. A *bid* is only something humans can make. In the present context an abstract entity, the company Tiphook is making the bid, which is why *bid* is metaphor-related. Since the present analysis focuses on the items *winning*, *battle* and *defence* only, other metaphorically used items such as, e.g. *bid* are left aside. They would demand their own five-step analysis.

Step 3 (Table 8.2) turns the proposition P8 into an incomplete comparison between two propositions. It sets up a similarity relation (SIM) between some activity F and entities TIPHOOK and BID in the target domain, and the activity of WINNING and some yet to be determined entities (x and y) in the source domain. This means that there is a similarity between some activity F in the target domain and WIN in the source domain, as well as between the entities TIPHOOK and BID in the target domain and some entities x and y in the source domain.

In step 4 (Table 8.3) the empty slots from step 3 need to be filled in. We have examined how this can be done by using the dictionaries as a tool. Slots F , x and y are filled based on the descriptions of *win* in the Macmillan and the Longman dictionaries ‘to defeat everyone else by being the best or by finishing first in a competition’ and ‘to be the best or most successful in a competition, game, election etc’. The concept for slot F (SUCCEED-IN) in the target domain is derived from the description in Longman ‘to be the best or most successful’. The sense descriptions in both dictionaries refer primarily to humans, which is why slot x in the source domain frame is filled by SOMEONE. A closer look at Macmillan shows that the basic meaning of *win* is general and not restricted to war, since the sense description that mentions the war-related meaning – ‘to achieve victory in a war, battle, or argument’ (sense 1a) – is subsumed under the general sense ‘to defeat everyone else by being the best or by finishing first in a competition.’ Thus the general sense description is taken as a basis for

Table 8.3

Step 4: Identification of analogical structure

Text	Container group Tiphook yesterday said that it was still confident of <i>winning</i> its joint £643 million bid for Sea Containers (...)		
Step 4	Derived from S1-DU1-P8: (WIN _s TIPHOOK BID _s) SIM		
Identification of analogical structure	(SUCCEED-IN (WIN	TIPHOOK SOMEONE	BID) _{T=SUCCEEDING} COMPETITION) _{S=WINNING} }

selecting the concept of COMPETITION for the open y slot. The final two lines of step 4 represent an analogy between the source and the target domain. Their pairing demonstrates visually that the options for slot y in the source domain frame are not restricted to WAR.

Step 4 additionally involves labeling the source and the target domain, an innovation developed in collaboration with other analysts as part of this research project. Labeling the domains is challenging. The domain labels should be chosen in such a way that they best describe the frames of the target and the source domain. The issue at hand is whether to focus on the predicates (WIN and SUCCEED-IN), the arguments (TIPHOOK and SOMEONE and/or BID and COMPETITION) or include both the predicates and the arguments (e.g. SUCCEEDING-IN A BID and WINNING A COMPETITION). These issues are not peculiar to this specific example but are instead a general problem and are also addressed in Semino et al. (2004, pp. 1281ff). Since my primary interest in this example lies in the conceptual structure of *winning*, I choose to label the domains in a general fashion with focus on the predicate and make sure to formulate the labels at the same level of abstraction.

The structure of the mapping in step 5 (Table 8.4) is derived from the domain labels in step four, leading to the general mapping SUCCEEDING IS WINNING. Although we might have guessed this from the basic and contextual meaning, this process has made it more explicit. If a more specific mapping is desired, however, the 5-step-method has also identified COMPETITION as a plausible source domain (SUCCEEDING IN A BID IS WINNING A COMPETITION). The general level of the source domain COMPETITION is illustrated by listing a number of specific concepts as suggested by the dictionary entries for *win* in parentheses. They are all comprised by the general level concept (GAME/ELECTION/RACE/WAR/BATTLE).

Table 8.4

Step 5: Identification of cross-domain mapping

Text	Container group Tiphook yesterday said that it was still confident of <u>winning</u> its joint £643 million bid for Sea Containers (...)		
Step 5	<u>Derived from S1-DU1-P8: (WIN, TIPHOOK BID_s)</u>		
Identification of cross-domain mapping	T		S
	SUCCEED	←	WIN
	TIPHOOK	←	SOMEONE
	BID	←	COMPETITION(=GAME/ELECTION/RACE/WAR/BATTLE)
SUCCEEDING IS WINNING			
SUCCEEDING IN A BID IS WINNING A COMPETITION (more specific)			

The metaphorical concept BATTLE in proposition P2 of the second discourse unit is put through the five steps in the same way. As with the previous example, BATTLE is not the only metaphorical concept in the proposition. The additional metaphorical concepts SWING and TOWARDS would need their own 5-step analysis. Since the present analysis focuses on the conceptual structure of BATTLE, these other metaphorical concepts are left aside in order to keep the analysis as transparent as possible. I therefore posit the target domain equivalent CHANGE-IN-FAVOR-OF for the source domain concepts SWING and TOWARDS and focus on the analysis of BATTLE as shown in Table 8.5. Step two has already been spelled out in Table 8.1, so Table 8.5 lists steps 3 to 5 only.

The open slot *y* in step 4 is filled based on the sense descriptions for *battle* in Longman ‘a fight between opposing armies, groups of ships, groups of people etc, especially one that is part of a larger war’. In order to be maximally inclusive I choose the concept OPPONENT for the *y* slot in the source domain. The open target domain slot *a* is filled with the concept COMPETITION derived from the sense description in Macmillan ‘a situation in which different people or groups compete with each other in order to achieve something or get an advantage.’

In order to show that the two domains involved may be labeled at different levels of abstraction, step 4 presents two options. The source and target domain labels (BATTLE and COMPETITION) are derived from the first argument slot. The domain labeling on a higher level of abstraction is derived using the hypernym function of WordNet. WordNet, a lexical database of English, consists of a network of words grouped into sets of cognitive

Table 8.5

Bottom-up analysis of 'battle' (steps 3-5)

Text	(...) even though the <i>battle</i> has swung towards James Sherwood's ferries-to-trailers combine.
Step 3 Identification of open comparison	<p>Derived from S1-DU2-P1: (SWING_s BATTLE_s) and S1-DU2-P2: (TOWARDS_s P1 COMBINE)</p> <p>SIM {$\exists a, \exists G, y$ (CHANGE-IN-FAVOR-OF a COMBINE)_T (G BATTLE y)_s }</p>
Step 4 Identification of analogical structure	<p>Derived from S1-DU2-P1: (SWING_s BATTLE_s) and S1-DU2-P2: (TOWARDS_s P1 COMBINE)</p> <p>SIM (CHANGE-IN-FAVOR-OF COMPETITION COMBINE)_{T= COMPETITION >} <small>BUSINESS RELATION</small> (CHANGE-IN-FAVOR-OF BATTLE OPPONENT)_{S= BATTLE > MILITARY ACTION} }</p>
Step 5 Identification of cross-domain mapping	<p>Derived from S1-DU2-P1: (SWING_s BATTLE_s) and S1-DU2-P2: (TOWARDS_s P1 COMBINE)</p> <p>T S CHANGE-IN-FAVOR-OF ← CHANGE-IN-FAVOR-OF COMPETITION ← BATTLE COMBINE ← OPPONENT</p> <p>A COMPETITION IS A BATTLE A BUSINESS RELATION IS MILITARY ACTION (higher level of abstraction)</p>

synonyms called synsets. Conceptual-semantic and lexical relations interlink these synsets.¹¹ The hypernym for *competition* in a business context is “business relation”. The hypernym for *battle* in its military sense is “military action”.

Crisp (2002, p. 10) points out that there is no agreement about the level of generality at which mappings should be formulated. Some conceptual metaphors such as THEORIES ARE BUILDINGS may be derived from even more general, primary metaphors, as suggested by Grady (e.g. 1997), which are most basic to cultural experience. Cameron (2003, p. 252), Jackendoff and Aaron

¹¹ For an approach of finding source domains by using a combination of Wordnet sense descriptions and the ontology SUMO see Chung et al. (2005).

(1991, p. 324) and Vervaeke and Kennedy (1996, p. 276) also draw attention to the difficulty of establishing the right level of generality. For Vervaeke and Kennedy (1996, p. 276), “any claim about a particular implicit metaphor is open to this charge – a slightly higher or lower level of generality can always be devised.” Jackendoff and Aaron (1991, p. 324) give an example: why would a mapping be named LIFE IS A FIRE and not LIFE IS A FLAME (more specific) or LIFE IS SOMETHING THAT GIVES OFF HEAT (more general)? Littlemore and Low (2006, p. 13) even note that “we can never be sure about our formulations. Essentially, we have to guess.” It is difficult but important, however, to be transparent about how source and target domains are being generated (see Low, 2003).

Musolff (2000) examined British and German media texts from the ‘90s to examine, as he calls it, “house and construction imagery” (p. 217). Although he does seem to accept the notion of a mapping from HOUSE to STATE, it is noticeable that he never explicitly makes reference to a conceptual metaphor. He talks about “house and construction metaphors” (p. 217), “house and building metaphors” (p. 223), “the field of house/building imagery” (p. 217), “whole metaphor themes such as (...) house/building imagery” (p. 221), “terms from the domain of building/construction” (p. 221), and “the house/building metaphor theme” (p. 227). Looking at the way he labels these concepts, it once again becomes clear that there is no straightforward answer to the appropriate labeling of a source domain. Crisp (2002, p. 10) formulates the complexity of conceptual metaphor in this way:

A formula such as TIME IS MONEY is, as cognitive semanticists have emphasized, only a mnemonic for something that has a highly complex structure. Such a structure involves a source domain, a target domain and a mapping relationship between the two based upon a set of more or less conventionalized correspondences involving not only entities but also properties and relations.

To summarize, the analysis of *battle*, in contrast to the analysis of *win* above, does lead to a mapping that is in line with the well-known conceptual metaphor BUSINESS IS WAR. As in the previous example, it is not only the domain labels that can be formulated at different levels of abstraction (e.g. BATTLE versus MILITARY ACTION), but also the conceptual mapping. Depending on which level the analyst chooses he or she will arrive at a general mapping – A BUSINESS RELATION IS MILITARY ACTION – or a more specific one – A COMPETITION IS A BATTLE.

Finally, the word *defence* in the second sentence (S2) of the business report is analyzed.

- (2) The offer from the Anglo-Swedish consortium formed by Tiphook and Stena AB is the subject of an appeal in the Bermudan courts which is aimed at overturning an earlier ruling allowing SeaCo to proceed with its 'poison pill' *defence*.

First, the whole sentence is broken down into propositions as illustrated in step 2. All source domain concepts are underlined. The present analysis focuses on proposition P7 only, with the goal of revealing underlying conceptual structures of *defence*. I posit the target domain equivalent CONTINUE for the second source domain concepts within propositions P6 and P7, PROCEED and WITH (see step 3), and analyze DEFENCE as detailed in Table 8.6.

Table 8.6

Bottom-up analysis of 'defence' (steps 2-5)

Text	The offer from the Anglo-Swedish consortium formed by Tiphook and Stena AB is the subject of an appeal in the Bermudan courts which is aimed at overturning an earlier ruling allowing SeaCo to proceed with its 'poison pill' <i>defence</i> .
Step 2	S2
Identification of propositions	DU1 P1 (<u>BE OFFER SUBJECT</u> _s) P2 (<u>FROM</u> _s OFFER CONSORTIUM) P3 (MOD CONSORTIUM ANGLO-SWEDISH) P4 (<u>FORM</u> _s TIPHOOK CONSORTIUM) P5 (<u>FORM</u> _s STENA CONSORTIUM) P6 (MOD STENA AB) P7 (OF <u>SUBJECT</u> _s APPEAL) P8 (<u>IN</u> _s APPEAL COURTS) P9 (MOD COURTS BERMUDAN) P10 (<u>AIM</u> _s APPEAL) P11 (<u>AT</u> _s P10 P12) P12 (<u>OVERTURN</u> _s APPEAL RULING) P13 (MOD RULING EARLIER) P14 (<u>ALLOW</u> _s RULING P15) P15 (<u>PROCEED</u> _s SEACO) P16 (<u>WITH</u> _s P15 <u>DEFENCE</u> _s) P17 (POSSESS SEACO <u>DEFENCE</u> _s) P18 (MOD <u>DEFENCE</u> _s <u>PILL</u> _s) P19 (MOD <u>PILL</u> _s <u>POISON</u> _s)

Step 3	Derived from <u>S2-DU1-P15</u> : (PROCEED _s SEACO) and <u>S2-DU1-P16</u> : (WITH _s P15 DEFENCE _s)
Identification of open comparison	SIM { $\exists G, \exists b, x$ (CONTINUE P15 <i>b</i>) _r (G x DEFENCE) _s }
Step 4	Derived from <u>S2-DU1-P15</u> : (PROCEED _s SEACO) and <u>S2-DU1-P16</u> : (WITH _s P15 DEFENCE _s)
Identification of analogical structure	SIM (CONTINUE SEACO PREVENT-ACQUISITION) _{T=PREVENT-ACQUISITION >} <small>HINDRANCE</small> (CONTINUE SOMEONE/SOMETHING DEFENCE) _{S=DEFENCE > PROTECTION} }
Step 5	Derived from <u>S2-DU1-P15</u> : (PROCEED _s SEACO) and <u>S2-DU1-P16</u> : (WITH _s P15 DEFENCE _s)
Identification of cross-domain mapping	T S CONTINUE ← CONTINUE SEACO ← SOMEONE/SOMETHING PREVENT-ACQUISITION ← DEFENCE PREVENT-ACQUISITION IS DEFENCE HINDRANCE IS PROTECTION (on a higher level of abstraction) HINDRANCE IS PHYSICAL CONFLICT (both defence and protection are physical)

The source domain slot x in the open comparison that was set up in step 3 is filled again with dictionary aid. *Defence* is listed in connection with both humans and abstract entities, which is why SOMEONE/SOMETHING is filled in on the source side. The Macmillan or Longman dictionaries cannot be used for filling in slot b since this specialized contextual meaning of *defence* cannot be found in these general language reference works. In this context, it refers to a measure taken by a company to prevent its acquisition by another company, which is why PREVENT-ACQUISITION is filled into the open target domain slot. In step 4 I name the domains in a specific fashion first, staying close to the labels for the argument slots: the target domain label is thus named PREVENT-ACQUISITION and I derive the domain label for the source domain, DEFENCE, from the second argument in the source domain. Again, a formulation at a higher level of abstraction may also be chosen. The hypernym for PREVENTION suggested by Wordnet is HINDRANCE. The hypernym for DEFENCE is PROTECTION. The sense descriptions of both *defence* and *protection* in the dictionaries imply physical violence (e.g. “harm, injury, damage”). The source domain is thus likely more general, including all sorts of physical violence, and is not restricted to the domain WAR. This more encompassing

mapping is made explicit in step 5 (PREVENT-ACQUISITION IS DEFENCE//HINDRANCE IS PROTECTION or, making the physical component more explicit, HINDRANCE IS PHYSICAL CONFLICT).

While a top-down approach is likely to assume the conceptual metaphor BUSINESS IS WAR for the three items *winning*, *battle* and *defence*, the bottom-up approach taken by the 5-step method has made explicit that the analyst must be cautious when deriving conceptual structures from linguistic examples. To summarize, the analysis of *battle* did show that a source domain of MILITARY ACTION is most plausible. For *defence* and *winning*, however, this was less clear. Taken to a different level of abstraction, the domain for *defence* is labeled PROTECTION to account for the general basic sense ‘actions that you take to protect someone or something that is being attacked’. This source domain can be rephrased even more generally as PHYSICAL CONFLICT and includes but is not restricted to violence related to war. This finding is also compatible with Ahrens’ et al.’s (2003, p. 40) analysis of the target domain ECONOMY in Mandarin Chinese, where they found that the mapping ECONOMY IS WAR is subsumed under a more general ECONOMY IS CONTEST mapping. This is similar to the result for *winning* a bid for which the mapping SUCCEEDING IN A BID IS WINNING A COMPETITION was suggested, which may include but is not restricted to WAR.

These results fully agree with Semino’s (2005) corpus study of aggression-related metaphors for communication in news reports (e.g. “*firing* questions”, “The chancellor also *defended* his stand (...)”, “M Delors *attacked* M Balladur’s idea” etc. (p. 51)). Based on her findings she argues for a more general conceptual metaphor ANTAGONISTIC COMMUNICATION IS PHYSICAL AGGRESSION instead of an ARGUMENT IS WAR mapping. The source domain of physical conflict and aggression for her corpus examples ranged from “fisticuffs through armed attack to full-blown war” (Semino, 2008, p. 210). The present five-step analysis suggests that the same is true for expressions that have been cited as evidence for a BUSINESS IS WAR metaphor. Words like *winning* or *defence* may be best explained in terms of physical violence generally. Their underlying conceptual structure is thus also better captured by a more general PHYSICAL CONFLICT source domain.

These examples show that an analyst must consider more than one candidate mapping. This is best made apparent by an approach that does not make any presumptions about conceptual metaphors, but that instead starts from linguistic evidence and derives underlying conceptual structures of each single concept in a step-by-step fashion (Steen, 1999, 2009). In order to constrain step 4, the identification of the analogical structure, and step 5, the

identification of cross-domain mappings as much as possible, using dictionaries (for filling in open slots) and Wordnet (for labeling domains at different levels of abstraction) have proven to be helpful tools.

As with linguistic metaphor identification, conceptual metaphor identification needs to be based less on intuition and more on an explicit procedure that helps control the process of formulating conceptual mappings. It is more difficult to work with the fuzzier domains on a conceptual level than with the sense descriptions in a dictionary. The five-step framework, though imposing some control on the process, still allows for intuitive interpretations for source target concepts, particularly in step 4 when open slots are filled and domains are labeled (see also Semino et al., 2004).

Using dictionaries as well as Wordnet as tools for step 4 helps constrain the intuitive process of filling in open slots to a certain degree. As has been illustrated, dictionaries are an integral part of step 1 (linguistic metaphor identification). The analyst compares and contrasts the contextual and basic meanings of a word in the dictionary in order to determine the metaphorical status of a lexical unit. In principle, comparing and contrasting contextual and basic meanings is an activity on a linguistic level, since the analyst is not concerned with formulating source and target domains and establishing relationships between them. Sense descriptions, however, also capture conceptual knowledge, since they make explicit what kind of concepts are involved in the meaning of a word and how they are related. For example, the basic meaning of the verb *buy* is ‘to get something by paying money for it’. This meaning involves money, something that is transferred, and a person to whom something is transferred. This conceptual structure revealed by sense descriptions is useful for constructing conceptual mappings between source domain structures and target domain structures. For example, as demonstrated for *win* above, the conceptual structure of its sense description reveals that its basic sense involves people only (‘to defeat *everyone* else’), which is why SOMEONE was filled into the open source domain slot (*x*). It also suggests the object that is won – a competition. The concept COMPETITION is thus selected to fill the second source domain slot (*y*).

There is still some room for interpretation, since the dictionary may suggest more than one option. This is the case in the description of Longman, which additionally lists the more specific “game” and “election” in addition to “competition”. Different dictionaries have slightly different sense descriptions and may thus sometimes offer differing concepts for filling in the open slots of the analogy. Nevertheless, the use of dictionaries at this conceptual level is one option to restrict the process of determining concepts involved in a mapping.

Most importantly, it makes the process of finding these concepts explicit and transparent.

The source and target domain labels are derived from the concepts that have been used to fill in the open slots. If the analysis wishes to formulate source and target domain labels at a higher level of abstraction, the hypernym function of Wordnet is one possible tool to constrain this process. This again adds transparency and a systematic aspect to the process of formulating conceptual mappings.

8.3 Top-down versus bottom-up analyses

The bottom-up approach taken in the previous section has shown that a set of linguistic evidence that intuitively belongs to the exact same mapping can be interpreted in several different ways. There may be more than one plausible source or target concept and different ways of formulating cross-domain mappings. The five-step method helps the analyst to develop an awareness of the challenges involved in determining what kind of concepts are mapped onto which target concepts and at which level of abstraction a mapping may be formulated. Such a fine-grained view of linguistic data may be overlooked when taking a top-down approach, a priori assuming particular conceptual metaphors that seem to intuitively fit a number of metaphorical expressions in the text.

Gibbs (2002, pp. 80-81) criticizes the five-step method for being primarily inductive and points out the usefulness of a deductive approach for not only identifying a metaphorical expression but also for “specifying quite precisely what kind of metaphorical mapping it illustrates.” The following section demonstrates the fundamental difference between deductive and inductive approaches to metaphor identification. In order to show how analytical processes differ in a bottom-up versus a top-down approach, I developed an adapted version of the five-step method. I will also show that approaching metaphor from the one or the other perspective may lead to different source-target mappings.

An analyst reading the business text discussed above (excerpt reprinted below) may quickly conclude that the first paragraph of the text is built around the conceptual metaphor BUSINESS IS WAR when they come across the metaphorical expressions *winning*, *battle* and *defence*.

- (3) Container group Tiphook yesterday said that it was still confident of *winning* its joint £643 million bid for Sea Containers even though the *battle* has swung towards James Sherwood's ferries-to-trailers combine. The offer from the Anglo-Swedish consortium formed by Tiphook and Stena AB is the subject of an appeal in the Bermudan courts which is aimed at overturning an earlier ruling allowing SeaCo to proceed with its 'poison pill' *defence*. (A8U-fragment14)

Applying the five-step method to these data I demonstrated that analysts should exercise caution before assuming such general conceptual patterns for multiple seemingly related expressions, but I will now add more explicit detail to this finding by opposing deductive and inductive approaches to metaphor identification – two quite different analytical processes. The lexeme *winning* will again be subjected to a bottom-up process, starting out from the linguistic level without making assumptions of underlying mappings right away, but this time introducing an adjustment to one of the steps in the protocol, as will be explicated further below. All three lexemes – *winning*, *battle* and *defence* – will then be analyzed from a top-down perspective, starting out from a conceptual metaphor that is intuitively applicable. It will be demonstrated that for these two contrasting approaches, not only the decisions on labeling the conceptual domains may differ but also the elements that are being mapped.

A transparent analysis of the two diverging approaches requires breaking up Steen's step 4 into two substeps. The differences between a top-down and a bottom-up analysis begin to surface in step 4, where empty slots are filled and the source and the target domain are labeled. In a bottom-up approach, the analyst first fills the empty slots of the open comparison and only then derives the labels for the source and the target domain. A top-down approach takes the opposite route. Since the conceptual mapping is formulated as an initial step, the analyst first names the source and target domain and only then works out concepts involved in the mapping. In order to make these different thought processes explicit, I break up step 4 into step 4a and step 4b. Table 8.7

Table 8.7

Different processes in bottom-up and top-down approaches

step	bottom-up approach	top-down approach
Step 4a	identification of concepts involved in the mapping	identification of source and target domain
Step 4b	identification of source and target domain	identification of concepts involved in the mapping

explicates both substeps in both a bottom-up approach (left) and a top-down approach (right).

I will first put *winning* from the above newspaper excerpt through this adapted version of the five-step method in a bottom-up fashion in order to demonstrate this further development of the five-step procedure (Table 8.8). Then I will analyze all three lexemes that were approached in a bottom-up fashion in the previous section in a top-down manner and will compare the results to the output of the bottom-up approach. Step 2, the identification of propositions, is not given again but can be referred to in Table 8.1 of this chapter.

By splitting up step 4 into step 4a (identification of concepts involved in the mapping) and step 4b (identification of source and target domain) the

Table 8.8

Adaptation of 5-step method – bottom up analysis of ‘winning’

Text	Container group Tiphook yesterday said that it was still confident of <i>winning</i> its joint £643 million bid (...)
Step 3 Identification of open comparison	Derived from S1-DU1-P8: (WIN _s TIPHOOK BID _s) SIM { $\exists F, \exists x, y$ (F TIPHOOK BID) _T (WIN x y) _S }
Step 4a Identification of concepts involved in the mapping	Derived from S1-DU1-P8: (WIN _s TIPHOOK BID _s) SIM (SUCCEED-IN TIPHOOK BID) _T (WIN SOMEONE COMPETITION) _S }
Step 4b Identification of source and target domain	Derived from S1-DU1-P8: (WIN _s TIPHOOK BID _s) SIM (SUCCEED-IN TIPHOOK BID) _{T=SUCCEEDING} (WIN SOMEONE COMPETITION) _{S=WINNING} }
Step 5 Identification of cross-domain mapping	Derived from S1-DU1-P8: (WIN _s TIPHOOK BID _s) T S SUCCEED ← WIN TIPHOOK ← SOMEONE BID ← COMPETITION(=GAME/ELECTION/ RACE/WAR/BATTLE)
	SUCCEEDING IS WINNING SUCCEEDING IN A BID IS WINNING A COMPETITION (more specific)

thought processes in bottom-up approaches are made explicit. In step 4a the analyst finds appropriate source and target concepts to fill the open slots created in step 3, as has been detailed earlier. In the present example these are the concepts SOMEONE and COMPETITION in the source domain frame and SUCCEED-IN in the target domain frame. Only after the slots have been filled is the researcher concerned with formulating source and target domains that are representative of the analogy. This is step 4b where the domains are labeled as WINNING (source domain) and SUCCEEDING (target domain).

In a top-down process (Table 8.9), step 4a and 4b are applied in the exact opposite order. The researcher starts out from the assumed conceptual metaphor BUSINESS IS WAR. Therefore, the first step in filling in the open comparison is to name the domains, as detailed in step 4a. Derived from the conceptual metaphor, the target domain frame is labeled BUSINESS and the source bracket is labeled WAR. Based on these domain labels, the analyst then

Table 8.9

Adaptation of 5-step method – top-down analysis of ‘winning’

Text	Container group Tiphook yesterday said that it was still confident of <i>winning</i> its joint £643 million bid (...)
Step 3 Identification of open comparison	Derived from S1-DU1-P8: (WIN _s TIPHOOK BID _s) SIM { $\exists F, \exists x, y$ (F TIPHOOK BID) _T (WIN x y) _s }
Step 4a Identification of source and target domain	Derived from S1-DU1-P8: (WIN _s TIPHOOK BID _s) SIM (F TIPHOOK BID) _{T=BUSINESS} (WIN x y) _{S=WAR} }
Step 4b Identification of concepts involved in the mapping	Derived from S1-DU1-P8: (WIN _s TIPHOOK BID _s) SIM (SUCCEED-IN TIPHOOK BID) _{T=BUSINESS} (WIN COUNTRY WAR) _{S=WAR} }
Step 5 Identification of cross-domain mapping	Derived from S1-DU1-P8: (WIN _s TIPHOOK BID _s) T S SUCCEED ← WIN TIPHOOK ← COUNTRY BID ← WAR BUSINESS IS WAR

fills in the open slots of step 3. In order to simulate a traditional top-down approach, slots may be filled purely based on intuition guided by the presumed conceptual metaphor BUSINESS IS WAR. In order to ensure comparability with a bottom-up approach for which I did make use of dictionaries, however, I also employ dictionaries for filling the slots in a top-down approach. Contrary to the inductive approach, I now only consider entries that best reflect the presumed WAR source domain.

SUCCEED-IN is chosen to fill the open target domain slot, just as in the bottom-up analysis presented above. The dictionary entries for *win* in Macmillan contain a reference to *war* ('to achieve victory in a war, battle, or argument'), which is why WAR is filled into the open source domain slot *y*. Since there is no reference to an agent, a check of the entry *war* is helpful: 'fighting between two or more countries that involves the use of armed forces and usually continues for a long time'. Based on this sense description, the concept COUNTRY is chosen for slot *x* as a match to the source domain WAR.

As can be seen from step 5, the source and target correspondences extracted in top-down and bottom-up approaches differ. While they are more general in an inductive approach (SOMEONE was mapped onto TIPHOOK and COMPETITION onto BID), they are specific to the concept of WAR (COUNTRY is mapped onto TIPHOOK and WAR onto BID).

The second item that has been analyzed from the bottom up in the previous section, *battle*, is now also subjected to a top-down approach (Table 8.10). Again, as in the above analysis of *winning*, the domains are labeled first (BUSINESS and WAR) based on the conceptual metaphor BUSINESS IS WAR (step 4a). Based on these labels, the open slots from step 3 are filled in step 4b. COMPETITION is chosen as a target domain equivalent of BATTLE. The open argument slot of the source domain bracket is filled with the concept OPPOSING ARMY, based on the sense description of *battle* – 'a fight between opposing armies, groups of ships, groups of people etc, especially one that is part of a larger war' from Longman.

The conceptual mapping BUSINESS IS WAR is closely related to the mapping found in a bottom-up analysis of BATTLE (a business relation is military action). The concepts involved in the mapping are, however, not quite the same. The inductive approach suggests a mapping from OPPONENT to COMBINE (James Sherwood's ferries-to-trailers combine), which is compatible with a WAR source domain but not necessarily prototypical. The deductive approach aligns the concepts COMBINE and OPPOSING ARMY. The latter is more directly connected to a WAR domain than the concept OPPONENT.

Table 8.10
Top-down analysis of 'battle'

Text	(...) even though the <i>battle</i> has swung towards James Sherwood's ferries-to-trailers combine.
Step 3	Derived from S1-DU2-P1: (SWING _s BATTLE _s) and S1-DU2-P2: (TOWARDS _s P1 COMBINE)
Identification of comparison	SIM (∃G, ∃a, y (CHANGE-IN-FAVOR-OF a COMBINE) _T (G BATTLE y) _S }
Step 4a	Derived from S1-DU2-P1: (SWING _s BATTLE _s) and S1-DU2-P2: (TOWARDS _s P1 COMBINE)
Identification of source and target domain	SIM (CHANGE-IN-FAVOR-OF a COMBINE) _{T=BUSINESS} (G BATTLE y) _{S=WAR} }
Step 4b	Derived from S1-DU2-P1: (SWING _s BATTLE _s) and S1-DU2-P2: (TOWARDS _s P1 COMBINE)
Identification of concepts involved in the mapping	SIM (CHANGE-IN-FAVOR-OF COMPETITION COMBINE) _{T=BUSINESS} (CHANGE-IN-FAVOR-OF BATTLE OPPOSING ARMY) _{S=WAR} }
Step 5	Derived from S1-DU2-P1: (SWING _s BATTLE _s) and S1-DU2-P2: (TOWARDS _s P1 COMBINE)
Identification of cross-domain mapping	T S CHANGE-IN-FAVOR-OF ← CHANGE-IN-FAVOR-OF COMPETITION ← BATTLE COMBINE ← OPPOSING ARMY
BUSINESS IS WAR	

Finally, *defence* is approached from a top-down perspective (Table 8.11). A bottom-up procedure has suggested a more general mapping than WAR, namely PHYSICAL CONFLICT. Just as in the previous top-down analyses, step 4a labels the domains BUSINESS and WAR based on the presumed conceptual metaphor BUSINESS IS WAR. Starting from those domain labels, matching target and source concepts are sought. For the open argument slot in the target domain PREVENT-ACQUISITION, the same concept as in a bottom-up approach is selected. COUNTRY was chosen as an appropriate source domain concept based on the Longman entry for *defence* – ‘all the systems, people, materials etc. that a country uses to protect itself from attack’.

Table 8.11
Top-down analysis of 'defence'

Text	(...) which is aimed at overturning an earlier ruling allowing SeaCo to proceed with its 'poison pill' <i>defence</i> .												
Step 3 Identification of open comparison	<p>Derived from S2-DU1-P15: (PROCEED_s SEACO) and S2-DU1-P16: (WITH_s P15 DEFENCE_s)</p> <p>SIM {∃G, ∃b,x (CONTINUE P15 b)_T (G x DEFENCE)_s }</p>												
Step 4a Identification of source and target domains	<p>Derived from S2-DU1-P15: (PROCEED_s SEACO) and S2-DU1-P16: (WITH_s P15 DEFENCE_s)</p> <p>SIM (CONTINUE P15 b)_{T=BUSINESS} (G x DEFENCE)_{S=WAR} }</p>												
Step 4b Identification of concepts involved in the mapping	<p>Derived from S2-DU1-P15: (PROCEED_s SEACO) and S2-DU1-P16: (WITH_s P15 DEFENCE_s)</p> <p>SIM (CONTINUE SEACO PREVENT-ACQUISITION)_{T=BUSINESS} (CONTINUE COUNTRY DEFENCE)_{S=WAR} }</p>												
Step 5 Identification of cross-domain mapping	<p>Derived from S2-DU1-P15: (PROCEED_s SEACO) and S2-DU1-P16: (WITH_s P15 DEFENCE_s)</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">T</td> <td style="width: 10%;"></td> <td style="width: 50%;">S</td> </tr> <tr> <td>CONTINUE</td> <td style="text-align: center;">←</td> <td>CONTINUE</td> </tr> <tr> <td>SEACO</td> <td style="text-align: center;">←</td> <td>COUNTRY</td> </tr> <tr> <td>PREVENT-ACQUISITION</td> <td style="text-align: center;">←</td> <td>DEFENCE</td> </tr> </table> <p style="text-align: center;">BUSINESS IS WAR</p>	T		S	CONTINUE	←	CONTINUE	SEACO	←	COUNTRY	PREVENT-ACQUISITION	←	DEFENCE
T		S											
CONTINUE	←	CONTINUE											
SEACO	←	COUNTRY											
PREVENT-ACQUISITION	←	DEFENCE											

Similarly to the other two analyzed lexemes, the concepts that are part of the cross-domain mapping are not quite the same in the two analytical procedures. While the top-down approach arrived at the source concept COUNTRY being mapped onto the target domain, the bottom-up approach stays general (SOMEONE/SOMETHING) as a reflection of a conceptual mapping that encompasses physical conflict more generally.

To summarize, the two analytical routes – a bottom-up and a top-down approach – that have been applied to *winning*, *battle* and *defence*, as used in a business news article, lead to different results. These results differ, first, in terms of the conceptual metaphors they suggest and, second, in terms of the concepts involved on the source domain and the target domain side of the

analogy. Table 8.12 provides an overview of the results of the cross-domain mappings.

The inductive approach to the three lexemes has shown that a mapping from BUSINESS to WAR is only appropriate for BATTLE. More general conceptual mappings have been proposed for WINNING (SUCCEEDING IS WINNING) and defence (HINDRANCE IS PHYSICAL CONFLICT). A top-down approach likely starts out from a BUSINESS IS WAR metaphor, which has frequently been cited in cognitive linguistic research. The five-step bottom-up analysis has shown, however, that not all three metaphorical expressions can best be explained by this mapping.

A deductive approach to the same data has revealed that presuming the conceptual metaphor BUSINESS IS WAR from the onset of data analysis likely

Table 8.12

Cross-domain mappings for bottom-up versus top-down approaches for 'winning', 'battle' and 'defence'

lexeme	bottom up		top-down	
<i>winning</i>	T	S	T	S
	SUCCEED ←	WIN	SUCCEED ←	WIN
	TIPHOOK ←	SOMEONE	TIPHOOK ←	COUNTRY
	BID ←	COMPETITION	BID ←	WAR
	SUCCEEDING IS WINNING		BUSINESS IS WAR	
	SUCCEEDING IN A BID IS WINNING A COMPETITION			
<i>battle</i>	T	S	T	S
	CHANGE-IN- ←	CHANGE-IN-FAVOR-OF FAVOR-OF	CHANGE-IN- ←	CHANGE-IN- FAVOR-OF
	COMPETITION ←	BATTLE	COMPETITION ←	BATTLE
	COMBINE ←	OPPONENT	COMBINE ←	OPPOSING ARMY
	A COMPETITION IS A BATTLE		BUSINESS IS WAR	
	A BUSINESS RELATION IS MILITARY ACTION			
<i>defence</i>	T	S	T	S
	CONTINUE ←	CONTINUE	CONTINUE ←	CONTINUE
	SEACO ←	SO./STH.	SEACO ←	COUNTRY
	PREVENT- ←	DEFENCE	PREVENT- ←	DEFENCE
	ACQUISITION		ACQUISITION	
	PREVENT-ACQUISITION IS DEFENCE		BUSINESS IS WAR	
HINDRANCE IS PHYSICAL CONFLICT				

leads to the inclusion of different concepts in the mapping than those selected in a bottom-up approach. For example, concepts selected by a bottom-up approach remain general (e.g. SOMEONE is aligned with TIPHOOK and BID with COMPETITION). A top-down approach suggests clearly war-related concepts. COUNTRY is mapped onto TIPHOOK and WAR onto BID. Even though the conceptual mappings for BATTLE are war-related in both approaches, there are slight differences in the kind of concepts that are involved. While the bottom-up approach names OPPONENT, which is not necessarily restricted to WAR alone, the top-down approach favors the concept OPPOSING ARMY. The results for the two perspectives are also not identical for the third lexeme, *defence*. The bottom-up approach again suggests a more general source domain that encompasses all kinds of physical conflicts and is not restricted to WAR. As a consequence, the concept describing the agent is general (SOMETHING/SOMEONE) in a bottom-up approach. In a top-down analysis, the source concepts are more specific to war (COUNTRY, DEFENCE).

Comparing the two types of analysis has also shown that an inductive approach can be constrained by aids such as dictionaries and Wordnet. In order to ensure comparability between the bottom-up and the top-down approaches taken in this analysis, dictionaries were also employed in a top-down approach. A purely intuition-based top-down approach would likely suggest a wider range of potential concepts that may be involved in a mapping. For example, the analysis of *defence* might as well have provided the source domain concepts ARMY, BATTALION or REGIMENT instead of COUNTRY.

8.4 Conclusion

One pattern of metaphorical language use that can be found in news texts is clusters of metaphorical expressions of related semantic fields in close proximity. Metaphor analysis that approaches such news texts in a top-down fashion is likely to suggest one underlying metaphor for those related expressions. Taking an approach that does not presume a conceptual metaphor from the onset of detailed data analysis has shown, however, that not all of these related expressions are necessarily best described by the same underlying conceptual metaphor. For example, while a top-down approach to the lexemes *winning*, *battle* and *defence* in a business news report may suggest the conceptual metaphor BUSINESS IS WAR, a bottom-approach arrives at a more general source domain of PHYSICAL CONFLICT as more appropriate to describe the pattern as a pattern.

By using a transparent step-by-step procedure I have made such considerations more explicit. The analysis has discussed the challenges an analyst faces in the process and has highlighted the need to be aware of alternative possibilities in constructing cross-domain mappings, such as the exact labels that are given to source and target domains, the kind of concepts involved in a mapping and the level of abstraction at which the cross-domain mapping is formulated. Thus there may be several plausible mappings that an analyst needs to consider. Despite this systematic approach, finding appropriate source – target mappings is still subject to some degree of interpretation by the analyst. I have suggested the use of tools such as dictionaries (for finding source and target concepts that are being mapped) and Wordnet (for formulating domain labels at different levels of abstractions) as one option of adding further constraint to the process. This is a further step to make conceptual metaphor identification rely less on intuition but more on an explicit procedure. I have also adapted the 5-step procedure in a way that allows comparing and contrasting the two different analytical routes of deductive and inductive methods. This analysis has revealed that bottom-up and top-down approaches may not only differ in the kind of cross-domain mapping that they formulate but also in the concepts that are determined to be involved in the mapping.

As with the analysis of linguistic metaphor in news, the analysis of the conceptual structure behind *winning*, *battle* and *defence* is an analytical process kept on an abstract level. Determining these three lexemes as metaphorically used in the context of a business news article does not mean that people recognize them as metaphorically used or process them as cross-domain mappings. In the same way, determining the underlying conceptual structure of *winning* as SUCCEEDING IS WINNING, of *battle* as a BUSINESS RELATION IS MILITARY ACTION and of *defence* as HINDRANCE IS PHYSICAL CONFLICT, does not mean that people reading the expressions actually perform exactly these mappings or any cross-domain mappings at all. As metaphorically used expressions have the potential to be realized as cross-domain mappings, the conceptual mappings identified with the five-step procedure are also potential in the sense that only experimental testing can give an insight as to whether a mapping is realized or not or what kind of mapping it may be. The final chapter of this thesis will move on to this behavioral level of analysis by looking at the conditions under which an extended metaphor in a business news report may become part of peoples' mental representation of the text.

CHAPTER 9

Do people think metaphorically when reading text?

9.1 Introduction

The MIPVU procedure, described in Chapter 3, has been used to identify metaphors and build an annotated database. Chapter 8 discussed the delicate task of revealing metaphors' underlying mappings on a conceptual level. The challenge of getting from linguistic metaphor to conceptual mappings carries over to metaphor processing. Just as arriving at conceptual underpinnings of linguistic metaphor is not straightforward, neither is getting at the representation of conceptual structures in people's minds. As Tendahl and Gibbs (2008, p. 1842) point out "(...) cognitive linguistic theories suffer from a lack of precision as to exactly how metaphorical thought is recruited during linguistic interpretation."

Simply because we can identify words or phrases that are metaphorically used on a symbolic level does not mean that we actually think metaphorically. For example, when writing about economic competition, people will use movement metaphors like *accelerating* economy. Does this mean they actually think of cars or racing? The symbolic analysis, using MIPVU as a tool, marked all metaphor related words in news texts for which language users could *potentially* create a mapping. The focus of this chapter is determining under which conditions this indeed occurs when reading a news report.

Prior chapters have shown that news, compared to other registers such as fiction and conversation, ranks high in metaphorical language use. I have also discussed the fact that the bulk of metaphorical language journalists use is not deliberately employed. Metaphorical expressions in news articles thus contribute mainly to textual cohesion and reduce both textual and conceptual complexity. There are, however, metaphorical patterns that do create rhetorical effects and are likely deliberately used. Topic-triggered or extended metaphors, for example, may be used to grab the readers' attention. They aim to create humorous effects or can have a persuasive function. Their persuasive potential has been a source of significant interest in researching metaphor in news discourse because newspapers play a significant role in shaping public opinion. Encountering metaphorical patterns such as, for instance, extended mappings,

potentially influence peoples' views on a topic and consequently their opinions and actions. Whether people actually do build their textual representations on a metaphorical schema, however, does not follow automatically from the mere existence of such mappings in the text itself. Knowing under which conditions people build their mental representation of a text on a metaphorical schema has practical implications for text design in journalistic writing.

Lakoff and Johnson (1980) claim that the human conceptual system is largely metaphorical and metaphorical mappings are thus essential. According to them, if people read that “the economy is *accelerating*”, people will typically access a preexisting mapping from memory – from the domain of auto racing or driving to the domain of economic competition. Lakoff and Johnson compiled systematic sets of linguistic expressions, which they offer as evidence that we understand the linguistic expressions we are using through metaphorical mappings. For instance, they list the examples below as reflecting the conceptual metaphors THEORIES and ARGUMENTS ARE BUILDINGS (1980, p. 46):

Is that the *foundation* of your theory?
 The theory needs more *support*.
 The argument is *shaky*.
 We need some more facts or the argument will *fall apart*.
 We need to *construct a strong* argument for that.
 I haven't figured out yet what the *form* of the argument will be.
 Here are some more facts to *shore up* your theory.
 We need to *buttress* the theory with *solid* arguments.
 The theory will *stand or fall* on the *strength* of that argument.
 The argument *collapsed*.
 They *exploded* his latest theory.
 We will show that theory to be without *foundation*.
 So far we have put together only the *framework* of the theory.

These expressions are all very conventional but according to Lakoff and Johnson's theory of conceptual metaphor, the metaphorical connections between theories and buildings and arguments and buildings are essential for understanding the meaning of these expressions.

While Lakoff and Johnson (1980) collected “families” of metaphors, they were not interested in whether such related expressions also occur together in actual discourse or, if so, whether people would even be aware of their conceptual underpinnings. In fact, Lakoff and Johnson's (1980) examples in support of the conceptual metaphor theory only make sense because they are presented in groups. Only through the grouping are the metaphorical

expressions drawn into one encompassing conceptual metaphor. In isolation, their underlying mapping is not straightforward. For instance, consider “The argument is shaky”. The basic meanings of *shaky* are ‘feeling weak or unable to walk or move without shaking, for example because you are very ill’ and ‘not firm and likely to fall’. None of these point specifically to buildings. Objects of all kinds can be shaky. In other words, this term is potentially consistent with different metaphorical mappings. Thus, if this sentence stands by itself, there is no strong case for an underlying conceptual metaphor of ARGUMENTS ARE BUILDINGS. If the expression is presented together with the examples above, however, it is drawn into one common building schema.

Conceptual metaphor theory has had widespread influence on views on language and thought but remains controversial (e.g. Jackendoff & Aaron, 1991; Verwaeke & Green, 1997; Verwaeke & Kennedy, 1996). Murphy (1996, 1997) criticizes using linguistic evidence for conceptual metaphor, arguing that it is based on the assumption that speech patterns are a direct reflection of conceptual structure. Research into conceptual representations typically does not only employ verbal materials but also non-linguistic and artificial stimuli, i.e. invented by the experimenter and unlikely to be found in actual language use. The reliance of conceptual metaphor theory on verbal materials only is therefore, according to Murphy (1997), problematic.

Studies on metaphor and text comprehension

Numerous studies have put Lakoff and Johnson’s (1980) claims to the test. While some have found evidence that suggests people make use of conceptual mappings when understanding metaphorical language (e.g. Allbritton et al., 1995; Nayak & Gibbs, 1990), others produced opposite results. Keysar et al. (2000), for instance, argue that “conventional expressions can be understood directly, without recourse to underlying conceptual mappings”, via polysemy. Taking the examples from above, the words we use to talk about buildings and those that we use to talk about theories or arguments are systematically related by polysemy which allows direct access to a word’s contextually appropriate meaning.

Gibbs (1994, p. 18) formulates alternative hypotheses regarding the influence of metaphor on language use and understanding: 1) Metaphorical thought is connected neither to the development of linguistic meaning through history nor to people’s ordinary understanding of language. 2) While metaphorical thought influences changes in the meaning of expressions over time, it does not motivate language understanding and use of speakers today. 3) It does motivate the current meanings of expressions, or it may play a role

in an idealized speakers' or hearer's understanding, but it does not play any part within the individual speaker's language processing. 4) Figurative thought motivates people's sense for why certain linguistic expressions mean what they mean, but people do not automatically activate a mapping in the on-line production or comprehension process. 5) Metaphorical thought is automatically activated in on-line production and comprehension processes. McGlone (1996, p. 547) summarizes slightly different but compatible hypotheses about the role of conceptual metaphors in comprehending metaphorical expressions: 1) Conceptual metaphors do not play a role. When made aware of a metaphor, people appreciate it but it is not represented in their conceptual knowledge. 2) Conceptual metaphors are not necessary for immediate comprehension but they are available for retrieval under certain circumstances. McGlone points to Nayak and Gibbs (1990) who showed that conceptual metaphors can be recognized when the context biases people to specific mappings. 3) As Lakoff (1993) suggests, conceptual metaphors are used automatically during on-line language comprehension. They are accessible in any context.

The majority of the studies testing the claim that people routinely use conceptual mappings to process metaphorical language have used on-line measures such as reaction and reading times. They test whether processing of a target sentence is disrupted when its underlying mapping is either consistent or inconsistent with mappings established in a preceding context. Reading time is thus taken as an indicator of processing difficulty (e.g. Allbritton et al., 1995; Boronat, 1990; Keysar et al., 2000; Thibodeau & Durgin, 2008). The findings from these studies are inconsistent. Some present evidence that conceptual metaphors are available even for conventional metaphorical expressions (e.g. Thibodeau & Durgin, 2008), while others claim that people rely on conceptual metaphors for novel expressions only (e.g. Keysar et al., 2000). Results are also mixed for idiom comprehension. Some studies conclude that metaphorical mappings are accessed (e.g. Gibbs et al., 1997; Gibbs & O'Brian, 1990; Nayak & Gibbs, 1990) but others found that mappings are not used in comprehending idioms (e.g. Glucksberg, Brown, & McGlone, 1993). Given these mixed results, an alternative approach may shed new light on this issue. A discussion of these on-line studies – the questions asked, their experimental setup and the material used – will lay the groundwork for the motivations of the off-line study I conducted: a recall task examines under which conditions an extended auto racing metaphor in a text on economic competition becomes part of the mental model of the text.

Since prior reading time studies and memory tasks provide the motivating theoretical and practical background for the present experiment, both as far as the manipulated variables and the material design is concerned, neuroscientific (for an overview see e.g. Coulson, 2008; Lai, Curran, & Menn, 2009) and eye-tracking research (e.g. Blasko & Briehl, 1997) into metaphor processing will not be discussed in this context. While there is some observational behavioral research, for example in the field of gesture studies on degrees of metaphor activation (Müller, 2008a, 2008b) or the analysis of think-aloud protocols (e.g. Cameron, 2003; Steen, 1994), the focus here will be on experiments rather than observation-based studies.

Boronat (1990) (also reported in Gentner, Bowdle, Wolff, & Boronat, 2001, pp. 211ff) was among the first to examine the validity of cross-domain mappings in online-processing of extended metaphors. An extended metaphor is made up of several metaphorical expressions used in close proximity that belong to the same source domain and describe the same topic (Semino, 2008, p. 25). The expressions are usually connected to a consistent schema (Goatly, 1997, p. 264). Extended metaphors are not the same as Lakoff and Johnson's (1980) notion of conceptual metaphors. They are just one of several ways conceptual structure can surface linguistically. (Other ways of expressing conceptual metaphors are simile, analogy, indirect metaphor etc.). If people comprehend extended metaphors by setting up consistent and systematic cross-domain mappings, a metaphorical expression that is inconsistent with these mappings should slow down processing.

Boronat (1990) hence designed short text passages, each of which instantiated a conceptual metaphor. For example, one of the passages described a debate, using novel metaphors from the same source domain. In one condition the topic of the text (debate) was described as a race (e.g. "If he could only *keep up the pace*, he had a good chance of winning."), in another condition as war (e.g. "If he could only *marshal his forces*, he had a good chance of winning.") The target sentence ("His skill left his opponent *far behind him* at the *finish line*") was consistent with the first scenario (race) but inconsistent with the second (war). Compared to the inconsistent condition and the control condition, the last sentence was read significantly faster when it was consistent with the extended mapping from the previous context. This suggests that the subjects constructed source-target mappings when they were processing the text. The switch from the domain of WAR to the domain of RACING surfaced in longer reading times of the target sentence.

When the scenario did not contain novel but conventional metaphorical expressions, there was no facilitating effect for reading the target sentence. In

contrast to novel expressions, conventionalized metaphorical expressions may not be processed on-line by constructing relevant cross-domain mappings but stored meanings may be simply retrieved because, as meanings become conventionalized, they become stored with the base term.

Note that Boronat (1990) introduced the conceptual metaphor by a simile in the novel metaphor scenarios (e.g. “Dan saw the big debate as a war” or “Dan saw the big debate as a race.”) The mapping was, however, not explicitly stated in the conventional scenarios. This confounds a straightforward interpretation of the effect of conventionality.

Boronat’s (1990) finding is consistent with the Career of Metaphor theory (Bowdle & Gentner, 2005), which suggests that conventional metaphors are not processed via comparison of two domains but by categorization. Shen and Balaban’s (1999, p. 152) study of metaphorical coherence in discourse supports this claim. They found that metaphorical expressions are not coherently distributed across unplanned discourse. They reason that “the fact that conventional metaphorical instantiations of a given metaphor appear in a given discourse does not necessarily seem to reflect a corresponding activation (in the producer’s mind) of the root metaphor” (i.e. a common conceptual metaphor).

A more recent experiment developing Boronat’s (1990) study obtained consistent findings (Keysar et al., 2000). Unlike Boronat (1990), they were not only interested in the effect of conventionality but also in the effect of making the source-target mapping explicit. Keysar et al.’s (2000) reasoning was similar to Boronat (1990): if people make use of conceptual mappings when understanding metaphorical expressions, the comprehension of a non-conventional expression that is consistent with a mapping established in preceding sentences should be facilitated. They further hypothesized that people make use of conceptual mappings only under certain conditions. Like Boronat (1990) they suggested that mappings are set up for novel expressions. They added, however, that conceptual mappings would also be used when an explicit statement points out the analogy. Keysar et al. (2000) used material that was mostly based on examples collected by Lakoff and Johnson (1980). Below are examples of such scenarios with the final target sentence (in italics): (1) a no-mapping scenario, (2) an implicit mapping scenario, and (3) a scenario in which the mapping has been made explicit. Expressions setting up the metaphorical scenario are underlined.

- (1) As a scientist, Tina thinks of her theories as her contribution. She is a dedicated researcher, initiating an enormous number of new findings each year. *Tina is currently weaning her latest child.*

- (2) As a scientist, Tina thinks of her theories as her contribution. She is a prolific researcher, conceiving an enormous number of new findings each year. *Tina is currently weaning her latest child.*
- (3) As a scientist, Tina thinks of her theories as her children. She is a prolific researcher, conceiving an enormous number of new findings each year. *Tina is currently weaning her latest child.*

A matching target sentence following a scenario that instantiated a mapping was not read significantly faster compared to a scenario that did not instantiate a mapping, irrespective of whether the mapping was made explicit by a simile or an A is B metaphor (“explicit-mapping condition”) or not (“implicit-mapping condition”). When the conventional expressions in the explicit mapping condition were replaced with novel ones, people did make use of such mappings.

According to Keysar et al. (2000) the results suggest that the conventional expressions *prolific* and *conceiving* can be understood directly and not through the construction of a mapping from a source to a target domain; indeed, for novel expressions readers did seem to rely on conceptual mappings. This shows that people do make use of mappings when understanding novel expressions but they experience conventional expressions simply as polysemous, a finding challenging Lakoff and Johnson’s (1980) claim. Based on the theory of Lakoff and Johnson (1980), the final sentence should have been easier to comprehend in (2) and (3) because they instantiate a mapping whereas (1) does not.

Table 9.1

Test conditions in Boronat (1990), Keysar et al. (2000) and Thibodeau and Durgin (2008)

	Boronat	Keysar et al.	Thibodeau and Durgin
	conditions	conditions	conditions
A	no mapping	no mapping	no mapping
	conventional, <i>no simile</i>	conventional, implicit mapping	conventional, <i>implicit</i> mapping
		conventional, explicit mapping	novel, <i>implicit</i> mapping
	literal control	literal, manipulation check	literal, manipulation check
B	no mapping	no mapping	no mapping
		conventional, <i>implicit mapping</i>	conventional, <i>implicit mapping</i>
	novel, <i>simile</i>	novel, <i>explicit mapping</i>	novel, <i>explicit mapping</i>
	literal control	literal, manipulation check	literal, manipulation check

Note. In the first two publications, experiment B followed experiment A. Thibodeau and Durgin first performed experiment B to replicate Keysar et al. B and only then introduced changes to the conditions (experiment A).

As is the case for Boronat's (1990) research, a straightforward interpretation of results of Keysar et al.'s (2000) study is difficult: in their first experiment, Keysar et al. (2000) compared a no mapping scenario, a conventional implicit and a conventional explicit scenario. In their second experiment, they replaced conventional metaphors of the explicit scenario with novel metaphors, comparing it only to a conventional implicit scenario, but not, for example, to a novel implicit scenario. No statistical tests were carried out to check differences between the novel explicit condition and the conventional explicit condition (see Table 9.1 for a schematic overview of conditions in Boronat (1990) and Keysar et al. (2000)).

Thibodeau and Durgin (2008) replicated the Keysar et al. (2000) study, introducing changes to the stimulus materials. They questioned whether the conventional metaphorical expressions Keysar et al. (2000) had used were indeed all conventional. For conventional metaphors, Keysar et al. attempted to employ only exemplars from Lakoff and Johnson (1980). Thibodeau and Durgin argue that many metaphors were used in a manner inconsistent with the Lakoff and Johnson material, and were therefore possibly novel rather than conventional. For example, the expression "jell [ideas] together" was not consistent with Lakoff and Johnson's "let [ideas] jell". By searching for the expressions in Google, they determined that "jell together" is a conventional metaphor for teams of people but not for ideas.

Second, Thibodeau and Durgin were of the opinion that the target sentences often fit much better with the novel metaphor scenarios than with the conventional ones, which may be the reason for not finding an effect for the conventional scenarios. For example, the target sentence fit well following with the novel scenario but may have appeared as a non sequitur in the conventional scenario. For example, in the stimulus material presented further above, the target sentence "she is currently weaning her latest child" (with its intended metaphorical meaning), may have been interpreted as a literal statement (about an actual child) in the conventional scenario, which did not set up the metaphor THEORIES ARE CHILDREN. In the novel scenario, the intended metaphorical meaning of "child" was, however, pointed out explicitly to the reader ("Tina thinks of her theories as her children"). Consequently, slower reading times for the conventional scenario may have been due to violating discourse conventions and not due to having established mappings. In order to make the stimulus material conceptually parallel, they removed the explicit statement introducing the mapping (see Table 9.1 for an overview of conditions in the replicated experiment B and experiment A with the new

material). Their results with the new material (examples below) were indeed quite different.

novel scenario:

- (4) I was *sizzling*. My roommate had borrowed my car without asking and got into an accident. I had to take a moment and *release my pressure valve*.

conventional scenario:

- (5) I was *fuming*. (...) I had to take a moment and *let off steam*.

target sentence:

- (6) Otherwise my *boiler* would burst.

Not only novel metaphors but also conventional ones facilitated the comprehension of the target sentence when they were consistent with that target sentence. They reason that this was due to the activation of metaphorical conceptual structure.

Research on idiom comprehension shows similarly contradicting results. Nayak and Gibbs (1990) provided evidence that people use conceptual metaphors to comprehend idiomatic expressions. After reading conceptually related metaphors in a two-sentence scenario, people found a target sentence that used consistent idioms more appropriate for ending the scenario than an inconsistent one. Take for example the conceptual metaphor ANGER IS HEAT IN A PRESSURIZED CONTAINER and the motivated expression “she was getting hotter with every passing minute”. Subjects judged ending the scenario with an idiom that was consistent with the conceptual metaphor to be more appropriate. For instance, they would prefer “blew her top” over “bit his head off” because the latter is a manifestation of ANGRY BEHAVIOR IS ANIMAL BEHAVIOR and was thus inconsistent with the mapping established by the scenario. This suggests that people structure information on a topic around metaphorical schemas.

Glucksberg et al. (1993) adapted material from Nayak and Gibbs (1990) and measured reading times for such target sentences. The task employed by Nayak and Gibbs (1990) was a rating task, which means that people had time to reflect on the appropriateness for an idiom ending the scenario. While this shows that conceptual information is accessible, it does not test whether people activate the mapping automatically in unreflective comprehension. If the conceptual mapping is also accessed during on-line comprehension, idioms

consistent with the mapping should be read faster. In this on-line task, Glucksberg et al. (1993) did not find a difference for consistent (ANGER IS HEAT IN A PRESSURIZED CONTAINER) or inconsistent (ANGRY BEHAVIOR IS ANIMAL BEHAVIOR) metaphors. They concluded that when people comprehend idioms they do not routinely access conceptual mappings.

The bulk of reading and reaction times or judgment studies focused on the potential activation of conceptual mappings. While these studies point out that conceptual metaphors can provide schema-like structures to organize information in a text (e.g. Gibbs & O'Brian, 1990; Nayak & Gibbs, 1990) readers' models of textual representation are not the primary focus of discussion. Only a few, for example Allbritton et al. (1995) and Allbritton (1995), devoted space to discussing how metaphorical schemas can affect people's text representations. Schemas or scripts (specific types of schemas encoding routine actions) are "structures used to coordinate concepts that are part of the same superstructure, or event" (Kintsch, 1998, p. 36). They are not seen as fixed structures, as had initially been suggested by Schank and Abelson (1977), but as "recipes for generating organizational structures in a particular context" (Kintsch, 1998, p. 37) (referring also to Kintsch & Mannes, 1987; Schank, 1982; Whitney, Budd, Bramuci, & Crane, 1995). "A schema allows for the encoding, storage, and retrieval of information related to [a] domain" (Alba & Hasher, 1983, p. 203). A well-known script described in Schank and Abelson (1977) is the restaurant script. This is a sequence of routine activities that we know are part of going to a restaurant (entering the restaurant, selecting a table, looking at the menu, ordering food, eating, paying the bill and leaving the restaurant, as well as standard roles and objects such as a waiter, chairs, money etc.) When a text mentions parts of the memory script, the reader can fill in unmentioned variables to set up the structure of the general script (Bower, Black, & Turner, 1979, p. 188). According to schema theory schemas "provide the basis for filling gaps, the basis for inferential elaboration, the basis for positing states of affairs, not expressly mentioned, that must hold if a passage is to permit a coherent interpretation" (R. C. Anderson, Reynolds, Schallert, & Goetz, 1977, p. 370).

Bower et al. (1979) conducted a recall study to investigate some implications of script theory (Schank & Abelson, 1977). One of their experiments examined whether subjects would use the underlying script of a text to fill in elements of the script that were not explicitly mentioned in the text. For example, people read a text that instantiated a script such as visiting the doctor or going to a restaurant. They then had to recall the story. The researchers hypothesized that in immediate recall subjects remember the actual

statements of a story and activate the script. However, once memory fades, people need to rely on the script in their recall, which will lead to intrusions, i.e. falsely recalled script actions that were not part of the text they had read. It was found that once memory had faded, the subjects included elements in their recalled passages that were consistent with the script, but which they did not actually read. In other words, the script became part of the mental model of the story.

Similar hypotheses were made for a recognition task. The subjects read a text. Subsequently they received sentences describing parts of the script that had or had not been mentioned in the story they had read. The subjects then had to rate how certain they were they had read that statement. The research indicated that subjects confused what the text actually stated with what the text implied. Brewer and Treyens (1981) did a visual recall study and came to parallel results. Subjects who had to recall what they remembered from an office they had just been shown, incorrectly recalled items that were consistent with the office schema.

Allbritton et al.'s (1995) study was built on the hypothesis that metaphorical schemas may impact readers' text representations. They presented subjects with short passages that instantiated a particular schema. For instance, a passage about crime would contain the sentence "the city's crime epidemic was raging out of control" and a target sentence at the end of the passage would read "public officials desperately looked for a cure." (Some passages also contained one or two additional words from the metaphorical schema). Both of these sentences reflect the underlying CRIME IS A DISEASE mapping. In a control condition, the context preceding the final sentence was changed such that the last sentence would not be interpreted as an instantiation of the CRIME IS A DISEASE metaphor:

- (7) A new and virulent strain of pneumonia was plaguing the [police] force. Almost a third of the department was infected already (...) Public officials were desperately looking for a cure.

Subjects performed a sentence and a word recognition task. Recognition times were faster for the target sentence (*looking for a cure*) when it was preceded by the schema instantiating sentence (crime epidemic) for subjects in the experimental condition than those in the control condition. These findings are consistent with the conceptual metaphor view. "Conceptual metaphors are responsible for the existence of schematic knowledge structures that can influence the way information about a metaphor's topic domain is processed and represented in memory" (Allbritton, 1995, p. 38).

While Allbritton et al. (1995) tested for familiarity of the conceptual metaphor (e.g. CRIME IS A DISEASE) along with a corresponding linguistic expression of the sentence setting up the mapping (The city's crime *epidemic* is raging out of control), they did not test for familiarity of the expression in the target sentence (look for a *cure*) nor of further expressions that were consistent with the schema and also were used in the text (e.g. *infect* even "safe" neighborhoods). While these expressions are conventional, expressions in other texts seem quite novel, such as "Both sides were now bringing out their heavy artillery" in a text about a debate. Thus, degree of conventionality has not been consistently controlled for. From other experimental work (e.g. Boronat, 1990; Thibodeau & Durgin, 2008) we know, however, that the level of conventionality of metaphors setting up a conceptual mapping may influence processing. It is thus important not to mix conventional and novel expressions in the stimulus materials.

Gong and Ahrens (2007, pp. 314-315) point to other factors that are likely to influence whether or not conceptual mappings are activated. According to them, critical points pertain to the differences in task (e.g. judgment task in the Nayak and Gibbs (1990) study versus reading times measure employed by Glucksberg et al. (1993) and the way of stimulus presentation (whole paragraph at once in the Nayak and Gibbs study versus line by line presentation by Glucksberg et al.). Their own research shows that when a whole paragraph is presented at once, people make use of conceptual mappings, regardless of what kind of task (off-line judgment task or on-line reading task) is used. Line by line presentation seems to hinder the construction of conceptual mappings because with each new line, new information is expected.

There are further factors that can cause the diverging results of judgment, reaction or reading times studies. The scenarios that have been created by different researchers do not all contain the same number of metaphorical expressions, which makes results difficult to compare. For example, while Keysar et al. (2000) and Thibodeau and Durgin (2008) mostly used two metaphorical expressions to set up a potential mapping, Boronat (1990) used four. Sometimes the number of words is not even consistent within one set of stimuli. Consider these examples of two novel metaphor scenarios (TIME IS MONEY and A RELATIONSHIP IS A JOURNEY from the same stimuli set from Thibodeau and Durgin (2008):

- (8) My boss growled, 'I *deposited* a lot of hours training you. So stop *throwing away* your time!' 'Relax', I grinned.

- (9) Bill and Laurent have been together for three years. There have been *potholes along the way* and now they are at a *junction*. Their relationship is *stalled*.

The second scenario contains more expressions that instantiate the conceptual metaphor than the first one. Keeping the number of expressions in the test material consistent is, however, important because it may be easier for people to set up source-target mappings when there are more expressions that are consistent with a conceptual metaphor. In the case of Keysar et al. (2000) this may have influenced reading times such that when there were more expressions setting up the mapping, the target sentence was read faster than when there were fewer.

The reading passages themselves are the subject of a more general point of criticism. Conceptual metaphor theory has not traditionally shown much interest in the role of context in understanding metaphors (Tendahl & Gibbs, 2008, p. 1840). This is reflected in many stimulus materials of psycholinguistic studies on metaphor, which frequently do not resemble natural language. Staying close to language as it is used in “real life” is a general problem of psycholinguistic studies, and on-line studies in particular, since the goal is maximum control of the stimulus material. The trade-off is that carefully crafted texts become far removed from actual language use. Graesser, Millis, and Zwaan (1997, p. 166) call these unrealistic, choppy texts “textoids” because they are presented out of any social context, are uninteresting or uninformative or both. They caution that “the study of textoids unveils unnatural representations and processing strategies”.

The materials in the present study are the first that do justice to the need for more natural material. As will be described in detail in Section 9.3, the experimental reading material comprises a short passage that resembles a news report on economic competition. Any conclusions drawn about the representation of metaphorical mappings in people’s minds will thus better reflect reality than previous studies using ‘textoids’. There are also improvements on other shortcomings of previous studies. For example, the number of source domain terms has been kept constant across conditions, and novel test items only occurred in the novel condition and conventional ones only in the conventional condition. Metaphor and simile were not mixed. Furthermore, signaling, i.e. (not) making a source-target mapping explicit through the use of a simile (“...is like...”) at the beginning of a reading passage, and the degree of conventionality (conventional metaphorical expression versus novel expression) have been manipulated across all experimental conditions.

Given the inconsistencies and contradictory results in on-line studies or off-line judgment studies, it may be helpful to approach the question of what goes on in people's minds when they read metaphorical language with different methods. I therefore developed a memory study – a cued recall task.

There are some off-line studies on metaphor comprehension available, mainly conducted in the 70s and 80s, but they have not enjoyed much recent attention. Moreover, the bulk of studies available use isolated sentences as test material. For example, Harris (1979) tested whether ideas that are expressed metaphorically are easier to remember than literal ones. As stimulus materials he used single sentences out of context, such as “The ivy cuddled up (novel metaphor) /crept up (dead metaphor) /grew up (literal) to the window” (p. 64).

Not only does the bulk of material consist of isolated sentences, most of the memory research on metaphor (and in fact most of the research on metaphor comprehension) focuses on metaphor in the form of A is B (e.g. Marschark & Hunt, 1985) or includes similes but makes conclusions about metaphor in general without discussing differences between direct and indirect language use (e.g. Pearson, Raphael, TePaske, & Hyser, 1981). Reyna's (1996, pp. 43ff) off-line sentence recognition study used metaphors in A is B form (“The woman was an aspirin, kneeling by the lost boy.”). Corpus research (Steen et al., 2010) has confirmed, however, what has been suspected for some time in applied metaphor research (e.g. Cameron, 1999b), namely that metaphors in simile or A is B forms are in fact highly uncommon. This is why the present study focused on indirect metaphor and constructions that are not in the form of A is B.

Since Harris' (1979) material consisted of short isolated sentences, it is difficult to make claims about people's representations of connected text. Few studies have developed material that is suitable for examining people's mental representation of texts. Boers (1997) showed that people's solutions to socio-economic problems of a company framed in terms of HEALTH, FITNESS and RACING were different from those that were presented in terms of FIGHTING and WARFARE, reflecting different patterns of thought. For example, people exposed to the HEALTH, FITNESS and RACING metaphor were more likely than people assigned to the other group to recommend that the company should “downsize” or “slim down” by laying off employees. Pearson et al.'s (1981) texts are also closer to reality than most studies. They examined children's understanding of expository passages that did or did not contain similes and metaphors. They found that metaphorical language facilitated recall only when the subjects were unfamiliar with the topic of the passage. People's text

representation and the construction of mental models has not been the focus of most on-line studies. The following section gives an overview of how text is represented in people's minds.

Text representation

According to van Dijk and Kintsch (1983), text is represented in memory in three different ways. First, actual words and phrases are part of the *surface memory*. Second, there is memory for the propositional structure of a text – the *text base*. Propositions consist of concepts in the form of a predicate and one or more arguments. Predicates are realized as verbs, adjectives, adverbs, prepositions or connectives. Arguments are agents, objects or locations. Third, readers also add and integrate their prior knowledge about the language, the world and the communicative situation, as well as their personal experiences, and thereby construct the *situation model* (Kintsch, 1998, p. 103ff). In other words, the situation model is the memory of the situation described by the text. Differences between the text base and the situation model are inferences (Perfetti, 1999, p. 188). In simple terms, the text base models what the text says. The situation model is a model of what the text is about. Contrary to the text base, a situation model may also be non-linguistic, representing visual-spatial and semantic information (Perfetti, 1999, p. 186; Perfetti & Frishkoff, 2008, p. 166).

Situation models are schema-based. Elements not explicitly mentioned in a text can be elaborated on through the schema. Take for instance the following example from Bransford, Barclay, and Franks (1972): “Three turtles rested on a floating log and a fish swam beneath it.” Elaborations of the situation model of a lake, a log with a turtle and a fish underneath would imply, for example, that the turtle is above the fish and the fish is in the water (Kintsch, 1998, p. 106). Bransford et al. (1972) found that subjects who were shown the sentence “three turtles rested on a floating log and a fish swam beneath them” (rather than it) after reading the sentence quoted above, agreed that they had read this sentence presumably because they had constructed logical inferences. Thus, comprehending is more than merely recovering information. There is a crucial distinction between memory for meaning and memory for a text's surface form: memory for meaning is more robust. People were unable to distinguish between sentences that they had studied and new sentences when they conveyed the same ideas (see also Bransford & Franks, 1971).

Garnham (1981) (as cited in Glenberg, Kruley, & Langston, 1994, pp. 612-613) also found that people easily confused sentences describing the same

situation that differed only minimally in their surface representation, compared to sentences that shared the surface representation but described different situations. For example, subjects heard “The hostess bought a mink coat *from* the furrier” and “The hostess bought a mink coat *in* the furrier’s.” The two sentences differ from each other only slightly in their surface structure. Since they describe the same situation they were easily confused. In contrast, the sentences “The hostess received a telegram *from* the furrier” and “The hostess received a telegram *in* the furrier’s” also differ only slightly in their surface representation but they describe different situations. They were thus less likely to be confused. “(...) Mental models are representations of situations or events or objects, not representations of a text per se” (Glenberg et al., 1994, p. 611). Studies (e.g. Johnson, Bransford, & Solomon, 1973) have shown that pragmatic inferences are also remembered as if they had actually been part of a story. For example, subjects who were presented with “The river was narrow. A beaver hit the log that a turtle was sitting on and the log flipped over from the shock. The turtle was very surprised by the event” (p. 204) thought that they had heard the sentence “a beaver hit the log and knocked the turtle into the water” – information they had in fact only inferred.

What is clearly lacking is a study on extended metaphors that can help to disentangle the confusing output of recent online studies and give us a better understanding of the role of extended metaphors in text representation. The present memory study fills this gap by combining insights from script recall studies and on-line studies on metaphor comprehension. Since the organizing function of metaphorical schemas can be related to the organizing function of other schematic knowledge such as scripts, I draw on memory studies on the construction of scripts (e.g. Bower et al., 1979), as well as van Dijk and Kintsch’s (1983) model of text comprehension.

Memory scores are typically taken as an indirect indicator for processes at work in comprehension (Katz, 1996, p. 21) because there is a high correlation between comprehension and memory. Although memory and comprehension are related, they are not the same. Therefore, “(...) memory-based measures (...) are subject to interpretative difficulty (Katz, 1996, p. 22). Recall protocols can measure mental representations that have been established once comprehension has been completed but do not capture processes happening on-line – during comprehension (Graesser et al., 1997, p. 166). Therefore caution is in order when relating the results of off-line and on-line studies. The recall task will not tell us whether a metaphorical schema is formed during the reading or the retrieval process. Research such as by Bower et al. (1979) and (Barclay, Bransford, Franks, McCarrell, & Nitsch, 1974 as cited in McGlone

1996, p. 556) has, however, shown that verbal information that can be accessed during recall provides a good measure of how the information was interpreted, suggesting that encoding and recalling verbal information are strongly interdependent. “What is stored is determined by what is perceived and how it is encoded, and what is stored determines what retrieval cues are effective in providing access to what is stored” (Tulving & Thomson, 1973, p. 353). Inferencing has also been shown to occur both during encoding (e.g. Baggett, 1975; Bransford & Johnson, 1973) and retrieval (e.g. Loftus & Palmer, 1974).

(...) inferences and presuppositions occur during both input and output. Memory is constructive in that events are elaborated with inferences and presuppositions in order to comprehend. Memory is also reconstructive in that inferences are added to what is retrieved about the original event. (R. Hunt & Ellis, 2003, p. 227)

The fact that retrieval depends on processing raises the question: What is processed and how is it processed? I suggest that schematic knowledge is used both during retrieval and during comprehension. People may use schemas in a reconstructive way: they may act as a retrieval cue and may help them organize information in writing down what they remember from a text. Differences across experimental conditions in the use of expressions consistent with a metaphorical schema of a text, however, would provide evidence that schemas played a role during comprehension, as well, for memory is not only reconstructive but also constructive and because there is a strong connection between encoding and recall of verbal information (e.g. Bower et al., 1979; R. Hunt & Ellis, 2003, p. 227).

9.2 Study

This study fills a gap in our understanding of the use of metaphorical mappings when people comprehend text containing an extended metaphor. It improves on the works discussed in the following ways. First, unlike the unnatural experimental material used in most studies, the aim here is to create a short, believable news text. Admittedly, the texts can never be truly authentic. Some artificiality remains because of context (the lab). A subject’s reading styles inside and outside the lab may differ, e.g. in depth of reading or number of news articles read. Deviations from natural language data are necessarily introduced in order to manipulate variables (metaphorical expressions and

metaphor signaling). Nevertheless, I endeavored to keep artificiality to a minimum, in part by modeling the sample texts on an actual text from a magazine. In this attempt the present work is distinct from its predecessors. The claim, therefore, is that the material resembles natural language use more closely than material in previous studies.

As a second improvement, the study offers an alternative perspective to the amount of on-line studies available by using an off-line measure – a memory task. This recall task examines under which conditions an extended auto racing metaphor in a news text on economic competition becomes part of the actual mental model of the text. Thus, similar to Allbritton et al. (1995), I assume that if a metaphorical schema can be used to help organize textual information about an abstract topic, it should be possible to show that it has an effect on the textual representation of that information in memory. Potential influential factors on the representation are degree of conventionality of the metaphorical expressions in the text, whether or not the underlying metaphorical mapping is explicitly stated, and the amount of time between reading and recalling the text.

The present experiment draws on memory studies on script and schema recall such as those by Bower et al. (1979, pp. 188-202) and Brewer and Treyens (1981). Schema theory has been criticized for its lack of precise and consistent description (e.g. Thorndyke & Yekovich, 1980) and it has been claimed that representations are much richer than schema theory suggests (Alba & Hasher, 1983). Another point of critique is the assumption that memory is abstract and amodal (Krasny, Sadoski, & Paivio, 2007). An alternative theory has been proposed by Sadoski and Paivio (2001). Their Dual Coding Theory suggests that mental representations are derived from external experiences (linguistic or non-linguistic) and retain some of their concrete qualities. A verbal system processes language whereas an imagery system processes nonlinguistic objects and events. The two systems are independent, but interconnected. In metaphor comprehension, vehicles promote “retrieval of images and verbal information that intersects with information aroused by the topic” (Paivio & Walsh, 1993, p. 324). While script recall studies are used as a model in setting up the current study, I do not use the term schema in a restricted sense, but mean to include all kinds of mental representations of knowledge, whether amodal or multimodal. The theory should be understood as a motivation for the structure of the recall task; the analysis of the results does not rely in any fundamental way on specific details of any particular schema theory. For further discussion of schema theory, the reader may turn to Alba and Hasher (1983) or Sadoski, Paivio, and Goetz (1991).

In order to draw parallels to script and schema recall studies, I constructed a news report on economic competition that incorporates the extended metaphor ECONOMIC COMPETITION IS AUTO RACING. Analogous to script and schema recall studies, I assume that if people build a metaphorical schema of auto racing when they read a news text on economic competition, they will not only remember elements from that schema but will also use elements in their recall protocols that are consistent with that schema but that were not part of the stimulus text. An active metaphorical mapping should activate domain-specific terms from the domain of auto-racing whereas the text is about the economy.

The study combines elements from on-line studies (e.g. aspects of text design from Allbritton et al., 1995; Boronat, 1990; Keysar et al., 2000; Thibodeau & Durgin, 2008) and off-line studies (e.g. Bower et al., 1979) on memory and comprehension. Similar to Keysar et al. (2000) I manipulated conventionality of the metaphorical expressions (conventional versus novel) and explicit signaling of the mapping (mapping signaled by a simile versus unsignaled mapping). The experiment tests if people's text recall is influenced by these manipulations such that they use more racing metaphors in the experimental conditions than in a control condition that does not contain an extended mapping. I also expect that the number of auto racing terms used will not be the same across the experimental conditions, since novelty and/or signaling of metaphor is expected to aid people in constructing a text representation built on a metaphorical schema.

I hypothesize that when people read novel auto racing expressions that extend across a news text, they produce more auto racing expressions in their recall protocols than those who read conventional expressions. This is motivated by the Career of Metaphor Theory (Bowdle & Gentner, 2005), which predicts that novel metaphors are processed by comparison. The prediction also follows the notion of "deliberateness" which suggests that novel metaphors are likely to be recognized as deliberate invitations to perform cross domain mappings and are therefore more likely to be processed by comparison (Steen, 2008). If this is indeed the case we could conclude that novel metaphors better aid people in forming a metaphorical auto racing schema. This is because, in contrast to conventional metaphors, novel metaphors may invite the reader to activate the source domain of auto racing and map it onto the target domain of economic competition.

I also hypothesize that if the underlying metaphorical auto racing mapping is signaled by a simile ("Economic development is ... like auto racing"), the number of metaphorically used words that are consistent with

that mapping will be higher in the recall protocol compared to conditions in which the mapping is not made explicit. This is because signals (e.g. B. J. Meyer, 1975) emphasize certain aspects of the text content and/or clarify the organization of a text, but they do not add new content (as cited in Whitney, Budd, & Mio, 1996). They have been shown to have a positive effect on memory for text (B. J. Meyer, 1984, as cited in Whitney et al. 1996), since they encourage elaborate processing that would otherwise not occur. Similes make the source domain of auto racing explicit and may therefore be experienced as deliberate. I therefore predict that source-target mappings are created, which lead to an integration of an auto racing schema into people's text representation.

Taking Mannes and Kintsch's (1987) study on knowledge and text organization as a model, half of the subjects were tested on recall in a single session, whereas the other half were tested after a two-day interval. Surface memory decays rapidly whereas the situation model decays only slowly (Graesser et al., 1997). Thus, as time progresses, the memory of a text's macrostructure (i.e. the abstraction of the 'gist' of the text) is more dominant in memory than its microstructure (propositions close to the surface structure). Moreover, the reader will find it more difficult to separate knowledge of the text and pre-knowledge, as has been demonstrated by Bower, Black and Turner (1979). Bower et al. (1979, p. 188), in their script recall study, also expected that "as memory fades over time [the reader] relies then upon the fully-completed script, which leads to unstated script actions being intruded into recall."

This means that, after two days, the subjects' recall should reflect their situation models rather than the text itself. They will have to rely on a schema to recall the passage, since it is assumed that after a two-day delay the text base will have decayed and the subjects need to rely on the situation model (van Dijk & Kintsch, 1983) when recalling the text. Significant differences between the conditions must therefore be a matter of conceptualization. Based on conclusions from this research, I also hypothesize that, if people have built an auto racing schema, they may not remember many auto racing expressions from the text after two days, but the number of intrusions in their recall protocols will be higher relative to the recalled items (see Mannes & Kintsch, 1987, referring to Kintsch & van Dijk, 1978, p. 94 and Dooling & Chistiaansen, 1977).

I not only predict that the use of a signal boosts the use of auto racing metaphors, but also expect an interaction effect between signaling and degree of conventionality. This means that while people are expected to use more

auto racing expressions in the signaled than in the unsignaled conditions, the boost in auto racing expressions through the simile will be much higher in the conventional condition relative to the novel condition. The reasoning is that people will remain largely unaware of the source domain of conventional expressions, but its explicit statement will help them generate mappings. This reasoning is connected to Steen's (2008, in press-b) suggestion that when conventional metaphorical expressions are experienced as deliberately used, they may draw attention to the source domain. Since a simile can function as a signal for deliberate metaphor use it may have a greater effect in the conventional scenario than in the novel scenario in which the metaphorical expressions may be more likely perceived as deliberate, even without a signal.

To summarize, I predict the following effects:

- *effect of conventionality* (more auto racing expressions in novel conditions than in conventional conditions)
- *effect of signaling* (more auto racing expressions in simile conditions than in no-simile conditions)
- *effect of time of recall* (more auto racing expressions in immediate recall than in the delayed recall as a function of decay)
- *interaction effect of conventionality and signaling* (the difference in number of auto racing expressions between cases with and without signaling will be larger for the conventional condition than for the novel condition)
- *interaction effect of time of recall and type of recalled item (from text or intrusion)*. After a two day delay, the number of expressions produced will go down as memory decays; relatively speaking, however, the number of intrusions is expected to be higher than the number of actual recalls after a delay because the actual wording of the text has been forgotten

9.3 Method

Subjects

120 undergraduate students from Grand Valley State University (Allendale, Michigan, USA), all native speakers of English, participated in the study. 60 participated for course credit. 60 participated for extra credit.

Materials and design

I created short news passages on economic development inspired by a business article from Hunt (2004). There were five versions of the passage. The four passages in the experimental conditions contained seven metaphorical items that belong to the extended mapping of auto racing. The control condition did not contain an extended mapping. Each passage was about 190 words.

The test material is closer to reality than any of the materials on extended metaphor used to date. This brings the additional challenge to keep test conditions parallel on all factors that may influence memory. For example, Kintsch and van Dijk (1978, p. 370) note that memory is affected by the rank order of propositions. Higher-level propositions are remembered better than lower-level propositions, as has also been demonstrated by e.g. Meyer & McConkie (1973). Steen (2004) offered supportive results for the recognition of metaphors (metaphorically used content words in higher-level propositions were more easily recognized than those in lower-level propositions). Additionally, his research identified the position of a metaphorically used word in discourse as influential for its recognition. Results indicate it may be more easily recognized post-verbally than in verbal or pre-verbal position and may be recognized more easily when it occurs in the first or last utterance of a paragraph and not in the middle. Nominal metaphors tend to be more easily detected than verbal ones – possibly due to their higher imagery value. The metaphorical items within the news passage were not all at the same level; however, the items' positions in the structure did not differ between the experimental conditions. Word class was also kept as consistent as possible across conditions as long as a natural reading of the text was not affected.

Similar to Boronat (1990), the texts had the same storyline and the metaphorical expressions used differed in their degree of conventionality. The seven conventional and the seven novel expressions were selected by using the *Macmillan English Dictionary for Advanced Learners*, *Longman English Dictionary Online*, *Merriam-Webster Online Dictionary*, *Roget's Thesaurus* (Kipfer & Chapman, 2003) and *Wordnet* as sources. Boronat (1990) also divided the metaphorical expressions into novel and conventional items. However, the assignment of items to these two categories is questionable. For example, the expression *dominant position* in the DEBATE IS WAR scenario is quite conventional but was treated as a novel metaphor. Furthermore, the conventional metaphor *strategy* is consistent with the WAR scenario but found its way into the novel passages.

There is no clear line marking a metaphorical expression as either conventional or metaphorical. There are, however, expressions that can be

described as less conventional than others. In order to avoid conflation such as in Boronat (1990), the assignment of novel and conventional expressions to the novel and conventional conditions was checked behaviorally by administering a forced-choice task. 22 GVSU undergraduate students participated for course credit. They received descriptions of seven economic situations from the test passage. Each situation was followed by two statements describing the situation. One of the statements contained a metaphorical item from the reading passage that was categorized as conventional. The other one contained its corresponding novel (or less conventional) item. For example, the situation “One country is not as economically successful as other countries” was followed by the conventional example “the country has been left miles behind” and the novel example “the country has been left several laps behind”. The subjects had to “circle the expression that seems like a more familiar or conventional way of describing the economic situation”. The order of items was random and was counterbalanced across subjects. A binominal test shows that overall agreement across items was 0.92. Participants overwhelmingly chose the conventional term. The overall proportion was tested against the expected value of 0.50. This is the expected proportion when the expressions are equally likely to be conventional ($t(21) = 17.31, p < .001$). The same was done for each item separately with a binominal test for each item. The observed proportion (ranging from 0.82 to 1.00) was significantly higher than 0.50 (all p values $< .005$). These results support the item selection. To be clear, while I do not claim that all the novel expressions are clearly novel and all the conventional ones are clearly conventional, I do state that the novel items were much less conventional than the conventional ones.

Besides the degree of conventionality of metaphorical expressions that belong to an extended metaphor of auto racing (conventional/novel), signaling of the auto racing mapping by a simile (simile/no simile) was also manipulated. In the signaled conditions, the auto racing mapping was introduced by a simile in the form of A is B (“Economic development ... is like auto racing”) while the mapping was left implicit in the unsignaled conditions.

Both immediate and delayed recall tests were administered. For both

Table 9.2
Experimental conditions

	immediate		delay	
conventional	no signal	signal	no signal	signal
novel	no signal	signal	no signal	signal

times of recall a control group was created which did not contain an extended auto racing metaphor. The remainder followed a 2 (recall interval: immediate versus two-day delay) x 2 (signaling: simile versus no simile) x 2 (degree of conventionality: conventional versus novel) factorial design with recall interval, signaling and degree of conventionality as between-subject factors (see Table 9.2). The dependent measure was the number of metaphorically used words that belonged to the auto racing schema in the recall protocol.

Procedure

The experiment was run in groups of 2-30 subjects with each subject being seated at a separate table. They received a reading passage on economic development as well as task instructions. The factors were time of recall (two levels), degree of conventionality (two levels), and signaling of the mapping (two levels), with all factors between subjects. For instance, in the conventional condition, a subject would read “(...) China and India have pulled ahead economically (...)” while subjects in the novel condition would read “(...) China and India have turbocharged ahead economically (...)”. In the condition with signal, the source domain was made explicit by a simile (“Economic development is (...) like auto racing”), while subjects in the unsignaled condition did not receive such a cue. The control condition described the same economic topic without using an extended auto racing mapping.

The experimenter read the instructions for the reading task out loud and the subjects read along. They were instructed to read the passage carefully because they would be tested on the material later. They were given three minutes to view the passage. No mention of metaphorical language was made in the instructions.

One half of the subjects recalled the passage 15 minutes after reading it (immediate recall condition). After reading the passage, they received a 15-minute distractor task to delete the text from their short-term memory. The distractor task was a creativity task modeled on Guilford (1967). This task asked the students to find as many creative, alternative uses for 10 everyday items (e.g. paper clip) as possible. None of the items had anything to do with racing. After the distractor task had been collected, the subjects received instructions to recall the passage on economic development they had read earlier (see also Bower et al., 1979). The subjects were told to recall the exact wording of the passage, but whenever they could not remember the exact wording they could use their own words to convey the ideas that they did recall. Recall was cued by the headline of the news passage (“Economic

Development”). The students recalled the passage using pen or pencil below the headline. There was a 12 minute time limit for this task.

The other half of the subjects recalled the text two days later (delayed recall condition). The procedure for the two-day-delay recall task was the same except that after reading the passage the subjects were sent home. They were asked to recall the text two days later following the same instructions as the immediate recall group.

9.4 Analysis and Results

If the manipulated variables (simile, degree of conventionality and time of recall) influence the kind of representation of the text people build, we should observe differences in the number of auto racing expressions between the experimental conditions and the control condition and between the experimental conditions themselves. Since intrusions, i.e. expressions that were not in the stimulus but are consistent with the auto racing schema, are a strong indication of the operation of schemas, we need to look not only at correctly recalled auto racing terms from the stimulus text but also at intrusions. For example, a subject wrote “America seems to be *stalled*, even *stuck in a lower gear*.” While “stalled” was part of the test passage, “stuck in a lower gear” was not. The second expression is, however, also consistent with the domain of auto racing. Such ‘intrusions’ can be taken as an indicator of people’s textual representation being built upon a model of auto racing. Following studies on script recall, it is interesting to study both people’s recall of the seven metaphorical auto racing terms of stimulus material as well as their use of intrusions. If people have integrated an auto racing model into their textual representations, I expect them to also use auto racing terms that were not in the reading passage but that are nevertheless consistent with an auto racing schema.

Data coding

All expressions that were consistent with an auto racing schema were counted and then labeled as either intrusions or correct recalls from the text. The coding procedure consisted of two steps. In the first step two coders identified auto racing expressions. In the second step one analyst checked for errors and consistency.

The two coders went through all recall protocols. They made two decisions: First, they searched for expressions that they thought were part of an auto racing schema. Then they decided whether this expression consisted of one or more units. For instance, the expression “win the race” was identified as a relevant expression. Then a decision was made on whether this expression should count as one unit or whether it should be broken up into the two units “win” and “race”. Protocols were divided into groups of six; after coding a group, the two analysts compared and discussed their selected items. Notes were made about item disagreements (whether an expression is part of an auto racing schema or not) and unit disagreements (one or more units) as well as the decisions made in ensuing discussion. Most of the disagreements could be quickly resolved. Since discussion took place after every sixth recall protocol, coder disagreement on the inclusion or exclusion of potential auto racing items dropped dramatically after the first 35 protocols (14 disagreements in the first 35 protocols versus 6 in the remaining 85 protocols.)

The metaphor ECONOMIC DEVELOPMENT IS AUTO RACING is a complex metaphor. The auto racing schema is thus related to a number of other schemas such as movement, competition, driving or racing in general. It is therefore not simple to delineate the schema and to describe exact cut-off points. Some expressions in the recall protocols are clearly related to an auto racing schema (e.g. checkered flag), while others are more general (e.g. pull ahead) and thus only peripherally related. Particularly for the more general expressions there may be alternative mappings. This becomes clear if we look at the terms in isolation (e.g. accelerating; driving in general; fall off track; racing in general etc.) Nevertheless they are all loosely connected. Because they are surrounded by other metaphors evoking an auto racing scenario, they are made coherent by context and are thus drawn into the auto racing schema. Cameron and Low (2004, p. 367) describe this phenomenon as a metaphor ‘attracting’ other, only loosely related terms. This suggests that “conceptual ‘domains’ or ‘scenarios’ should not be seen as entirely fixed and stable mental representations, but rather as flexible cognitive structures that are partly constructed on the basis of the textual input” (Semino, 2008, p. 26).

Despite the fuzzy boundaries of this schema, analyst agreement was high. They disagreed on only 20 items but immediately agreed on the inclusion of 258 items. Of the 20 items that needed discussion, none were included in the auto racing schema. For example, “struggling” in “a struggling economy” was an item of disagreement. In discussion, the analysts agreed that “struggling” refers to experiencing any kind of difficulty and was neither typical of the racing domain nor metaphorically used. As I have shown for the

metaphorically used words *winning*, *battle* and *defence* in the previous chapter, the underlying conceptual structures of the metaphorically used items in the stimulus text may not all fit an auto racing mapping equally well. Since the main interest here is neither the depth nor level of processing but merely the existence of any metaphorical auto racing-, racing- or movement-related schema, this is not a concern.

Unit disagreement was also low. In only eight cases did the analysis disagree as to whether or not an expression should be broken up into two separate units. Five of these cases could immediately be solved through discussion. The remaining three items (“reel off the wrong path”, “win the race”, “finish with the checkered flag”) were put aside and a decision was made later by one analyst. The analyst checked patterns of the unanimous cases and forced a decision to break up the expressions into two units, in maximum consistency with those cases.

The word “competitive” in the first sentence of each of the reading passages was used in combination with “challenging” and “process” to introduce the topic of economic development on an abstract level. It is possible that this expression may be drawn into the auto racing schema as the text proceeds. A check of all recall protocols revealed that “competitive” was used nine times in the introductory sentence as part of the simile and two times elsewhere in the text. According to the Macmillan dictionary, it is, however, not metaphorical but refers to trying to be successful in any kind of activity. “Competitive” was therefore not counted as an auto racing term and was not included in the analysis.

The signaled conditions introduced the source domain explicitly (“like auto racing”). This means that only people who were assigned to the signaling condition could potentially score a recall of that item. Since the simile was a manipulated variable and the main interest was in how it would affect the construction of the rest of the text, items that occurred as part of the simile after the signal “like” in the opening sentence of a recall task were not included. Instances of “auto” or its synonyms and “racing” were included as an intrusion when it was used elsewhere in the text. It is possible that the presence of the expression “auto racing” makes it more likely for people in the signaling condition to use the expression – not just as part of the simile but also in the rest of the text. Indeed, two instances of “car” and 12 instances of “race”/“in the race”/“racing against each other” were counted in the signaling conditions, but only six cases of “race”/“racing forward” in the unsignaled condition. Since people in the signaling condition did read the words “auto” and “racing”, while the people in the unsignaled condition did not, this would

have required a different coding schema to differentiate between items that were also part of the simile and items that were not. In order to avoid introducing this additional complexity in the statistical analysis, such a distinction was not made. Thus “car” and “racing” were counted as an intrusion whenever they occurred in the main part of the text.

A consistency check was performed to ensure that expressions were equally included or excluded across conditions. This check revealed that two expressions that were marked in one condition were not marked in another. Therefore the expressions “losing ground” in the conventional/signaling condition in the delayed recall and the expression “race” in the novel/signaling condition of the immediate recall group were added.

Consistency checking also led to adjustments in the number of units. Three expressions (“win the prize”, “win the checkered flag”, “turbocharging through the track”) were broken into two units each to be maximally consistent with the overall pattern of the unanimous decisions.

In 17 cases there was unanimous agreement that the expression should count as one unit, but it was unclear how many words should be included as part of an expression, e.g. “at a stall” or “stall” and “earn the top spot” or just “top spot”. 7 cases were quickly solved. For the remaining 10 cases one analyst forced a decision by taking the overall pattern of the unanimous cases as a guideline, which also led to 6 adjustments during consistency checking. This problem did not affect the count of relevant auto racing expressions, however, and can therefore be neglected. After the data clean up the number of auto racing expressions was increased by eight, leading to a total of 265 cases. There were a few instances of a subject using an expression twice. In such cases the expression was counted twice.

As pointed out above, while differences in the total use of auto racing terms per condition may point to different ways of conceptualizing the text, distinguishing between recalls from the stimulus texts and intrusions is more conclusive. After a time delay, people will have to rely on a situation model to recall the text. Intrusions may thus be a particularly strong indicator of the use of a metaphorical schema.

In order to separate intrusions from recalled expressions, a coding schemas was developed. It was geared at filtering out items that were recalls from the text. There were seven metaphorical auto racing expressions in the reading passage. This means that each subject could correctly recall a maximum of seven items. For each of these items, the coder recorded whether or not it was used in a recall protocol. A small number of subjects reused an auto racing expression in their recall. In these (rare) cases, the expression was

only counted as a recall once (since it was used only once in the original text). A reuse of the item thus counted as an intrusion. Explicit coding instructions and a coding scheme are printed in the appendix. All recall protocols were coded according to these instructions.

Most cases in the overall data either had a clear match in the recall data, or they were clearly not recalled. 10 cases were labeled “borderline” and 22 “partial match”. The 10 borderline cases (e.g. “fall off track” instead of “veering off course”) were treated as intrusions. The 22 “partial match” cases were treated as recalled items from the text because they closely resembled the original expressions (e.g. “left behind” instead of “left miles behind”). This yielded 134 intrusions versus 131 recalls from the stimulus text.

In order to test the reliability of the coding scheme, the instructions were given to an independent coder who examined 20 recall protocols according to the instructions (see appendix). Two passages were randomly selected from each of the five conditions. Ten passages were chosen from the immediate recall data and ten passages from the delayed recall adding up to 20 texts. Out of 140 cases (seven metaphorical items per text), the two coders disagreed on only three items. This means that the coders developed the same understanding of the coding scheme.

The length of each recall protocol was also established. This was essential for statistical analysis, because the probability of finding an auto racing expression in a long text is higher than finding one in a short text. The number of words in each protocol was recorded by using the Word Count function of the Microsoft Word application. Here one might raise the issue of what actually constitutes a word or unit of analysis, but since Word Count was used for each passage and the manual coding was done as consistently as possible, I do believe that this is a legitimate approach.

Results

I expected that people would not use racing expressions when they were not confronted with an extended auto racing mapping. Variables such as conventionality and signaling, however, would influence people’s textual representations, which would surface through the use of such terms. In order to confirm this expectation, I checked whether people in the control condition used auto racing expression without having read them. This check was performed by looking at the total number of auto racing terms. An ANOVA showed a significant effect of condition ($F(2,144) = 17.61, p < .001$). A contrast (control versus experimental conditions) shows a significant effect of metaphor ($t(114) = 4.20, p < .001$). As expected, people in the control

conditions used hardly any auto racing terms. Only a total of 12 expressions were observed in the control conditions (6 in the immediate condition and 6 in the delayed condition). This number is much lower than in the experimental conditions, which suggests that people do not automatically equate economic competition with auto racing. The control data also rule out the possibility that subjects did not notice any metaphors in the conventional un signaled conditions. If that had been the case, the means in the control condition and the conventional un signaled condition should have been the same. Since I confirmed that people do not automatically use auto racing terms to describe economic competition, the control conditions were excluded from further analysis in order to keep the analysis as simple as possible.

Table 9.3 presents the mean number of auto racing terms in the experimental conditions, distinguishing between auto racing terms correctly recalled from the text and auto racing terms that were not in the text but consistent with a racing schema (intrusions). It can be seen that, in the conventional condition, both the mean score for intrusions and the mean score for recalls from the text were lower in the delayed condition than in the immediate condition. This is consistent with the idea that there is some degradation of the text base over time. In relative terms, the mean score of intrusions *increases* in proportion to recalls from the text when going from the immediate to the delayed recall task. This suggests that, if readers were aware of the metaphor, they relied less on the text base as one source of the metaphor in the delayed case.

Now consider the case of novel metaphor, where the same story plays out more dramatically. Again the overall number of auto racing terms drops in the delayed recall condition. And again, the mean score of intrusions increases *relative* to recalls from the text; the relative increase is moreover much larger than in the case of conventional metaphors. In fact, there is an increase in intrusions not only relative to recalls from text, but also in absolute terms: subjects used more intrusions in the delay condition ($M = 2.13$) than in the immediate condition ($M = 1.50$). This strongly reinforces the idea that memory of the metaphorical theme persists after memory of the text's actual wording decays, and that memory of the metaphorical theme is stronger when that theme is novel. Signaling may also play a role. In fact, mean scores suggest that, in the novel condition, intrusions go up when signaled but down when un signaled (see Table 9.3). In the conventional condition recalls and intrusions *always* go down after a delay. Of course, at this point these observations may or may not be statistically significant. Motivated by the observations, we now turn to a detailed statistical analysis of the data.

Table 9.3*Mean number of recalls and intrusions per condition (SD in parenthesis)*

		recalls from text			intrusions			grand mean		
		no signal	signal	total	no signal	signal	total	no signal	signal	total
imm.	c	1.17 (0.84)	1.50 (1.00)	1.33 (0.92)	0.75 (0.62)	1.33 (1.37)	1.04 (1.08)	0.96 (0.62)	1.42 (0.95)	1.19 (0.82)
	n	2.33 (1.30)	2.58 (1.73)	2.46 (1.50)	1.58 (1.62)	1.42 (1.16)	1.50 (1.38)	1.95 (1.39)	2.00 (0.93)	1.98 (1.16)
tot.		1.75 (1.23)	2.04 (1.49)	1.90 (1.36)	1.17 (1.27)	1.38 (1.24)	1.27 (1.25)	1.46 (1.17)	1.71 (0.97)	1.58 (1.07)
del.	c	0.25 (0.45)	0.75 (0.87)	0.50 (0.72)	0.33 (0.49)	0.92 (1.68)	0.63 (1.24)	0.29 (0.40)	0.83 (0.98)	0.56 (0.78)
	n	1.33 (1.67)	0.58 (0.90)	0.96 (1.37)	0.17 (0.39)	4.08 (5.12)	2.13 (4.08)	0.75 (0.92)	2.33 (2.77)	1.54 (2.17)
tot.		0.79 (1.32)	0.67 (0.87)	0.73 (1.11)	0.25 (0.44)	2.50 (4.06)	1.38 (3.08)	0.52 (0.73)	1.58 (2.17)	1.05 (1.69)
mean	c	0.71 (0.81)	1.13 (0.99)	0.92 (0.92)	0.54 (0.59)	1.13 (1.51)	0.83 (1.17)	0.63 (0.61)	1.12 (0.99)	0.87 (0.85)
	n	1.83 (1.55)	1.58 (1.69)	1.71 (1.61)	0.88 (1.36)	2.75 (3.88)	1.81 (3.03)	1.35 (1.31)	2.17 (2.03)	1.76 (1.74)
grand mean		1.27 (1.35)	1.35 (1.39)	1.31 (1.36)	0.71 (1.05)	1.94 (3.03)	1.32 (2.34)	0.99 (1.07)	1.65 (1.66)	1.32 (1.43)

Note: The novel condition (n) is shaded. The grand means are the means of both independent variables. Thus a subject who recalled one metaphor from the text and one intrusion has actually used two metaphorical expressions (and not one – the grand mean).

The data were analyzed with a mixed design ANOVA, with type of recall (intrusions or from text) as within subject factor and conventionality (conventional or novel), signaling (signal or no signal) and time of recall (immediate or delayed) as between subject factors. Text length functioned as a covariate.

First, the effect of the covariate text length was examined. The relation between text length and the number of auto racing expressions was significant $F(1,87) = 24.23, p < .001, r = .47$. Here r is used as a measure of effect size, where $r < .10$ is a small effect, $r < .30$ is a medium effect and $r < .50$ is a large one (Field 2005). This result indicates that that the longer the text, the higher is the number of auto racing terms.

Next I report all main effects:

- For metaphor conventionality, a significant difference was found between the novel and the conventional condition ($F(1,87) = 14.81, p < .001, r = .38$). On average, scores in the novel condition were higher ($M = 1.76, SD = 1.74$) than in the conventional condition ($M = 0.87, SD = 0.85$).
- For metaphor signaling, a significant difference between the signaling and the unsignaled condition ($F(1,87) = 7.16, p < .01, r = .28$) was found. The number of auto racing terms used was higher when the subjects read a simile ($M = 1.65, SD = 1.66$) than when they did not ($M = 0.99, SD = 1.07$).
- For time of recall, the difference between an immediate recall and a recall two days later was not significant ($F < 1$).
- For type of recall, there was also no significant difference between recalls from the text versus intrusions ($F < 1$).

An examination of all two-way interactions yields the following observations:

- A significant interaction effect was found between type of recall and text length ($F(1,87) = 6.34, p < .05, r = .26$). There were no interaction effects between (a) conventionality and signaling, (b) conventionality and time of recall, and (c) time of recall and signaling; however, (d) there were some two-way interaction effects with type of recall.
 - (a) For the interaction between conventionality and signaling, there was no interaction effect ($F(1,87) = 1.32, p = .254, r = .12$). This means that the effect of signaling was statistically equal for the novel and the conventional condition.
 - (b) There was also no significant interaction effect between time of recall and level of conventionality ($F < 1$). This means that though the use of auto racing terms differed for the conventional and the novel reading passage, this was not affected by time of recall.
 - (c) Neither was there a significant interaction effect between time of recall and signaling ($F(1,87) = 2.73, p < .102, r = .17$). This lack of effect means that though the use of auto racing terms differs for the signaling and the unsignaled condition, this was not affected by time of recall.
 - (d) A significant interaction effect was detected between type and signaling ($F(1,87) = 6.71, p < .05, r = .27$). This indicates that while there are differences between intrusions and recalls, these differences are not the same for the signaling and the unsignaled condition. In the unsignaled condition the mean number of recalls is higher ($M = 1.27, SD = 1.35$) than the mean number of intrusions ($M = 0.71, SD = 1.05$), whereas in the

signaling condition the mean number of recalls is lower ($M = 1.35$, $SD = 1.39$) than the mean number of intrusions ($M = 1.94$, $SD = 3.03$).

There was a significant interaction effect between type and time of recall ($F(1,87) = 14.42$, $p < .001$, $r = .38$), which means that differences in intrusions versus recalls were not the same for the delayed and the immediate recall condition. For the immediate condition the mean number of recalled items ($M = 1.90$, $SD = 1.36$) was higher than the mean number of intrusions ($M = 1.27$, $SD = 1.25$) whereas for the delayed condition the mean number of recalls was lower ($M = 0.73$, $SD = 1.11$) than the intrusions ($M = 1.38$, $SD = 3.08$).

The variables type and level of conventionality did not interact significantly ($F < 1$). This means that differences in recalls from text and intrusions were the same for the novel and the conventional conditions.

Three-way and four-way interactions display the following picture:

- There was no three-way interaction between time, level of conventionality and signaling ($F < 1$).
- There was a significant interaction between type, level of conventionality and signaling ($F(1,87) = 6.22$, $p < .05$, $r = .26$).
- There was another significant three-way interaction between type, time of recall and level of conventionality ($F(1,87) = 4.45$, $p < .05$, $r = .22$).
- The interaction between type, time of recall and signaling was significant as well ($F(1,87) = 7.82$, $p < .01$, $r = .29$).
- There was a four-way-interaction between type of recalled elements, conventionality, signaling, and time of recall. ($F(1,87) = 5.31$, $p < .05$, $r = .24$) (Figure 9.1).

Even though subjects are more likely to use auto racing expressions in the novel condition than in the conventional condition, and are also more likely to use auto racing expressions in the signaling condition than in the unsignaled condition, this is influenced by time and type of recall (i.e. whether we are looking at intrusions or recalls from the text), producing three three-way interactions and an overall four-way interaction.

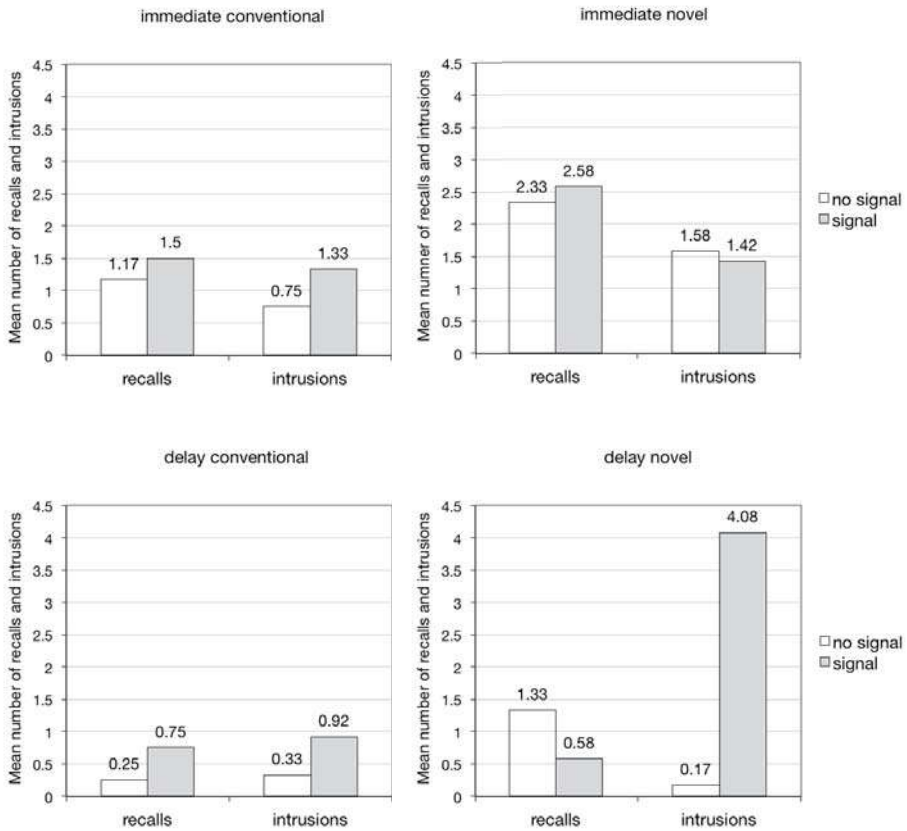


Figure 9.1 Mean number of recalls and intrusions per condition.

In order to interpret the four-way interaction, the three-way interactions between type of recalled elements, time of recall and signaling was tested separately for each of the levels of conventionality.

- For the conventional condition the three-way interaction was not significant ($F < 1$). For the novel condition, the three-way interaction was significant ($F(1,43) = 7.10$, $p < .05$, $r = .38$). The four-way interaction reported just now may hence be explained as due to the fact that there was a significant three-way interaction for the novel condition but not for the conventional condition.

Since the three-way interaction for the conventional condition was not significant, we can now proceed to interpret the lower order effects within the conventional condition.

- There was no significant main effect of type ($F < 1$), which means that the average number of intrusions does not significantly differ from the average number of recalls from the text in the conventional condition.
- The main effect of signaling was significant ($F(1,43) = 4.05, p < .05, r = .29$). The average number of auto racing expressions used differs between signaling ($M = 1.12, SD = 1.51$) and no signaling ($M = 0.63, SD = 0.59$).
- The main effect of time of recall ($F(1, 43) = 1.75, p = .19, r = .20$) was not significant, nor was the interaction effect between time of recall and signaling $F < 1$.
- The interaction effect between type and time of recall did not reach significance ($F(1,43) = 3.89, p = .07, r = .27$), and neither did the interaction effect between recall type and signal ($F < 1$).

The observation that both intrusions and recalled items go down after a time delay is therefore not significant for conventional metaphors. For the conventional condition there was no main effect of time and no interaction effect between type of recall and time of recall. There was only an effect of signaling. This holds for both recalled items and intrusions. In all then, for conventional metaphors, signaling increases their use.

For the novel condition, the following results were found:

- There was a significant main effect of signaling ($F(1,43) = 5.81, p < .05, r = .33$) suggesting that the mean number of terms used in the novel signaling condition ($M = 2.17, SD = 2.03$) was higher than the mean number of terms used in the novel unsignaled condition ($M = 1.35, SD = 1.31$)
- The main effect for text length $F(1, 43) = 17.49, p < .001, r = .54$ was also significant.
- Type of recall $F < 1$ and time of recall $F(1, 43) = 1.51, p = .23, r = .18$ did not reach significance.
- There was a significant interaction effect between type of recall and time of recall ($F(1, 43) = 10.39, p < .01, r = .44$) as well as type of recall and signaling $F(1, 43) = 7.8, p < .01, r = .39$.
- The interaction effect for time of recall and signaling was not significant ($F < 1$) and neither was the interaction effect between type of recall and text length ($F(1, 43) = 3.35, p = .07, r = .27$). The three-way-interaction for the novel condition was significant ($F(1, 43) = 7.09, p < .05, r = .38$).

Therefore, a follow up analysis broke down the three-way interaction within the novel condition and analyzed the two-way interactions between type and time of recall for each of the two signaling conditions separately.

- For the unsignaled condition there was no significant two-way interaction ($F < 1$).
- For the signaling condition, however, there was a large significant interaction effect between type and time of recall ($F(1,21) = 15.03, p < .001, r = .65$).

So the significant three-way interaction in the novel condition was due to the fact that the two-way interaction between type and time of recall was not significant in the unsignaled condition while it was significant in the signaling condition.

Since the two-way interaction between type and time of recall was not significant in the unsignaled condition, I focus on the lower order effects in that condition.

- The main effect of type was significant ($F(1,21) = 12.10, p < .01, r = .60$). The average number of intrusions ($M = 0.88, SD = 1.36$) was smaller than the number of recalls from the text ($M = 1.83, SD = 1.55$). Note that this difference did not depend on time of recall (since the two-way interaction was not significant).
- There was no significant main effect of time of recall ($F < 1$). The average number of auto racing expression in the immediate and the delayed condition did not differ significantly.

Since there was a significant effect between type and time of recall for the novel signaling condition, it is necessary to look at the difference between intrusions and recall from the text for the immediate and the delayed condition separately.

- For the immediate condition there was no significant effect of type of recall ($F(1,10) = 2.10, p = .18, r = .41$).
- However, there is a significant effect for the delayed condition ($F(1,10) = 13.47, p < .01, r = .75$). The average number of recalls from the text ($M = 0.58, SD = 0.90$) is lower than the average number of intrusions ($M = 4.08, SD = 5.12$).

So the two-way interaction between type and time of recall within the novel signaling condition was a result of the fact that there was no significant difference between intrusions and recalls from the text for the immediate condition but there was one for the delayed condition.

The breakdown of the significant three-way interaction for the novel condition has shown that intrusions go up while recalls go down – but only when there is a simile. There were two people in the novel signaling delayed condition with extremely high scores. Their count for intrusions was 17 and 11 while the average was 4.08. This means that the average and the effect could be due to just these two persons. Indeed, if the two people are deleted from the analysis, the average of intrusions drops from $M = 4.08$, $SD = 5.13$ to $M = 2.10$, $SD = 1.97$. However, the effect is still significant ($F(1,8) = 10.95$, $p < .05$ $r = .76$).

We have to be cautious interpreting the analysis though because in the approach chosen for the analysis, the number of observations decreases the lower we get in the design. The non-significance of results may thus also be an effect of decrease in power. For example, the observed power of detecting the rather large effect size in the immediate condition of novel signaling ($r = .41$), is only $= .26$. So potentially interesting effects may have been missed (i.e. not significant) because of the way the analysis was approached.

9.5 Discussion

This section starts with a summary of the results. Subsequently these findings are related to on-line and off-line studies that motivated the present experiment. It then offers suggestions for further research.

The data demonstrate that an extended auto racing metaphor in a text on economic competition is likely to become part of the mental model of the text when the metaphorical expressions are novel or when the mapping is signaled. Integration of an auto racing schema is best when the auto racing expressions are novel *and* when the mapping is signaled. This is supported by the relatively large amount of intrusions compared to recalls from the text in the novel signaled delayed recall condition. Similar to intrusions that occurred in script recall studies indicating that people relied on a script to recall a text, a high proportion of intrusions from the domain of auto racing indicates that an auto racing schema is likely formed in this experimental condition. This strongly reinforces the idea that memory of the metaphorical auto racing theme persists after memory of the text's actual wording decays, and that memory of the

metaphorical theme is stronger when that theme is novel and is made explicit to the reader.

I hypothesized that a simile in the conventional condition would boost the use of auto racing terms much more than a simile would boost the use of auto racing terms in the novel condition. This expected interaction effect between degree of conventionality and signaling for all auto racing expressions, was not observed. Though there is a difference between the novel and conventional conditions, it does not depend on signaling. However, it is possible to increase readers' awareness of a mapping through signaling: there was a significant difference within the conventional condition. This is surprising, as one might have expected that signaling conventional metaphors more strongly boosts a reader's awareness of the underlying mapping, relative to the novel case, because they would recognize the mapping for novel metaphors even without signaling. This suggests that, though people can be more or less aware of the mapping, signaling does not increase awareness for conventional metaphors more than it does for novel; if it did, there would have been an interaction effect between the level of conventionality and signaling.

Because of the four-way interaction between signaling, conventionality, type and time of recall, the findings have to be interpreted with caution. For example, stating that significantly more terms are used when the metaphor is novel than when it is conventional, disguises the fact that this depends on whether or not we also consider the time of recall, the type of recall and whether or not the mapping is signaled. When we do consider the other factors, it becomes clear that the high number of auto racing terms in the novel condition is mainly due to the high number of intrusions in the novel simile condition of the delayed recall. Similarly, contrary to the hypothesis, there was no significant difference in the number of auto racing terms between the immediate and the delayed recall condition. When factors such as conventionality, signaling and type of recall are considered, however, differences between the immediate and the delayed condition surface. While we do observe that some conditions invite people to build metaphorical schemas more than others when they read a text with an underlying extended conceptual mapping, the exact effects of conventionality and signaling vary somewhat between the more specific situations in which they are used, suggesting that they are sometimes attenuated by other factors.

The results from the present study are consistent with early studies on script and schema recall (Bower et al., 1979; Brewer & Treyens, 1981). Auto racing expressions that were not part of the original passage intruded into

people's recall protocols. I hypothesized that if the manipulations of signaling and level of conventionality have an impact on the construction of metaphorical schemas, one would observe an interaction effect between the type and the time of recall. In other words, I expected differences in mean number of intrusions versus recalls from the text after a two-day delay compared to an immediate recall, when the subjects thus had no access to the text base and could only rely on their situation model to recall the text. The expectation was that when people cannot rely on the textbase, they will make guesses that may be plausible but wrong. This means that the guesses are not just wild guesses but are consistent with the schema (Kintsch & van Dijk, 1978, p. 375). This hypothesis implies that if people do not remember much of the text after a two-day delay but they do remember the metaphor, this should surface in a relatively higher number of intrusions compared to recalls in the delayed condition.

While there was no difference in the mean number of intrusions and the mean number of recalled items between the two moments of recall in the conventional condition, we did observe an interaction effect between type of recall (intrusion versus recall from text) and time of recall (immediate or delayed) when the reading passage was novel and when metaphor was signaled. In that condition, intrusions increased relative to recalls from the text after a delay in recall. This means that after a two-day interval, intrusions were enhanced because the original text had contained a simile as well as through the novelty of the auto racing expressions. This strongly suggests the construction of a metaphorical schema of auto racing when the metaphorical expressions are novel and when the underlying mapping is made explicit. It shows that even if people do not remember much of the actual words used in the passage, they do remember the underlying metaphor.

This experiment shows that people are more unlikely to integrate metaphorical mappings into their textual representations when they are not invited to do so. Similes and novel metaphors can function as invitations. Results by Thibodeau and Durgin (2008) showed that (non-signaled) conventional and novel expressions were equally likely to trigger source-target mappings. While an extended conventional source-target mapping may be integrated into a reader's textual representation, I found that auto racing terms, regardless of whether they were intrusions or recalls from the text, were used significantly less in the conventional condition than in the novel condition. The implication is that, on average, and for conventional rather than novel metaphorical expressions, people build a textual representation without recourse to a source domain mapped onto the target domain. It is of course

true that the methods used here cannot rule out that conceptual metaphor did not play a role during on-line comprehension; yet, compared to novel expressions, its use is not prominent in people's textual representations.

Keysar et al. (2000) found that conventional expressions are not motivated by conceptual mappings. Even when the mapping underlying conventional metaphorical expressions was signaled, people did not use conceptual metaphors. This is not in accord with the results of the present experiment, which found that signaling boosted the use of auto racing terms in the recall protocols both in the conventional and in the novel condition. In the conventional condition – and this is the condition for which Keysar et al. (2000) compared signaling versus no signaling – the use of auto racing expressions was boosted by a signal but this increase in usage did not significantly differ from the increase in the novel condition.

The present results are compatible with the Career of Metaphor Theory (Bowdle & Gentner, 2005), which suggests that conceptual mappings in the form of A is B statements are not necessarily realized in processing. As metaphors become conventionalized, mappings between the source and the target domain are typically not set up – unless the conventional metaphor is presented as a simile, which invites comparison. While the present study is consistent with Boronat's (1990) observation that there was no facilitating effect for reading a target sentence instantiating a conventional metaphor that followed a scenario with conventional metaphorical expressions, the study adds the variable of metaphor signaling to the picture. Since their material introduced the mapping explicitly through a simile in the novel metaphor scenarios (but not in the conventional scenarios), the variable was not consistently manipulated. The present study suggests that, in recall protocols, not only conventionality but also simile has an impact on the use of expressions consistent with the metaphorical schema. People who read a simile were more likely to use auto racing metaphors in the recall than those who did not read a signal. Again, this effect is an abstraction, not taking into account whether a subject recalled the text immediately or after a time delay and whether they read a novel or a conventional text. It also does not distinguish between intrusions and recalls. While there was no interaction between signaling and conventionality for overall use of auto racing terms, the significant effect for type of recalled item in the novel delayed condition with signal suggests that people are particularly likely to integrate metaphorical schemas into their models of the text when expressions are novel and when the underlying mapping is made explicit.

Like Allbritton et al. (1995), the present experiment has shown that metaphorical schemas can affect people's text representation. While their study found that people used metaphorical schemas to connect text elements without elaborate processing, my results show that people benefit from an explicit invitation to form source-target mappings.

While the four-way interaction is difficult to interpret, this experiment has shown that the variables metaphor conventionality as well as signaling do not only influence the readers' textual interpretations but also interact in complicated ways. When designing experimental material, it is therefore important to take these influential factors into account and to manipulate them carefully. This study thus addresses the limitations of earlier studies such as Boronat (1990), Keysar et al. (2000) and Thibodeau and Durgin (2008), which did not pay sufficient attention to manipulating these factors consistently across conditions (e.g. they compared a conventional unsignaled condition with a novel signaled condition or conventional signaled condition with a conventional unsignaled condition). As the present experiment has shown this contributes to the contradictory findings.

Individual differences

The results show that novel metaphors and signaling of the mapping by a simile are more likely to encourage mappings than an absence of these features. As noted further above, this still does not mean that every person creates a mapping – even if they are invited to do so. Although the results are statistically significant, there were in fact 14 participants in the conventional condition and 8 in the novel condition who did not use *any* metaphorical expressions. As always, one must remember that what is true for a population on average may not hold for a particular individual.

This observation calls for further research that investigates individual differences in recalling texts with extended metaphorical mappings. For example, Pearson et al. (1981) tested children's recall of expository passages. They found that metaphors facilitated recall only when the subjects were unfamiliar with the topic of the passage. For familiar passages there was no significant difference between a metaphorical and a literal version of the passage. These results are compatible with conceptual metaphor theory in that mappings from concrete, more familiar domains of knowledge are said to aid understanding more abstract or new topics. Future research on recalling text with an underlying extended metaphor needs to test in how far pre-knowledge of the target domain and pre-knowledge of the source domain correlate with the recall scores. In other words, did people's familiarity with the topic of the

news passage and the sport of auto racing before they read the article influence whether their text representation is built on an auto racing schema as reflected in the total number of auto racing terms they use? As with Pearson et al. (1981), Meyer (1987) (as cited in Halpern, 1990, p. 299) notes that such aids are most useful for people with little knowledge about the topic. Knowledge of the topic is not the only relevant factor. Halpern (1987, 1989) (as cited in Halpern, 1990, p. 304) suggests that familiarity with the base concept determines comprehension and memory of the target concept.

Differences in memory ability for text have also been found for high-span versus low-span readers (e.g. Blasko, 1999; Whitney et al., 1996). Readers who have difficulty integrating different text propositions (low-span readers) benefited from the presence of metaphors since they encourage establishing relations between concepts. Signals also encourage relational processing in poor readers, leading to better recall of texts (B. J. Meyer, Brandt, & Bluth, 1980). Following from this, it is possible poor readers need an aid that points out the metaphor in order to encourage relational processing, while good readers exhibit relational processing without such an aid. Extrapolating to the context of the present study, this suggests that some people need the extra aid of simile to build a metaphorical model while others do not. However, research has yet to show a convincing relationship between processing effort and memory of metaphors (Gibbs & Tendahl, 2006, p. 389) (referring to Craik & Tulving, 1975).

Besides factors discussed above, there are other participant characteristics, such as subjects' interest in the topic, that may have an influence on recall. Bear in mind that the readers' goals also influence their text representation and memory (e.g. Graesser, Singer, & Trabasso, 1994; Schmalhofer & Glavanov, 1986) and thus a laboratory test context may distort the findings somewhat.

Deliberate versus non-deliberate metaphors

Corpus linguistic research (Steen et al., 2010) has shown that the bulk of metaphor is neither in the form of A is B nor in simile form, and is rarely novel. Most metaphor in authentic language use is therefore probably not processed via a cross-domain mapping. Steen (2008) suggests a three-dimensional model of metaphor, encompassing a metaphor's linguistic form (metaphor or simile), its conceptual structure (novel or conventional) but also communicative function (deliberate or non-deliberate). He argues that metaphor is processed by comparison when a language user is deliberately invited to perform a cross-domain mapping. Most metaphors, however, are

not deliberate and as a consequence not processed by comparison. They are not meant to make the reader approach the target domain via a different domain. He suggests that extended metaphors are likely experienced as deliberate; however, the present research has shown that a more differentiated picture is required. The present results indicate the need for a distinction between extended mappings for conventional and novel metaphors. The latter are remembered much better and generate more intrusions in delayed recall when coupled with a simile. Novel metaphors, compared to conventional ones, may be more likely to be recognized and remembered as a rhetorical device or play on words. It is possible that subjects in the novel unsignaled conditions and the novel signaling conditions, in particular, perceived the auto racing metaphor as deliberate, causing them to perform mappings from the source domain of auto racing to the target domain of economic competition.

As is the case with novel metaphors, a mapping that has been made explicit may also be perceived as a rhetorical device used by the journalist to induce a change in perspective on part of the reader. Since such markers also signal deliberateness (e.g. Goddard, 2004), I expected an interaction effect for all auto racing terms between level of conventionality and signaling. Surprisingly, and contrary to my hypothesis, there was no interaction effect between signaling and conventionality. While on average people used more auto racing terms in the signaling condition than in the unsignaled condition, the difference between total auto racing terms in the unsignaled versus the signaled condition in the conventional group was statistically the same as for the signaled versus the unsignaled condition in the novel group. This means that simile always improves recall, regardless of whether the linguistic metaphor is conventional or novel. While I expected that novel metaphors would be sufficiently explicit as to be unaffected by signaling, I also anticipated that signaling would enhance awareness of conventional metaphors. The data do not support this expectation. (Recall that this interpretation does not make a difference between recalled items and intrusions.) We can try to understand this finding in the following way: if a writer's goal is to make the reader think of the topic in terms of a source domain, it may not be enough to indicate a mapping by signaling a deliberate play on words through extended conventional mappings – the data indicate that integration of metaphor in the reader's model of the text is most effectively achieved with signaled *novel* metaphors. It may also be possible, however, that the conventional expressions in the stimulus text are perceived as deliberate but not as particularly interesting and may thus trigger fewer thoughts in the construction of the schema than the novel expressions do.

The overall higher usage rate of auto racing terms in the novel condition still does not mean that every novel metaphor is always processed by comparison, even – or particularly – in the context of an extended mapping. It may be the case that once the mapping has been integrated into the story schema any other auto racing expressions are only superficially processed. As Cameron (2003, p. 118) observed, a deliberate metaphor may start a process of conventionalization, which means it moves towards being processed via categorization. A look at individual subjects leads to the tentative proposal that some people may not perform such mappings at all or not sufficiently and thus do not integrate a conceptual schema of auto racing into their overall text representation, even when the expressions are novel and the mapping is made explicit. Steen (2008) cautiously states that “(...) all metaphor that is experienced as deliberate is presumably processed metaphorically (...)” (p. 238). If we assume that an extended metaphor is deliberate, however, these results cast some doubt on that idea.

The perception of metaphors as deliberate may also be influenced by genre expectations (e.g. Gibbs, Kushner, & Mills, 1991; Steen, 1994). Zwaan (1994) found that memory is also influenced by genre expectations. For instance, when people believe they are reading a news article, the situation model is enhanced, whereas the surface code is reduced. If they believe they are reading a literary text, however, they pay more attention to the wording. For news, by contrast, their major concern is about “what is true about the world”, which results in a stronger situation model. The present experiment may therefore not only be discussed in the light of schemas that may or may not have been established, but may also be connected to the communicative function of metaphor as well as a genre model. For example, the study could be reproduced by embedding an extended metaphor into a literary text instead of a news report. In a different follow up study subjects could be asked to indicate which expressions they think were deliberately chosen by the journalist. This, too, may be influenced by signaling and the degree of conventionality of metaphorical expressions. The results from the recall study could then be compared to perceived deliberateness of metaphorical auto racing expressions.

Level of abstraction and coherence

While my research has shown that readers are likely to generate a metaphorical schema under certain conditions, we do not know at which level of abstraction this schema operates. Bower et al. (1979, pp. 215-216) note that it is difficult to determine the level of abstraction at which we use and modify scripts. For

example, if a text is about a specific cardiologist, is the script about visiting a cardiologist, a doctor, a health professional, any professional, a person or about going to a certain place to talk to a certain person? One answer Bower et al. (1979) suggest is that successive clues in the text activate the most detailed script available. When a person begins to read a text, he or she has to establish an initial schema that may need to be modified later as the text proceeds. In an alternative view, readers start out with an ill-defined schema and build it up as they progress through the text. Bower et al.'s (1979) examples can be transferred to the metaphorical schema of auto racing. Is the auto racing schema an instance of auto racing, racing, a sports competition, driving in general or fast movement? Did the readers (who did not receive a simile) start out with a more general schema and then, as they proceeded through the text and encountered further related expressions, establish a more specific auto racing schema? In a more detailed analysis of the recall protocol that would devise a fine-grained manual coding procedure, each item part of the metaphorical schema could be coded for its level of abstraction. This would shed more light on the level at which the auto racing schema operates.

Finally, since metaphors can add to the coherence of a text when they span several statements in discourse and thereby facilitate discourse cohesion (Graesser et al., 1988, p. 134), future research may manipulate the number of metaphorical expressions as well as how spaced out the expressions are to provide a more differentiated picture on the cohesive function of metaphors. Presumably, the more space is left between each of the test expressions, the more difficult forming a metaphorical schema will become.

9.6 Conclusion

The study has laid the ground for a range of possible ensuing research projects on extended metaphors and the circumstances under which they are likely to become part of readers' mental representations of a text. It has also filled three major gaps in the research of metaphor comprehension. First of all, the test material is more realistic and believable than the 'textoids' used in previous studies. Second, it is the only experiment to date that has kept the number of source domain terms constant across conditions, has placed novel test items only into the novel condition and conventional ones only into the conventional condition, and has avoided mixing direct and indirect metaphor. Furthermore, both signaling and conventionality have been manipulated across all conditions. Though there have been a number of studies addressing the

effect of conventionality on the activation of conceptual domains (e.g. Boronat, 1990) and the effect of making a mapping explicit (Keysar et al., 2000), the present study is the first to have tested for interaction between these two manipulations. Since memory studies and reaction times studies tap into different stages of processing, we cannot directly link their results. Although recall tasks do not offer the precision of on-line comprehension tasks and their results tend to be “messier”, they have the potential to offer a more complete picture of the products of figurative processing.

Results suggest that source-target domains are psychologically real only under certain conditions. Connections between source and target domain tend to be integrated into readers’ mental models when they are explicitly invited to do so. Signaling of the mappings and novel metaphors are such invitations. The more such explicit markers, the better the integration of the metaphorical schema into a reader’s textual representation. These findings have to be viewed with caution, however. A four-way interaction between conventionality, signaling, type and time of recall was found. This means that the main effects confirming my hypothesis about the impact of conventionality and signaling (higher number of auto racing terms in the novel condition than in the conventional condition as well as higher number of terms in the signaling condition than the unsignaled condition) depends on which of these other variables are considered.

9.7 Appendix

Coding instructions for separating recalls from the stimulus text and intrusions

Instructions for coding the recall of the seven metaphorical items:

A recalled item is an **exact match** (coded as 1) when it contains the *core item* of an expression (for core items refer to table below). A recalled item is a **partial match** (coded as 2) when the *core item is not present but the non-core item is*. The expression must be similar in meaning in order to count as partial match. An item is considered a **borderline case** (coded as 3) when

1. the core item is present but the meaning is very different from its original use,

2. the item used in the recall is the novel equivalent of the conventional term (in the conventional condition) or the item is the conventional equivalent of the novel term (in the novel condition) or
3. the item contains part of the core item and can clearly be used as a synonym of the test item.

If no exact, partial or borderline match can be found for an item, the item receives the code 0 for **no-match**.

If an item appears more than once in a recalled passage it is only counted once.

	expression	core item	non-core item
1	pulled ahead (convent. cond.)	pulled	ahead
	turbocharged ahead (novel cond.)	turbocharged	ahead
2	left...miles behind (convent. cond.)	miles	behind
	left...laps behind (novel cond.)	laps	behind
3	accelerating (convent. cond.)	accelerating	
	revved-up (novel cond.)	revved	
4	stalled (convent. cond.)	stalled	
	sputtering...engine (novel cond.)	sputtering	engine
5	veering off course (convent. cond.)	veering or course	
	fishtailing (novel cond.)	fishtailing	
6	leading position (convent. cond.)	leading	position
	remain on the inside track (novel cond.)	inside	track
7	take the prize (convent. cond.)	prize	
	take the checkered flag (novel cond.)	checkered flag	

Please judge whether the seven metaphorical units offered in the reading passages were used in the recalled passage *using the above coding scheme*. For the control conditions, please refer to the test units in both the novel and the conventional conditions to check whether any of the items have been used in the recalled controls.

*Test passages¹²**control:***Economic Development**

Economic development is a challenging and competitive process. Consider, for example, Mexico's developing economy. While other newly industrialized countries like China and India have become economic superpowers, Mexico has not experienced the same kind of success. A number of reasons can be cited for Mexico's underperformance relative to these other growing economies. For one thing, Mexico is extremely dependent upon the United States. But our country is struggling with its own troubled economy. And both Mexico and the United States will be losing more and more manufacturing jobs to Asia in the future.

Of course, the financial integrity of the United States is also somewhat dependent upon Mexico. The state of Texas, for instance, is deeply concerned about Mexico's economic development, because Mexico's role in the global economy has consequences for Texas real estate markets. In fact, our country's entire economy could wind up being further harmed if the situation in Mexico does not improve. If the United States wants to remain dominant in the world marketplace, then we should consider doing more to help Mexico's economic development. Otherwise, Asia might take control of the global economy.

*conventional; no simile:***Economic Development**

Economic development is a challenging and competitive process. Consider, for example, Mexico's developing economy. While other newly industrialized countries like China and India have **pulled ahead** economically, Mexico has been **left miles behind**. A number of reasons can be cited for Mexico's underperformance relative to these other **accelerating** economies. For one thing, Mexico is extremely dependent upon the United States. But our country is struggling with its own **stalled** economy. And both Mexico and the United States will be losing more and more manufacturing jobs to Asia in the future.

Of course, the financial integrity of the United States is also somewhat dependent upon Mexico. The state of Texas, for instance, is deeply concerned

¹² Auto racing terms are printed in bold for reference. In the experiment, auto racing terms were not marked.

about Mexico's economic development, because Mexico's role in the global economy has consequences for Texas real estate markets. In fact, our country's entire economy could wind up **veering off course** if the situation in Mexico does not improve. If the United States wants to retain its **leading position** in the world marketplace, then we should consider doing more to help Mexico's economic development. Otherwise, Asia might **take the prize** in the global economy.

conventional; simile:

Economic Development

Economic development is a challenging and competitive process, very much like auto racing. Consider, for example, Mexico's developing economy. While other newly industrialized countries like China and India have **pulled ahead** economically, Mexico has been **left miles behind**. A number of reasons can be cited for Mexico's underperformance relative to these other **accelerating** economies. For one thing, Mexico is extremely dependent upon the United States. But our country is struggling with its own **stalled** economy. And both Mexico and the United States will be losing more and more manufacturing jobs to Asia in the future.

Of course, the financial integrity of the United States is also somewhat dependent upon Mexico. The state of Texas, for instance, is deeply concerned about Mexico's economic development, because Mexico's role in the global economy has consequences for Texas real estate markets. In fact, our country's entire economy could wind up **veering off course** if the situation in Mexico does not improve. If the United States wants to retain its **leading position** in the world marketplace, then we should consider doing more to help Mexico's economic development. Otherwise, Asia might **take the prize** in the global economy.

novel; no simile:

Economic Development

Economic development is a challenging and competitive process. Consider, for example, Mexico's developing economy. While other newly industrialized countries like China and India have **turbocharged ahead** economically, Mexico has been left **several laps behind**. A number of reasons can be cited for Mexico's underperformance relative to these other **revved-up** economies. For one thing, Mexico is extremely dependent upon the United States. But our country is struggling with its own **sputtering** economic **engine**. And both

Mexico and the United States will be losing more and more manufacturing jobs to Asia in the future.

Of course, the financial integrity of the United States is also somewhat dependent upon Mexico. The state of Texas, for instance, is deeply concerned about Mexico's economic development, because Mexico's role in the global economy has consequences for Texas real estate markets. In fact, our country's entire economy could wind up **fishtailing** if the situation in Mexico does not improve. If the United States wants to remain on the **inside track** in the world marketplace, then we should consider doing more to help Mexico's economic development. Otherwise, Asia might **take the checkered flag** in the global economy.

novel; simile:

Economic Development

Economic development is a challenging and competitive process, very much like auto racing. Consider, for example, Mexico's developing economy. While other newly industrialized countries like China and India have **turbocharged ahead** economically, Mexico has been left **several laps behind**. A number of reasons can be cited for Mexico's underperformance relative to these other **revved-up** economies. For one thing, Mexico is extremely dependent upon the United States. But our country is struggling with its own **sputtering** economic **engine**. And both Mexico and the United States will be losing more and more manufacturing jobs to Asia in the future.

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CHAPTER 10

Conclusion

Lakoff and Johnson's (1980) publication of *Metaphors we live by* changed the way many scholars conceive of metaphor. What had been little more than a poetic feature of language has now come to be viewed as a central device in human thought. We use metaphorical expressions not only to talk about but also to think of one thing in terms of another. This new way of looking at metaphor puts a strong focus on conventional metaphorical patterns in language, which are postulated to reflect cognitive structures in the human mind. The approach pioneered by Lakoff and Johnson has not traditionally been concerned with authentic language use but has instead relied on invented linguistic expressions of conceptual metaphors that are presented and analyzed out of context. Likewise, data collection methods and conceptual metaphor formulations have not typically been transparent (e.g. Gibbs, 2006; Haser, 2005; Jackendoff & Aaron, 1991; Murphy, 1996; Ritchie, 2003; Verwaeke & Kennedy, 1996). Recently, a number of scholars (e.g. Boers, 1999; Cameron, 2003; Charteris-Black, 2004; Deignan, 2005; Koller, 2004; Musolff, 2006; Semino, 2002; Steen et al., 2010) have realized that discussing theoretical constructs apart from their context in actual language use cannot advance the field in the long run. Motivated by this realization, these and other scholars have begun to explore metaphor in authentic discourse. With the advancement of computer technology, it has become easier to analyze larger quantities of texts – to study, for example, frequencies and patterns of selected metaphorically used words in discourse – to reveal metaphor's functions and ideological underpinnings.

Journalistic writing has been heavily used as a data source for metaphor analysis. Scholarly research topics have included the kinds of metaphors pervading immigrant discourse in the print media (Santa Ana, 1999), metaphors for communication in British news reports (Heywood & Semino, 2007), the function of war metaphors in business news magazines (Koller, 2002), metaphorical framing of UK press coverage of a sleep drug (Coveney, Nerlich, & Martin, 2009), and metaphor scenarios in news reports about the European Union (Musolff, 2006), to name just a few. While this research gives us insight on the use of a selected sample of conceptual or linguistic metaphors in a subregister or on specific topics, metaphor use in news as a whole register has not been given due attention. Little has been known about frequency,

forms, use and function of metaphorical language in newspapers compared to other domains of discourse.

A comprehensive analysis of metaphor in newspapers requires a corpus-linguistic, quantitative approach to reveal general trends that distinguish its use from that in other registers. It also requires focused, qualitative analysis of specific phenomena or selected texts or text passages to understand the function of metaphor in a larger discourse context. One reason for the lack of an understanding of metaphorical language use in newspapers that goes beyond the analysis of a few texts, topics, or a restricted sample of conceptual and/or linguistic metaphors, is the lack of newspaper articles that have been coded for *all* metaphorical language on the basis of a systematic, explicit metaphor identification protocol.

This thesis has taken concrete steps to improve the situation. Within a team of researchers I have built a database of language from four different registers – news, fiction, academic texts and conversation – annotated for metaphor based on a transparent, systematic protocol for metaphor identification derived from MIP, the Metaphor Identification Procedure (Pragglejaz Group, 2007). MIP and the refined MIPVU method are procedures that work bottom-up, i.e. they are only concerned with identifying linguistic metaphor, not conceptual structures. The conceptual level of analysis is addressed separately, which adds transparency to the procedure. This methodological separation between identifying metaphorically used words and specifying underlying conceptual structures has also been put forward in Cameron (2003) and Charteris-Black (2004). Such bottom-up approaches have a clear advantage over a top-down analysis that would start out from conceptual metaphors, since a complete list of conceptual metaphors could not exist and lexical units with potential underlying cross-domain mappings would likely be missed.

The Pragglejaz Group (2007) tested the reliability of the coding performance of metaphor analysts using MIP. Results were good and suggested that the procedure works. Does this still hold, however, when the method is applied to bulk data? No prior research on metaphor in newspapers has specifically addressed the applicability of metaphor identification procedures such as MIP to newspaper texts. Nevertheless, any validity of metaphor analysis depends on systematic, repeatable metaphor identification. When I and other analysts implemented the MIP procedure to identify metaphor in news texts, a small number of challenging cases emerged. Analysts experienced difficulties establishing the contextual meaning of words, for example, due to ambiguous context or technical use of terms in the business

and sports section. Technical terms were not automatically excluded from metaphor analysis. While they may not be metaphorical to an expert, they may well be for an everyday language user such as the reader of newspapers. The same policy was followed in Cameron (2003). Disadvantages also surfaced due to reliance on only one dictionary. This was a problem in cases where it was unclear whether there was sufficient contrast between senses. It also caused difficulties when prolonged analyst discussion did not lead to a decision on the metaphorical status of a unit. Furthermore, the MIP procedure does not cater to direct metaphors (e.g. “he wings up high like an *eagle*), of which news texts contain relatively many compared to other registers. It also does not include instructions on how to deal with personification.

The small number of complex or challenging cases can be solved within the more refined procedure MIPVU, which was developed during the annotation process. An in-between category was introduced for lexical units for which the context allows a metaphorical and non-metaphorical interpretation at the same time. A small number of cases where analysts could not agree on how a lexical unit should be annotated were also subsumed under this category. The consultation of a second corpus-based dictionary (*Longman English Dictionary*) and a historical dictionary (*Oxford English Dictionary*) in rare cases helped to systematically approach difficulties in determining the basic meaning and to decide on sufficient contrastiveness of the senses. A set of instructions was added to MIP in order to capture lexical units that are metaphorically used due to personification and directly used metaphorical language. The scope of MIPVU is thus wider. It does not restrict its attention to indirect uses of metaphorical language but focuses on indirectness in conceptual structure: one conceptual domain acts as a source domain to understand another conceptual domain.

Even though the MIPVU method has proven to be highly suitable for present purposes, it is important to be aware of its limitations. One such limitation pertains to the use of dictionaries for metaphor identification. Dictionaries are targeted at their users and may thus not capture all existing usage. For example, pedagogical dictionaries, such as Macmillan, may contain simplified examples and may ignore subtle meanings. More generally, space is a constraining factor and may have an influence on the meaning descriptions that are provided (Deignan, 2005). Thus results will depend somewhat on the kinds of dictionaries used. While one dictionary may tend to present meanings as separate sense descriptions, another may have the tendency to collapse senses. This will have an impact on how one makes a judgment as to the distinctness of two senses. Thus, relying on Macmillan alone may have resulted

in slightly different annotations. As long as an analyst is aware of these limitations, dictionaries are an important tool in moving away from guesswork and intuition, as they support analysts' linguistic metaphor identification with carefully compiled language data.

Applying MIPVU to newspaper texts is particularly straightforward. This was demonstrated in a series of tests checking the reliability of the coding performed by four analysts. Compared to metaphor identification in fiction, conversation and academic prose, news texts had the lowest percentage of cases that did not receive unanimous coding. In a number of tests analyst bias was significant. This bias was reduced in building the actual database, however, due to group discussions for cases of disagreement. Due to its accessible writing addressed to a general audience, the metaphorical status of lexical units in news can typically be judged quickly by an analyst familiar with MIPVU. The few complex cases contributed to a refinement of MIP and can now also be solved in systematic and reliable ways. While MIPVU can deal even with complex cases, it is not error free. Using MIPVU for building a database of language annotated for metaphor does, however, keep error to a minimum. Following recommendations by the Pragglejazz Group (2007), I provided maximum transparency of data collection and analysis by not only detailing the MIPVU protocol and testing its empirical quality but also by reporting on the remaining error, such that any interpretations following from the analysis can be put into perspective. This addresses methodological concerns regarding data collection methods traditionally used in cognitive linguistics, as raised by Gibbs (2006, 2007). The annotation method yielded about 45,000 words of newspaper language coded for (non)metaphorical usage and a roughly equal amount of words in three further registers: fiction, conversation and academic texts.

Metaphor in language

This unique database opens up a whole new field of research that has been unduly neglected in cognitive linguistic approaches to metaphor – the variation of metaphorical language use across different kinds of discourse. It allowed me to address and answer questions such as:

How common is metaphorical language in newspapers and how does its frequency compare to that of other registers?

How is metaphorical language distributed across word classes and how does this pattern interact with register?

What is the distribution of different forms of metaphor such as indirect, direct, and implicit metaphor? How commonly are these forms signaled?

There has been some prior work on metaphor variation across different types of discourse. For example, Skorczynska and Deignan (2006) compare metaphor use in academic and popular business discourse. Their analysis depends on a method of pre-selecting material. They first identify metaphorically used lexical items in a subcorpus according to a procedure used by Charteris-Black (2004). This identifies a set of metaphors in an elegant and unbiased way; in essence, they let the data select their metaphors for them. They then search the entire corpus for the metaphors identified in their subcorpus. While this method can handle large amounts of data, it does not capture all metaphorical language in the corpus; it only repeats instances of those that were present in the subcorpus. The method is thus not ideal for revealing more general patterns that are typical of metaphor related language in one register versus the other. Semino et al. (2009) tried to get a global impression of differences between science writing targeted at experts and science writing targeted at laymen, by using the semantic annotation tool Wmatrix (Rayson, 2008). This method does not depend on pre-defined search-strings that are concordanced, but the analyst still focuses on one or several semantic fields the tool suggests as interesting instead of describing trends that apply to metaphor use more generally in the whole corpus. My corpus aims to capture all metaphor-related language, regardless of source domain, and can therefore provide an answer to the questions above. In order to make the description of metaphor use in newspapers more meaningful, I compared and contrasted the data to other registers in both qualitative and quantitative terms. Since the data in newspaper texts were collected with the same method as the data in the other three registers, the comparisons I made were based on the same assumptions. This entails a degree of validity that has not been achieved before and improves on Goatly's (1997) work on metaphor variation across several domains of discourse, for which data collection procedures were less clear.

I showed through quantitative analysis that news language, compared to fiction and conversation, is fairly metaphorical. 16.4% of all lexical units are related to metaphor. To my knowledge this is the first enumeration of the proportion of metaphor related words in newspapers, based on reliable data annotation. Note that this figure is limited to metaphor at the level of lexical

units. Including metaphor on the level of morphology as well as considering the historical development of words would increase the proportion.

The relatively frequent metaphorical language use in news seems to be typical of highly informational registers. The concepts of “informational production” and “involved production” – typical of (e.g.) news and spontaneous conversation, respectively – were extensively studied in seminal work by Biber (1988) and Biber et al. (1999). For example, news reports and other highly informational texts such as academic writing are characterized by a prominent use of nouns, prepositions, or adjectives, whereas adverbs and verbs are a less common feature and are more typical of involved registers such as conversation. Biber (1988) and Biber et al. (1999) grouped a range of registers according to these and other dimensions, based on the co-occurrence of linguistic features such as word classes or tense and aspect markers, and argued that in order to understand those features it is necessary to analyze their function in discourse. Their functions are connected to the larger context in which texts are embedded, such as production circumstances, audience, or communicative goals. The resulting register descriptions are detailed and extensive. They were meant as a grammatical description of the registers and thus did not mean to include metaphor-related language as a linguistic feature. My research expands and enriches Biber’s work on register variation by introducing metaphor into the picture. At the same time, this innovation adds a sociolinguistic angle to the cognitive tradition of metaphor studies.

Compared to newspaper texts, academic writing, which is also high on the informational scale, is characterized by an even larger percentage of metaphorical language. By contrast, conversation, a more involved register, contains a comparatively lower incidence of metaphorical language. This makes sense from a cognitive-linguistic point of view: journalists try to communicate complex and often abstract topics to an audience in written form and may thus employ more metaphorical language than people engaged in face-to-face conversation about everyday topics who also have non-verbal means of expressing abstract ideas (Cienki & Müller, 2008).

I have shown that the picture is more complex, however: there is a three-way interaction between the variables register, metaphor and word class. This means that metaphor cannot be interpreted without taking into account register *and* word class. For example, nouns are comparatively more prominent in informational registers such as news, whereas verbs are less common. In conversation, this distribution plays out in the opposite way: the spoken register is characterized by a high frequency of verbs, whereas the use of nouns is less typical (Biber, 1988). Therefore, the absolute number of metaphorically

used words should be interpreted relative to the importance of word classes in a register.

The finding that metaphor use does not parallel the distribution of word classes within a register adds a substantial enrichment to the research on register variation of Biber and co-workers. As an informational register, news is characterized by a high proportion of nouns, prepositions, and adjectives. However, metaphorical nouns are not prominent in news. The frequency of metaphors within a word class is high for prepositions, adjectives and verbs. Relative to other registers, metaphorically used verbs, adjectives and adverbs are more common in news.

Metaphor variation across registers can be connected to functional differences that surface in differing distributions of word classes. The attention to functions of metaphorical language use goes beyond the usual cognitive linguistic concern for general patterns that are abstracted across language users. Even if metaphorical language use arises through common human experience and thus occurs in all kinds of human interaction, it can still function in different ways in different kinds of discourse. I focused on the two word classes of nouns and verbs, which both exhibit unexpected patterns. While verbs are in general not prominent in news, metaphorical verbs are. Nouns are a typical feature of news but metaphorical nouns are not. A close examination of the most frequent nouns allowed the following interpretation. News articles report about newsworthy events. This involves writing about people and places, which requires the choice of non-metaphorical nouns. Frequent references to time (when something happened) or institutions, such as government, are abstract, but they do not have a more basic meaning and are thus never metaphorically used.

Newspaper texts, being high in informational content, contain a relatively low proportion of verbs. Verbs are more typical of involved registers such as conversation. My analysis has shown, however, that when verbs are metaphorical, they are more typical of news than of conversations. I identified the use of personification as one influential factor for this unexpectedly prominent use. The spontaneous conversations in our data are about the here and now and revolve around real people and their actions, which requires largely non-metaphorical use of verbs. This picture may be different for other kinds of spoken language such as educational talk, for which Cameron (2003, 2008) found a high proportion of metaphorically used verbs compared to other word classes. Journalists need to communicate their message efficiently within restricted space. Applying human action verbs to abstract entities (e.g.

“the US has *talked* of (...)” allows for dense information packaging and at the same time avoids conceptual complexity.

My analysis furthermore quantified, for the first time within the same dataset, not only indirect but also direct and implicit metaphor as well as metaphor signaling. By far the most common form of metaphor in news (and the other registers) is indirect metaphor. The proportion of direct metaphor in newspapers is similar to that in fiction – it is higher than in academic texts or in conversation. Signals for direct metaphor are more common in fiction than in news, however. This finding may be related to the communicative, deliberate use of metaphor (e.g. Bogusławski, 1994; Cameron, 2003; Cameron & Deignan, 2003; Goddard, 2004; Steen, 2008). Signaling a metaphor forces the recipient to view the topic from a different perspective. Thus literary texts may be experienced as more metaphorical than newspapers and those in turn more metaphorical than academic writing or casual conversation. Overall, lexical units that function as signals for metaphor are rare. This finding may provide an impetus for reevaluating theoretical models and materials used in metaphor processing research, which has extensively studied how similes work differently from metaphors (e.g. Bowdle & Gentner, 2005; Glucksberg, 2008; Glucksberg & Keysar, 1990; Jones & Estes, 2005).

The pattern for implicit metaphors is the same as for indirect metaphors. News ranks second in frequency of implicit metaphors – behind academic texts but before fiction and conversation. The high proportion of implicit metaphor in newspapers can be related to frequent anaphoric references using *it* or *they* (e.g. “to capture power and then use *it*” (A1J-fragment34), which may contribute to establishing coherence across sentences and paragraphs in written discourse.

These results are only the beginning. The database is a rich source for further research that can expand the metaphor profile for newspapers presented here. Further in-depth analysis can be performed on other word classes that have not received detailed attention in this work: adjectives, adverbs, prepositions, determiners, or conjunctions. Follow-up research could investigate the typical location of metaphorical language in news articles. For example, Koller (2003b) found that metaphors tend to cluster towards the end of reports in business magazines. They tend to have a summarizing function or add extra force to an argument to make it particularly persuasive. Thus further analysis could check whether metaphorically used words tend to occur in the lead of a news article, in the main part, or indeed towards the end, and whether there are differences in the typical location of metaphor use in comparison to other registers. The same question could be pursued on a paragraph or

sentence level. The suggested analyses and those presented in this work have only become possible because of exhaustive, precise data collection in a number of registers.

This hand-annotated corpus provides the solid basis that is needed for the kind of quantitative analysis performed here. Annotation by hand, however, naturally limits the size of the corpus that can reasonably be built. Due to the small number of texts, in particular for the academic register and for fiction, interpreting the usage of individual lexical items needs to be approached with caution. If certain metaphorical units are found mainly in one text, for instance, the observation may be topic-dependent and their use may not be an adequate reflection of the register as a whole. In my discussion of the use of nouns and verbs in newspapers versus academic texts and conversations respectively, I alleviated this danger by excluding items from the analysis when a single text contributed a majority of their citations. There is another caveat due to sampling. In order to select a variety of different texts, several of the fiction chapters, academic articles and recorded conversations were truncated because they were very long. If metaphor is not evenly distributed across texts – and there is research that points in that direction (e.g. Koller, 2003b) – this may have an undesired influence on the results. Future work might seek to study a corpus with a different distribution of subregisters. While we can see that the present corpus has a somewhat uneven distribution, it is not apparent that there could ever be a single best, most representative distribution.

Finally, the results from this study remain tentative because the statistical techniques employed assume that observations are independent. Lexical units are unlikely to be independent because they are surrounded by other units and are part of sentences and paragraphs. The analysis performed here is a reasonable first step, but future research needs to employ more sophisticated techniques in order to rule out potential bias.

While statistics can give insight into patterns and general tendencies of metaphorical language in newspapers and allow for the formulation of further hypotheses, this alone is not enough. In order to understand the functions of metaphor in newspapers – why a particular metaphorical expression occurs in a particular text or context, and in a particular form or pattern – a more fine-grained, qualitative analysis of its manifestations in discourse is helpful (Semino, 2008).

In a number of news texts, metaphorical language use fulfills conceptual functions, as conceptual metaphor theory would predict. The journalist needs to get across a message that is immediately clear. Metaphorically used words

can be helpful because they make abstract, complex topics such as politics and business more tangible. They may also be used to fill terminological gaps, in particular in the business news section. Metaphorical expressions can reduce complexity and may thus enhance understanding. Journalists also employ metaphorical language as a cohesive device to connect clauses, sentences, and paragraphs. This gives structure to the text (Goatly, 1997) and may enhance readability and comprehensibility – essential qualities for a register in which direct feedback and questions from the audience are not possible.

Metaphor is not merely used as a conceptual and a textual device. In newspapers, it is employed for a range of communicative purposes, such as to entertain, to persuade, to inform, to explain or to evaluate. As Cameron (2003) and Steen (2008) pointed out, these communicative functions surface most prominently in the deliberate use of metaphorical language. A deliberately used metaphorical expression aims at making the reader consider a topic from an alternative perspective. I examined the patterns and functions of deliberate metaphors in newspapers and linked them to the larger context in which newspapers are embedded. Moving the communicative function of metaphor into the spotlight counterbalances conceptual metaphor theory's lopsided focus on the conceptual nature of metaphor. It adds a discourse perspective to the conceptual one by demonstrating that the selection of figurative language and its linguistic form may be mediated by contextual factors (e.g. Caballero, 2003; El Refaie, 2001; Holmgreen, 2008; Wee, 2005).

Examples of patterns of deliberate metaphor use in newspapers are topic-triggered metaphors and expressions from related semantic fields that cluster together or expand across larger stretches of text. Topic-triggered metaphors in soft news may create humorous effects that tie the reader to the text by highlighting both the topic of the text and the source domain. Newspapers do not only inform, they also seek to entertain. Deliberate uses of metaphor have the potential to grab the reader's attention and make them want to finish reading the article. Unlike in face-to-face conversation, this is essential for a register that does not allow direct interaction with an audience. As the newspaper editor Brisbane (as cited in Carlson, 1937) put it, "never forget if you don't hit a newspaper reader between the eyes with your first sentence, there is no need of writing a second one." Topic-triggered metaphors may serve different goals in other contexts. They may function as persuasive devices by opposing metaphorical and literal uses.

Clusters of related expressions or topic-triggered metaphors also have cohesive effects. Just because an instance of metaphorical language use serves communicative functions does not mean that it cannot act as a textual or

conceptual device, as well. At the same time, clusters do not necessarily point to deliberate metaphor use. I found that, in newspapers, spatial and directional terms such as *come* and *way* tend to occur in close vicinity to other movement-related lexemes, even in texts that do not employ metaphor as a rhetorical device. Such clusters are extremely rare in spontaneous conversation data. Journalists have enough time to employ them as cohesive devices, but they are not meant to draw the reader's attention to the source domain. This analysis of only two lexemes does not allow for further extrapolation to the use of other movement-related terms, however. It calls for further systematic analysis of a larger sample in order to see whether similar patterns apply.

Journalists may also employ metaphor deliberately to achieve stylistic effects or to play with sounds. For example, the deliberate use of personification in soft news may raise the appeal of the text, similar to its use in fiction. Personification in journalistic writing is not commonly deliberately used – even though it may be subtly persuasive. Instead it is employed for efficient, space-saving communication and it reduces complexity.

Deliberate metaphors do not only come in groups of semantically related metaphorically used words, and neither are they necessarily triggered by the topic of the text. They may also occur as isolated cases and belong to any potential source domain. Not only their distribution across texts is varied. They may take on different levels of conventionality, linguistic forms, and may or may not be signaled, though signaling and novel metaphorical expressions, as well as direct metaphor, almost always point to deliberate metaphor use.

The concept of deliberateness can explain why a news text with a high percentage of metaphorical expressions may not necessarily 'feel' particularly metaphorical. Only if the metaphorical expressions are deliberately used is the reader encouraged to view the topic from a different perspective. A number of articles in my database, even though they rank high in metaphor use, do not contain deliberate metaphors. Not every news article is full of creative language play, extended mappings and other patterns that encourage the reader to make a connection between two disparate domains. In fact, most metaphorical language use in news is conventional, non-deliberate and typical of language use in general. While topic-triggered metaphors and semantically related metaphorical expressions that stretch across long sections of texts are a characteristic feature of news texts, their use is not the norm. To date, discussion based on corpus analysis has typically focused on the "nice" and "interesting" examples. This can be enriching and insightful, and it has also been an approach employed here. Unfortunately, however, most research stops there. Semino (2008, p. 225) writes:

I should point out in conclusion that the texts I have discussed in detail throughout this book were selected for their intrinsic interest, and do not therefore cumulatively form a balanced and representative corpus of data. This means that my claims about the pervasiveness, distribution and frequency of particular phenomena (e.g. the use of creative metaphorical expressions, or of topic-triggered metaphors) can only be tentative, and require further and more systematic corpus-based investigations.

Similarly, the scope of the findings in the present analysis is limited and does not allow for generalizing across a wider range of texts that go beyond the articles used in the present newspaper corpus. Focusing on such “interesting” examples may skew people’s perception about the frequency and the kind of metaphorical language in news texts. While the database accumulated in this project cannot give a precise picture of the frequency of phenomena such as those listed in the quote by Semino (2008) above, it has the potential to be refined by introducing codes for much investigated phenomena that are usually not quantified. Such further annotation would improve the current knowledge of the proportion of metaphor forms in newspapers. It may include the annotation of topic-triggered metaphors, clusters of semantically related metaphorical expressions, or codes for deliberate metaphor use. A prerequisite for coding deliberate metaphor, however, is the ability to reliably identify it. While progress has been made in the development of tools for linguistic and conceptual metaphor identification (e.g. MIV, MIP, MIPVU, the 5-step method), a reliable explicit procedure that can identify *deliberately* used metaphorical expressions is still lacking. As a first step, I collected criteria that an analyst can use to detect deliberate metaphor in natural language data. Necessary future steps include the incorporation of these criteria in a complete and explicit conceptual framework for deliberate metaphor, application to a substantial amount of data and the demonstration of inter-coder reliability. Whether expressions identified as deliberately metaphorical are indeed experienced as such by the newspaper reader should be tested in future experimental research.

Cognitive linguistics has emphasized the conceptual function of metaphors and has distanced itself from earlier work that confined the role of metaphor to that of ornament. My analysis of deliberate metaphor suggests that we need to put rhetoric back into the picture. The discourse-based perspective taken here shows that metaphor in real language use is best described in terms of a multidimensional model (e.g. Steen, 2008) that, while acknowledging the conceptual nature of metaphor, equally encompasses its

linguistic realizations as well as its communicative functions. Metaphor rarely has just one function but may serve conceptual, textual and communicative functions at the same time.

Metaphor in thought

Even though the cognitive linguistic approach to metaphor emphasizes its conceptual nature, there is surprisingly little concern about the ways conceptual metaphors are formulated, why they are formulated the way they are and how concepts are selected (or not selected) to be part of a mapping (e.g. Gibbs, 2006; Haser, 2005; Jackendoff & Aaron, 1991; Murphy, 1996, 1997; Verwaeke & Green, 1997; Verwaeke & Kennedy, 1996). One clear challenge in working with concepts instead of words or expressions is that they are more difficult to demarcate. For example, identifying metaphorical language on the basis of cross-domain mappings is less transparent than examining contextual and basic senses in a dictionary. Obviously, it would be helpful to find a way to constrain this fuzziness in identifying metaphors at a conceptual level. I checked whether this could be done with the semantic annotation tool Wmatrix (Rayson, 2008).

Starting from the assumption that semantic fields roughly correspond to conceptual domains (Hardie et al., 2007), I investigated the usability of the tool for the identification of metaphorical language use in news texts on the basis of semantic fields. I checked whether comparing and contrasting semantic fields ascribed to a lexical unit by the tool can reveal its metaphorical status. This practice corresponds to comparing and contrasting contextual and basic senses on a purely linguistic level and, as my results have shown, the semantic analysis largely parallels decisions made when applying the MIPVU method.

I have also tested whether it is possible to determine metaphorical usage of expressions by checking whether the semantic tags of a metaphorically used word are distinct from those assigned to lexical units around it (Cameron, 2008, p. 198). My focus lay on the identification of metaphorically used verbs. I established the semantic frame of the verb and subsequently checked whether the frame elements were semantically coherent with the frame descriptions. If they were not, this pointed to metaphorical use of the verb.

While these results suggest that metaphor identification on a conceptual level is possible, the current version of the Wmatrix program, which was not designed with metaphor research in mind, can only be applied with restrictions. Limited usability is due to:

- errors in assigning contextually appropriate semantic field labels

- occasional inaccurate reflection of contextual senses
- vague or too broadly defined semantic field categories
- exclusion of prepositions (which are frequently metaphorically used) from semantic tagging
- at times undesirable large units of analysis
- tagger sensitivity to word class only for the first tag in a tagset

Wmatrix can produce a list of semantic fields that reflect the topic of the text. I have also shown that metaphorically used expressions can be found via identification of source domain candidates within that list. This approach resembles the efforts of analysts starting out from a conceptual metaphor and then trying to find corresponding linguistic expressions (e.g. Chilton, 1996; Koller, 2004; Musolff, 2004). Likely candidates were fields that stood out as alien against fields describing the topic of the text (which constitute the majority) or those with concrete labels. Once candidates were established, I searched for linguistic expressions by checking concordances for those semantic fields. The success of this approach depends on the kinds of text subjected to analysis. It works for texts with extended mappings or direct metaphor for which the domain shift occurs across a longer stretch of text. When metaphorical expressions do not share semantic fields with other metaphorical expressions in a text, however, they likely do not stand out from the list of semantic fields describing the topic of the text. A top-down semantic field analysis cannot catch all fields that may act as source domains or all metaphorically used expressions that there are.

Some adaptations to accommodate metaphor analysis have already been introduced to Wmatrix (Hardie et al., 2007). The analyses I have presented are promising and point to the potential for further development of Wmatrix for metaphor identification purposes. Possible adaptations include more fine-grained descriptions of semantic fields that make distinctions between concrete and abstract domains, adjustment of the semantic tagger such that it only assigns tags that are relevant to the word class of the unit in question, simple ways to globally adjust the size of the units of analysis, and assignment of semantic tags to prepositions so that they can also be included in an analysis. Further adaptation of the tool for the needs of the metaphor researcher may benefit from joining forces with efforts on developing automatic metaphor identification tools (e.g. Berber Sardinha, 2008, 2009; Mason, 2004).

While the Wmatrix analysis operates on a conceptual level, it does not provide details about cross-domain mappings. It identifies semantic fields that may act as source and target domains, but does not specify any other concepts

that may be involved in a mapping. Describing conceptual structures that may underlie metaphorical expressions is not a straightforward task. Conceptual metaphor theory aims at formulating mappings that reflect conceptual connections of human thought at large and has derived those descriptions from constructed examples presented out of larger context. However, the conceptual metaphors that have been proposed in the literature may not best describe every metaphorical expression encountered in actual discourse (see also Cameron, 2008; Semino, 2008). Linguistic metaphors are also not always obviously related to just one conceptual metaphor but could be described by multiple alternative mappings. For example, one pattern of metaphorical language employed by journalists is the clustering of semantically related metaphorically used words such as *winning*, *battle* and *defence* in a business context. There is no simple answer as to whether, for example, WAR, SPORTS, or GAME is the most appropriate source domain (see Ritchie, 2003).

I have emphasized throughout this thesis that, while identification of linguistic metaphor has become more systematic and transparent through the development of metaphor identification procedures such as MIV, MIP, and MIPVU, researchers do not commonly make explicit how they actually derived conceptual mappings from linguistic metaphors. I placed the identification of conceptual mappings underlying metaphorical expressions in news discourse on firmer footing by employing and further developing an existing method for deriving conceptual structures from linguistic metaphors. I used the 5-step method (Steen, 1999, 2009), a bottom-up approach, for identifying source and target domains as well as concepts involved in a mapping. It starts out with metaphorical expressions and exposes their underlying conceptual structure step by step. While the method is an attempt to constrain the identification process as much as possible, analyst intuition still plays a major role (see Semino et al., 2004). This undermines part of its purpose. I identified the following *challenges*:

- there are likely multiple intuitively plausible source domain concepts which may be mapped onto multiple intuitively plausible target concepts
- there are likely multiple intuitively plausible labels for source and target domains
- source and target domain labels can be formulated at various levels of abstraction and the analyst may not be aware of the level at which he or she is operating

While similar points have been raised in Semino et al. (2004), I suggested tools to alleviate those issues. I showed that the labeling of domains can be

constrained by relying on sense descriptions in a dictionary. There may still be variation due to the kind of reference tools an analyst chooses to use, but the options become more restricted. The clear advantage is that the choices are motivated and can be reproduced by other analysts. In order to navigate between different levels of abstraction, I suggested using the hypernym function of the lexical database Wordnet. Employing these tools raises awareness of alternative options for both domain labeling and concepts that may be mapped and makes the process transparent and repeatable.

My bottom-up approach to the underlying conceptual structure of the metaphorically used words *battle*, *winning* and *defence* in a business news article has revealed that the much cited conceptual metaphor BUSINESS IS WAR does not best describe the conceptual structure of that metaphorical pattern in (at least) one actual news article. Instead, I have shown that it is best captured by the more general BUSINESS IS PHYSICAL CONFLICT mapping instead of the traditional BUSINESS IS WAR mapping. This result fully agrees with Semino's (2005) findings in a corpus study of aggression-related metaphors for communication in newspaper writing. A more general mapping of ANTAGONISTIC COMMUNICATION IS PHYSICAL AGGRESSION was a better fit to her data than the traditional conceptual metaphor ARGUMENT IS WAR. These findings call for further research that check how accurately conceptual metaphors can describe metaphorical language use in actual discourse.

I compared and contrasted bottom-up and top-down approaches to investigate whether or not the two approaches lead to the same conceptual structure of selected linguistic expressions. In order to oppose the two analytical routes, I adapted the 5-step method such that it can capture the different analytical processes involved in inductive versus deductive approaches. Whereas a bottom-up approach first determines concepts that are involved in the mapping and only then formulates the mapping, a top-down approach starts out with a presumed mapping and then selects concepts that are consistent with that mapping. Results of the two approaches differ in both the cross-domain mapping that is formulated as well as the kind of concepts that are determined to be part of the mapping.

While the 5-step method is useful in sharpening the analyst's eye for alternative options, its application has practical limitations. It would be desirable to apply the method to whole texts in order to reveal their underlying conceptual structures on the basis of a transparent procedure, instead of assigning conceptual mappings based on intuition. Following through all the steps is, however, an extremely time-consuming task. The method can therefore only be feasibly applied to a small number of examples.

The underlying cross-domain mappings I revealed for *winning*, *battle* and *defence* are structures that may or may not be activated by readers. Of course the mappings only have real significance if they are in fact activated, at least sometimes or in some conditions. Informative though it is, symbolic analysis of metaphorical mappings remains a thought exercise if people's responses to metaphorical language use are not tested and found to (sometimes) rely on mappings. In order to investigate whether people indeed perform cross-domain mappings, observational or experimental research must complement cognitive-linguistic analysis. I have addressed this question in an experiment for which I summarize the results further below. I also suggest further behavioral research: my bottom-up analysis arrived at mappings on a more general level, whereas the top-down analysis arrived at concepts specific to WAR. Determining at which level people process metaphorical mappings requires experimental testing (Cienki, 2008). The current analysis can form the starting point for the design of experimental material that is well grounded in symbolic analysis.

Metaphor in behavior

My experimental work was concerned with whether or not people reading a text with an underlying extended mapping use metaphorical mappings in the first place. Lakoff and Johnson (1980) assumed that cognitive processing is explained by conceptual metaphors but they never put their claims to the test. Thus, whether people actually think metaphorically has been a major lingering question in psycholinguistic research on metaphor, which has been addressed theoretically and experimentally (Allbritton et al., 1995; Blasko & Brihl, 1997; Coulson, 2008; Gibbs et al., 1997; Glucksberg & McGlone, 1999; Jackendoff & Aaron, 1991; Keysar et al., 2000; McGlone, 1996; Murphy, 1996, 1997; Verwaeke & Kennedy, 1996).

Whether or not people think metaphorically is not only an important theoretical question – it also has practical significance. For example, knowing whether a metaphorically used word on the page is also a metaphor in people's minds may have implications for journalistic writing practice. Insights into the factors that may cause a reader to adopt metaphorical thinking can inspire journalists to make conscious choices for their text design.

Just as the relation between linguistic and conceptual metaphors is not straightforward, the connection between symbolic analysis and people's behavior has proven difficult to establish. For example, while there is research consistent with Lakoff and Johnson's (1980) claim that people establish cross-domain mappings even when processing conventional metaphorical

expressions (e.g. Thibodeau & Durgin, 2008), other researchers argue that recourse to a source domain is only necessary for novel metaphorically used words (e.g. Keysar et al., 2000). The stimulus materials employed in many experiments that test metaphor processing were not only far from the language use a person would encounter in real life, they also paid insufficient attention to other potentially influencing variables. Some such influencing factors are whether the underlying metaphor is signaled or not and the number of metaphorical expressions in a reading passage.

I constructed an experiment to address these shortcomings. I used a more believable text than the reading passages commonly employed, carefully manipulated both signaling and conventionality and kept the number of metaphorical items consistent across conditions. I found that signaling and the level of conventionality of metaphorical expressions have an impact on peoples' mental models of a newspaper text built around an extended racing metaphor. A gross interpretation of the results suggests that people tend to integrate metaphorical schemas in their textual representation when they are encouraged to do so – for example, through a simile that points out the mapping or through the use of novel metaphorical expressions. When people recalled the test passage, they used more metaphorical expressions consistent with the underlying metaphor when the metaphorical expressions were novel. They also used a larger number when the mapping was signaled. This suggests parallels to Bowdle and Gentner's (2005) Career of Metaphor Theory, which holds that conventionalized metaphors are not processed by comparison unless they are signaled. The results, however, are masked by a complex interaction with other variables. Results are impacted by the elapsed time since subjects were tested (immediately after reading the text or after two days) and by whether we count expressions subjects remembered from the stimulus text or expressions that are consistent with the underlying metaphor but which they came up with themselves. For such complex interaction of variables it is difficult to deduce fine-grained interpretations. This result should not be seen as discouraging, however. Instead, it makes an important contribution: it points out factors that may influence the results and their interpretation. The insights gained from this experiment therefore help to improve the design of future experimental materials. For example, knowing that signaling matters, future experiments might control for signaling without varying it, thereby simplifying analysis without loss of validity.

As a cautionary note, the results of this recall study and findings of reaction times studies (e.g. Boronat, 1990; Keysar et al., 2000; Thibodeau & Durgin, 2008) cannot be directly compared because the two approaches access

different stages of processing. While reaction time tasks measure on-line processing, recall tasks measure mental representations once comprehension has been completed (Graesser et al., 1997). A metaphorical schema may have already been formed during the reading process, it may have been built during retrieval of the information or it may have been operating at both levels. Even though verbal information that can be accessed during the retrieval process points to ways it has been interpreted on-line (e.g. Barclay et al., 1974; Bower et al., 1979), a recall task cannot directly measure whether or not a conceptual metaphor played a role during on-line comprehension.

My experimental research also has direct implications for the notion of metaphor deliberateness raised in qualitative analysis of selected news texts. Did people who integrated a metaphorical schema into their textual representation do so because they recognized the racing metaphor as a rhetorical device? Does that mean that those who failed to use racing-consistent expressions did not recognize its deliberate use? The findings of the present study call for a more refined picture of extended metaphor and deliberateness than generally found in the literature. The results indicate that it may be essential to distinguish between extended mappings consisting of novel versus conventional metaphorical expressions. Novel expressions that are part of an extended mapping are remembered better than conventional ones and generate a larger number of intrusions in delayed recall when coupled with a simile. An alternative explanation of the lower number of racing related terms in the conventional condition than in the novel condition is plausible, however. Readers may well have perceived the conventional metaphorical expressions as deliberate but as less interesting than the novel ones, which may in turn have led to a textual representation that is not strongly based on a racing metaphor. Researching peoples' experience of metaphorical expressions as deliberately or non-deliberately used and as interesting or not interesting would add another piece to the puzzle of cognitive representation of metaphor. Furthermore, one could test to what extent the perception of an expression as deliberately metaphorical is dependent on genre-knowledge. People may be more likely to experience a metaphor as deliberate in fiction than in a newspaper or, in turn, in a news text than in an academic text. This would tie in with memory studies by Zwaan (1994) who found that the situation model is enhanced when people believe they are reading a newspaper report, while they pay more attention to the surface code when they think they are reading a literary text. If readers pay more attention to wording and stylistic devices in a literary reading mode, this may also have an impact on their

perception of degree of deliberateness of metaphorical language use in newspaper articles versus fiction.

There are several other open issues that remain to be addressed. These include at which point in a reading passage a mapping is activated, if at all, and checking whether that activation continues throughout the passage or whether any further schema-consistent expression is processed without recourse to the source domain once the schema has been established. Such research could connect to Cameron's (2003) observation that deliberate metaphor may start a process of conventionalization in discourse. Future research could manipulate the number of metaphorically used words in a text and the amount of space between the expressions to examine their role in discourse cohesion. Testing whether previous knowledge of the source and/or target domain as well as general reading proficiency has an influence on the results are further topics to investigate.

My study focused on the conditions under which people may integrate a racing metaphor into their mental representation of a short news text. It did not look at the quality of their mental representation. This is also potential material for future work. Did people who seemed to make use of the metaphorical schema also remember the text better? Or was the level of recall of people who did not make use of racing related terms just as good? These research questions promise to have impact on text design ranging from journalism through advertising to the design of educational materials.

Final remarks

Though this work is inspired by cognitive linguistics, the data and research methods I have chosen diverge from traditional approaches. Unlike Lakoff and Johnson (1980) who worked with invented examples presented out of larger context, I have studied real language data. Metaphorically used words were not collected based on intuition but with a systematic procedure that has been tested for reliability. While linguistic metaphor identification based on transparent procedures has taken off with the publication of MIP (Pragglejaz Group, 2007), the way researchers arrive at conceptual mappings is largely unclear (Steen, 1999, 2009). I have examined the conceptual structure underlying a selected sample of metaphorical patterns in language. Here too, I have not speculated about what kind of concepts may be mapped and what source and target domains are involved, but formulated mappings based on a transparent protocol. Language use is not uniform and varies across different situations of use. The same holds for metaphorical language, which is part and parcel of everyday language use. While some characteristics of metaphor are

shared across different registers, others are more likely to occur in newspapers specifically. I have identified metaphorical expressions in news texts and have examined their distribution, functions and patterns, but I do not claim that these expressions and patterns are also processed as cross-domain mappings. Testing such claims requires observational or experimental methods. In order to investigate which variables influence whether or not people build their mental representation of a newspaper article on an underlying metaphor, I conducted a recall experiment.

These innovations cover three different planes: metaphor in language, metaphor in thought and metaphor in behavior. On the linguistic level, I was concerned with the identification of metaphorical language and its manifestation in newspapers. On a conceptual level, I identified source and target domains and described conceptual structures of linguistic metaphors. On these two levels I investigated metaphor as a symbolic system. I additionally took a behavioral approach: I experimentally examined the cognitive representation of a selected metaphorical pattern in peoples' minds. This naturally connects various disciplines: cognitive linguistics, sociolinguistics and psycholinguistics. Addressing metaphor in news texts from such disparate directions has led to a better understanding of properties of metaphor in news language in particular and metaphorical language use more generally. These properties include metaphor's frequency of use, its patterns, forms, and functions and how metaphorical patterns in a text may operate in people's minds.

Each approach to metaphor I have taken has required its own set of methods – the MIPVU procedure for identifying metaphorical language use on a linguistic level, the Wmatrix tool for identifying metaphor on a conceptual level, the 5-step method for deriving conceptual mappings, statistical procedures and corpus-linguistic tools for examining frequency and use of metaphorical forms and patterns, and psycholinguistic methods for researching cognitive representation of metaphor. This work not only advances our knowledge of what characterizes news texts in terms of metaphorical language use, but also contributes to the further development of research tools. The MIP procedure as developed by the Pragglejaz Group (2007) has been expanded into the MIPVU protocol, the Wmatrix tool (Rayson, 2008) has been investigated for its applicability of finding metaphor in news texts and suggestions have been made for adaptation to metaphor research, and the 5-step method (Steen, 1999, 2009) for the identification of conceptual mappings has been further refined.

On a concluding note, I perceive the major contribution of this work to be a stage-setting one. I have collected data and demonstrated methodology that allows metaphor research to make the step from qualitative to quantitative analysis and to build connections between symbolic analysis and experimental testing of the workings of metaphor in people's minds. This work opens pathways to many new avenues of research. As such it represents a beginning rather than an end. There is much yet to be done.

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Summary

Metaphor in newspapers

Although metaphor is commonly associated with literature and rhetoric, it is in fact part and parcel of everyday language use. It is a window on the way we think and on how language is structured. For example, when someone says “I devoured this book,” they did not actually eat the book, of course – they simply read it with a lot of enthusiasm and interest. *Devoured* in this context is metaphorically used: the abstract concept of IDEAS is structured in terms of another, more concrete domain of thought, namely FOOD. The linguistic metaphor *devoured* is a realization of the conceptual metaphor IDEAS ARE FOOD.

This shift in how we conceive of metaphor – not as a specialized poetic or rhetorical device but as an essential feature of language – has created a whole new field of research within cognitive linguistics and has sparked theoretical discussion as well as experimental studies. However, these studies have focused mainly on artificially constructed examples devoid of a broader context. In recent years there has been growing interest in studying metaphor as it occurs in authentic discourse. This is because only real language data can reveal how we actually use and understand metaphorical language and what its functions may be.

Journalistic writing has been a welcome source of natural language data for metaphor research. The popularity of newspaper texts for metaphor research would seem to suggest that news is a very metaphorical register. However, most studies on metaphor in news have been small-scale or restricted in their focus, investigating only a small set of linguistic or conceptual metaphors. Progress in the field has been hampered by the lack of large-scale quantitative studies and the absence of a transparent, systematic method that identifies *all* metaphorical language and not just a specific set. For this reason, it is actually unknown how common metaphorical language in news texts really is, what forms of metaphors are most typical and how their frequency and use compares to those in other registers.

This dissertation addresses these shortcomings. In collaboration with other researchers I have built a database of about 190,000 words of natural language covering four broad registers from a sub-corpus of the British National Corpus (news texts, academic texts, fiction and conversation). The corpus was coded for metaphorical language using an existing method for metaphor identification. During the annotation process the method was

refined and improved, resulting in a detailed protocol for identifying metaphor in discourse. Its application to news texts is particularly straightforward and reliable.

In order to make the description of metaphor use in newspapers more meaningful – how common it is, what types and forms of metaphors are used, how metaphor is distributed across word classes and what its functions are – I compared and contrasted the news register to the other registers in our database in both qualitative and quantitative terms. Since the data in newspaper texts were collected with the same method as the data in the other three registers and capture all metaphor-related language, I created a register profile of metaphor for newspaper texts with a degree of validity that has not been achieved before. This is a unique contribution to metaphor variation research because it employs both a transparent method of metaphor identification and includes all lexical units regardless of source domain.

Quantitative analysis of the corpus has revealed that news texts contain a larger proportion of metaphorically used words than fiction and conversation but a smaller proportion than academic texts. The picture is more complex than that, however, because different registers exhibit different distributions of word classes, which is connected to their diverging communicative functions. I found that the frequency of metaphors in a certain word class has to be interpreted in relation to the importance of that word class in a register. This suggests that whenever communicative functions differ, metaphorical language use will differ as well, but I also found that this is not necessarily in ways suggested by the usage of the general word classes. I linked these findings to situational characteristics in which news texts are embedded. An unexpectedly frequent use of metaphorical verbs, for example, can in part be attributed to the use of personification, which helps to communicate a message efficiently within restricted space.

While quantitative analysis can show general trends of (non)metaphorical language use, it does not tell us much about detailed functions in specific discourse contexts. I therefore conducted qualitative discourse-based analysis, drawing further connections to characteristics of news texts by analyzing why particular metaphorical expressions occur in a particular text, context, form and pattern. Not every news article is full of creative language play and extended metaphors, nor does every journalist use striking novel metaphors; often the metaphors are simply a convenient way to express an idea.

Whether or not a text seems metaphorical to the newspaper reader is likely influenced by whether or not metaphors are deliberately chosen by the journalist and experienced as such by the reader. Deliberate metaphors in news

articles can be conventional or novel and may or may not be signaled. I have suggested that future research needs to quantify deliberate metaphor use and have proposed a protocol to do this. Metaphorical language use in news writing also displays different functions that can be related to the broader situational context in which news texts are embedded. It both enhances textual cohesion and fulfills conceptual functions, because metaphors help convey complex messages that are immediately clear and accessible to non-expert readers. In addition, journalists make use of metaphorical language for communicative purposes – to entertain, persuade, or to grab readers' attention and interest.

My work goes beyond corpus and discourse analysis. I have also conducted an experiment to address an important theoretical distinction that has practical consequences. In the past, studies of metaphor have often failed to account for the possibility that a metaphor, as identified in a text, is not necessarily a metaphor in people's minds. For example, when writing about economic competition journalists will often use movement metaphors like *accelerating* economy. Does this mean they or the news readers actually think of cars or racing? This may seem a subtle distinction, but it goes to the heart of whether or not people think metaphorically – and consequently to the applicability of metaphor research in general. I have conducted an experiment to investigate under which conditions people are most likely to build their textual representations of a newspaper article on a metaphorical schema. By combining insights from on-line and memory studies looking at whether or not people make use of metaphorical mappings, and by probing signaling and conventionality, which have been ignored or conflated in previous studies, my recall study investigated the role of extended metaphors in text representation. This pattern of metaphor use is held to be typical of newspaper writing. I manipulated the degree of conventionality of metaphorical expressions as well as signaling of an extended auto racing mapping in a business news article on economic competition in a more believable text than those employed in earlier studies. A gross interpretation of recall protocols shows that people tend to integrate metaphorical schemas in their textual representation when they read a simile and/or novel metaphorical expressions. However, these results are masked by a complex interaction with yet other variables. Important considerations include time of recall (immediate or delayed) and whether or not we only count items recalled from the test passage or also consider items that were not in the passage but that are consistent with the underlying metaphor. This is an important finding as it demonstrates the need to take these considerations into account in future experiments.

Metaphorically used lexical units that are potentially realized as cross-domain mappings in people's minds can be identified using the metaphor identification protocol described in this thesis. Determining which domains are involved in the mapping is less straightforward. Cognitive linguistics has shown surprisingly little concern about the ways in which conceptual metaphors are formulated. I have placed the process on firmer footing by further developing Steen's 5-step method for deriving conceptual mappings from linguistic metaphors by introducing dictionaries and the lexical database Wordnet as tools to motivate and further constrain the process. My work therefore not only advances our knowledge about metaphor in news texts but also makes new contributions to method development. Besides refining the 5-step method, I also investigated the usability of the semantic annotation tool Wmatrix for the identification of linguistic metaphors on a conceptual level. Results suggest that, while metaphor identification through semantic fields is possible, the tool can only be used with certain restrictions, which I have identified. Wmatrix was not initially designed for metaphor analysis, and I suggested adaptations to accommodate metaphor researcher's needs.

Samenvatting

Metaforen in kranten

Hoewel metaforen gewoonlijk geassocieerd worden met literatuur en retorica, zijn ze in werkelijkheid een essentieel onderdeel van alledaags taalgebruik. Metaforen reflecteren de manier waarop we denken en de manier waarop taal is gestructureerd. Als iemand bijvoorbeeld zegt: “Ik heb dit boek verslonden”, dan hebben ze het boek uiteraard niet opgegeten. Het boek is dan simpelweg met veel enthousiasme en interesse gelezen. *Verslonden* is in deze context metaforisch gebruikt: het abstracte concept van IDEE is vormgegeven in termen van een ander, concreter domein, namelijk VOEDSEL. De talige metafoor *verslonden* is een realisatie van de conceptuele metafoor IDEEËN ZIJN VOEDSEL.

De laatste dertig jaar heeft zich een verschuiving voorgedaan in de manier waarop wij metaforen begrijpen – niet als een bijzonder poëtisch of retorisch middel, maar als een essentieel onderdeel van taal. Deze verschuiving heeft een heel nieuw onderzoeksterrein binnen de cognitieve linguïstiek teweeg gebracht, waarop in theoretische discussies en experimentele studies is gereageerd. Deze studies concentreren zich vooral op kunstmatig geconstrueerde voorbeelden zonder inachtneming van een bredere context. De afgelopen jaren is de belangstelling voor metaforenonderzoek met natuurlijk taalgebruik toegenomen. De reden hiervoor is dat alleen authentieke taaldata kunnen onthullen hoe wij metaforisch taalgebruik eigenlijk inzetten en begrijpen en wat de functies ervan zouden kunnen zijn.

Journalistieke teksten zijn een welkome bron van natuurlijk materiaal geweest voor metaforenonderzoek. De populariteit van het gebruik van nieuwsteksten voor metaforenonderzoek lijkt te suggereren dat nieuws een metaforisch register is. Maar de meeste studies naar metaforen in het nieuws zijn kleinschalig of hebben een beperkte focus, waarbij enkel een kleine verzameling linguïstische of conceptuele metaforen wordt onderzocht. Voortgang in dit onderzoeksveld wordt belemmerd door een gebrek aan grootschalige, kwantitatieve studies en de afwezigheid van een transparante, systematische methode die *al* het metaforisch taalgebruik kan identificeren, en niet slechts een specifieke verzameling. Om deze redenen weten we eigenlijk niet echt hoe gebruikelijk metaforisch taalgebruik in nieuwsteksten in werkelijkheid is, welke vormen van metaforen het meest typerend zijn, en hoe de frequentie en het gebruik van metaforen in vergelijking staat tot metaforen in andere registers.

Deze dissertatie probeert aan deze tekortkomingen iets te doen. In samenwerking met andere onderzoekers heb ik een database van ongeveer 190.000 woorden gebouwd van authentiek taalgebruik. Deze database omvat vier registers van een subcorpus van het 'Britisch National Corpus' (nieuwsteksten, academische teksten, fictie en conversatie). Het corpus werd gecodeerd voor metaforisch taalgebruik met behulp van een bestaande methode voor metafooridentificatie. Tijdens de annotatieperiode werd de methode verfijnd en verbeterd, wat resulteerde in een gedetailleerd protocol voor het identificeren van metaforen in teksten en gesprekken. De toepassing op nieuwsteksten is opvallend onproblematisch en betrouwbaar.

Om de beschrijving van metafoorgebruik in kranten zinvoller te maken – hoe gebruikelijk metafoorgebruik is, welke typen en vormen metaforen gebruikt worden, hoe metaforen verspreid zijn over woordsoorten en wat hun functies zijn – heb ik het nieuwsregister vergeleken met de andere registers in onze database op zowel een kwantitatieve als kwalitatieve manier. Aangezien de data in de nieuwsteksten met dezelfde methode zijn verzameld als de data in de andere drie registers en deze data al het metafoorerelateerde taalgebruik omvatten, heb ik een registerprofiel voor metafoorisch voor nieuwsteksten gecreëerd met een graad van validiteit die nog niet eerder is bereikt. Dit profiel is een unieke bijdrage aan het onderzoek naar variatie in metafoorgebruik, omdat een transparante methode voor metafooridentificatie is gebruikt en omdat alle lexicale eenheden zijn geanalyseerd.

Kwantitatieve analyse van het corpus heeft aan het licht gebracht dat nieuwsteksten een groter aandeel metaforische woorden bevatten dan fictie en conversatie, maar kleiner dan academische teksten. Maar het volledige beeld is complexer omdat de registers sowieso andere distributies van woordsoorten vertonen, die gerelateerd zijn aan hun uiteenlopende communicatieve functies. Ik heb laten zien dat de frequentie van metaforen in een specifieke woordsoort geïnterpreteerd moet worden in samenhang met het belang van die betreffende woordsoort in een register. Dit betekent dat wanneer communicatieve functies verschillen, metaforisch taalgebruik ook zou moeten verschillen. Maar ik laat ook zien dat dit niet noodzakelijkerwijs helemaal op de manier gebeurt zoals die wordt gesuggereerd door het gebruik van de algemene woordsoort. Ik heb deze bevindingen verbonden aan de kenmerken van de situaties waarin nieuwsteksten zijn ingebed. Een onverwacht vaakvoorkomend gebruik van metaforische werkwoorden kan bijvoorbeeld deels worden toegeschreven aan het gebruik van personificatie, wat geïnterpreteerd kan worden als een middel om een boodschap efficiënt te communiceren binnen beperkte ruimte.

Kwantitatieve analyse kan een algemene trend laten zien van (niet) metaforisch taalgebruik, maar vertelt ons weinig over gedetailleerde functies in specifieke taalgebruikssituaties. Om die reden heb ik een ook kwalitatieve analyse uitgevoerd. Door te analyseren waarom specifieke metaforische uitdrukkingen in een specifieke tekst, context, vorm of patroon voorkomen, heb ik verdere verbanden met de kenmerken van nieuwsteksten gevonden. Niet ieder nieuwsartikel staat vol met creatief taalgebruik en uitgebreide metaforen, en niet iedere journalist gebruikt opmerkelijke nieuwe metaforen; vaak zijn metaforen simpelweg een handige manier om een idee uit te drukken.

Of een tekst er al dan niet metaforisch uitziet voor de krantenlezer wordt waarschijnlijk beïnvloed door de mate van opzet waarmee de journalist metaforen in zijn artikel gebruikt. Doet hij dit opzettelijk, dan is de kans groter dat de lezer de tekst als zijnde metaforisch ervaart. Opzettelijke metaforen in nieuwsartikelen kunnen zowel conventioneel als nieuw zijn en kunnen wel of niet gesignaleerd worden. Ik heb aangegeven dat toekomstig onderzoek opzettelijke metaforen zou moeten kwantificeren en ik heb een protocol voorgesteld om dit te kunnen doen. De verschillende functies die gerelateerd kunnen worden aan de bredere context waarin nieuwsteksten zijn ingebed omvatten de vergroting van tekstuele cohesie en de realisatie van conceptuele functies, omdat metaforen complexe boodschappen helpen over te brengen die onmiddellijk duidelijk en toegankelijk zijn voor de algemene lezer. Daarnaast maken journalisten gebruik van metaforisch taalgebruik voor communicatieve doelen – voor vermaak, om te overtuigen, of om de aandacht en belangstelling van lezers te trekken.

Mijn werk gaat verder dan corpus- en discourse analyse. Ik heb ook een experiment uitgevoerd om een belangrijk theoretisch verschil aan de orde te stellen dat ook praktische consequenties heeft. In het verleden zijn metafoorstudies vaak voorbijgegaan aan de mogelijkheid dat een metafoor, zoals die wordt geïdentificeerd in een tekst, niet noodzakelijkerwijs een metafoor in de verwerkingsprocessen bij het lezen is. Als er bijvoorbeeld geschreven wordt over economische competitie, dan gebruiken journalisten vaak metaforen die een beweging uitdrukken, zoals het *versnellen* van de economie. Betekent dit dat de journalisten of de lezers werkelijk denken aan auto's of autoracen? Dit lijkt misschien een subtiel onderscheid, maar is essentieel voor de vraag of mensen wel of niet metaforisch denken – en daarom ook naar de mogelijkheid van toepassing van metafooronderzoek in het algemeen. Ik heb een experiment uitgevoerd om te onderzoeken onder welke condities mensen hun tekstuele representaties van een krantenartikel bouwen aan de hand van een metaforisch concept. Ik heb inzichten van on-

line tekstverwerkingsstudies gecombineerd met die van geheugenstudies die onderzoeken of mensen al dan niet gebruik maken van niet letterlijke projecties (metaforische mappings) en toegepast op een onderzoek naar de rol van metafoorsignalering en -conventionaliteit, variabelen die in eerdere studies zijn genegeerd of samengevoegd. Met een herinneringstaak heb ik het effect daarvan op de cognitieve representatie van een uitgebreide metafoor onderzocht – een patroon van metafoorgebruik waarvan verondersteld wordt dat het typisch bij nieuwsteksten hoort. Ik heb zowel de mate van conventionaliteit van metaforische uitdrukkingen als het signaleren van een uitgebreide autorace mapping gemanipuleerd in een economisch nieuwsbericht over economische concurrentie. De tekst was natuurlijker dan de teksten die in eerdere studies zijn gebruikt, want gebaseerd op een authentieke passage. Een interpretatie van de recall studies laat in grote lijnen zien dat lezers geneigd zijn tot het integreren van metaforische schema's in hun tekstuele representatie wanneer ze een vergelijking en/of nieuwe metaforische uitdrukking lezen. Maar deze resultaten worden gemaskeerd door een complexe interactie met andere variabelen. Belangrijke overwegingen hierbij zijn de tijd van herinnering (direct na het lezen of enige tijd daarna) en of we enkel de herinneringsitems telden die ook daadwerkelijk in de tekstpassage stonden of dat we ook de items meenamen die weliswaar niet in de tekstpassage stonden, maar wel consistent waren met de onderliggende metafoor. Dit is een belangrijke bevinding, omdat zij aantoont dat het belangrijk is om deze overwegingen mee te nemen bij het ontwerp van een vervolgonderzoek.

Metaforisch gebruikte lexicale eenheden die zouden kunnen worden gerepresenteerd als cross-domain mappings in de mentale tekstrepresentaties van lezers, kunnen worden geïdentificeerd door het metafooridentificatie-protocol te gebruiken dat beschreven wordt in deze dissertatie. Bepalen welke domeinen betrokken zijn bij de mapping is minder eenvoudig. De cognitieve linguïstiek besteedt opmerkelijk weinig aandacht aan de manieren waarop conceptuele metaforen worden vastgesteld. Ik heb dit proces een steviger fundament gegeven door Steens vijfstappenmethode voor het afleiden van conceptuele mappings uit talige metaforen verder te ontwikkelen door woordenboeken en de lexicale database Wordnet als instrumenten te gebruiken om de analyse verder in te perken. Daarom vergroot mijn werk niet alleen onze kennis over metaforen in nieuwsteksten, maar levert het ook een bijdrage aan de ontwikkeling van onderzoeksmethoden op dit gebied. Naast het verfijnen van de vijfstappenmethode heb ik ook de bruikbaarheid onderzocht van het semantische annotatie-instrument Wmatrix voor het identificeren van talige metaforen op een conceptueel niveau. De resultaten suggereren dat het

wel mogelijk is om metaforen te identificeren via semantische velden, maar dat het instrument alleen gebruikt kan worden met een aantal restricties. Wmatrix is aanvankelijk niet ontworpen voor het analyseren van metaforen, en daarom suggereer ik dan ook aanpassingen aan het instrument om tegemoet te komen aan de behoeften van onderzoekers op het gebied van metaforen.

Curriculum vitae

After receiving a teaching degree, Tina Krennmayr studied English and American Studies, Applied Linguistics and Communication Studies at the University of Salzburg. Following her MA she was employed as a visiting lecturer in the United States in Duke University's English Department (Linguistics program) as well as the German Department. She started her PhD project at VU University Amsterdam in 2006 and currently works there as an assistant professor.