THE VALUE OF DELIBERATE METAPHOR

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THE VALUE OF DELIBERATE METAPHOR

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Gudrun Reijnierse Amsterdam, July 2017

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Author contributions

Chapter 1

W. Gudrun Reijnierse

> Reijnierse wrote the first version of the text. Burgers, Krennmayr, and Steen acted as supervisors, providing valuable feedback on earlier versions of the text. Based on this feedback, Reijnierse rewrote and revised the text into its final form.

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Chapter 1

Introduction

1.1 Deliberate metaphor: a first example

During the financial crisis of 2007–2008, Dutch Secretary of Finance Wouter Bos nationalised one of the largest banks of the Netherlands, ABN AMRO bank, at a cost of EUR 17 billion. However, Secretary Bos did not ask permission from the Dutch House of Representatives in advance to spend such a large amount of tax money on a commercial bank. Some years later, a parliamentary inquiry was set up to investigate the process leading up to the nationalisation of the bank. This inquiry concluded that Bos should have informed the House of Representatives sooner and in more detail about his decision. One day after the publication of these results, Bos was invited to a late-night talk show, where one of the talk show hosts asked him to account for his decision to not inform the House in time. Bos replied:

(1) When the Fire Brigade is putting out a fire, they also don't hold a meeting first. They will really first put the fire out. And that is what I had to do, as well.[1]

("Pauw & Witteman", 2012)

In (1), Bos describes his position at the time in terms of the position of a Fire Brigade: Just like a Fire Brigade will do what is necessary to stop a fire from burning, Bos decided to spend tax money on ABN AMRO bank to prevent it from going bankrupt. And just like a Fire Brigade will not first extensively weigh up the advantages and disadvantages of the various ways of extinguishing a fire, Bos did not ask the House of Representatives about their opinions as to how to best

[1] The original Dutch text runs as follows: "De brandweer gaat ook niet tijdens het blussen uitgebreid vergaderen. Die gaat écht eerst die brand doven. En dat moest ik ook doen."

resolve the risky situation the bank was in. By describing one thing (the 'target domain'; in this case Bos' way of dealing with the nationalisation of the bank) in terms of something else (the 'source domain'; in this case the work of a Fire Brigade), Bos makes use of metaphor to justify his political actions.

More in particular, by explicitly comparing his work to that of the Fire Brigade, Bos makes use of metaphor *as* metaphor. That is, in (1) metaphor is used as a specific rhetorical device in communication between the former Secretary of Finance and the talk show host, and – indirectly, yet importantly – between the Secretary and the tax payers watching the talk show on television. Bos likely wanted to find (public) support for his decision to nationalise ABN AMRO at such high costs. Yet, for the general audience, it may be difficult to evaluate the political decision to spend EUR 17 billion on a failing financial institution. However, the audience *is* able to evaluate a decision made by the firemen to put out a fire. In fact, it is quite likely that the audience agrees with Bos that firemen should put a fire out quickly. As a result, they may also agree with his decision to rescue the bank without prior permission from the House of Representatives – or at least that may have been Bos' goal when he used the Fire Brigade metaphor.

Now imagine if Bos replied to the question of the talk show host in the following way:

(2) I had to rescue the bank, for otherwise it would have gone bankrupt.

Example (2) also contains a metaphor: the verb 'to rescue'. It describes the target domain of preventing a bank from failing in terms of saving a person from a dangerous situation. In contrast to the metaphor in (1), however, there is no indication that the metaphor in (2) is used *as* a metaphor in the communication between Bos and the host/audience. Rather, the metaphor constitutes the type of language use people typically deploy to talk about preventing businesses from failing. The metaphor in (2) thus does not stand out *as* a metaphor in communication. As a result, its communicative effect may be different from the effect of the explicit metaphor discussed in (1) above.

The distinction between metaphor that is used *as* metaphor between language users ('deliberate metaphor'; Steen, 2008, 2011a, 2015; see Cameron, 2003) and metaphor that does not have such a function ('non-deliberate metaphor'; Steen, 2008, 2011a, 2015) has become one of the central topics in contemporary metaphor theory (e.g., Cameron, 2003; Carston, 2010; Müller, 2008; Steen, 2008, 2011a, 2015; and see, Gola & Ervas, 2016; Xu, Zhang, &

Wu, 2016). It is the result of renewed interest in rhetorically-oriented approaches to metaphor (e.g., Charteris-Black, 2005; Eubanks, 2000; Musolff & Zinken, 2009), which recently emerged after a period during which metaphor was predominantly seen as a matter of language and thought, not of communication (e.g., Lakoff & Johnson, 1980; Ortony, 1993; see Gibbs, 1994, 2011c). Despite the growing interest in the communicative dimension of metaphor, the developing theoretical framework taking this dimension into account is in need of further development. The main objective of this thesis is to contribute to this further development by addressing a number of core issues related to the role of metaphor in communication that form the subject of discussion among metaphor researchers.

To this end, section 1.2 first presents an overview of the recent developments in metaphor studies, with special attention to the three-dimensional model of metaphor in language, thought, and communication (Steen, 2008, 2011a, 2015) that forms the theoretical framework for the analyses in this thesis. Section 1.3 zooms in on three key issues related to this three-dimensional model of metaphor that require further development. This section also introduces the three subgoals that are formulated on the basis of the three key issues and that are addressed in the studies reported in this thesis. Finally, section 1.4 presents an outline of the thesis.

1.2 Current rhetorically-oriented approaches to metaphor

Over the past decades, much metaphor research took place within the framework of Conceptual Metaphor Theory (CMT; Lakoff & Johnson, 1980, 1999). CMT holds that metaphors in language are expressions of underlying metaphorical structures in thought, and that metaphor is a cognitive tool that allows people to think and talk about one thing in terms of another. Research within CMT is typically concerned with conventional, 'inconspicuous' uses of metaphor (such as in Example 2), paying little attention to the special role that metaphor can have in communication (such as in Example 1). However, as was pointed out above, recent years have seen an increase in the number of rhetorically-oriented approaches to metaphor. Specifically, researchers argue that it is necessary to take into account the specific role of metaphor in communication in order to be able to account for the different functions that metaphor can have in discourse, such as to explain, to elucidate, to exemplify, to

clarify, and so on (e.g., Cameron, 2003; Goatly, 1997; Müller, 2008; Semino, 2008; Steen, 2008, 2011a).

Because CMT is concerned with the linguistic and conceptual properties of metaphor – focusing on its automatic use – the fact that it can also be used *as* metaphor to fulfil specific functions in communication between language users is not accounted for. To account for the communicative function of metaphor, researchers from various subdisciplines in linguistics have suggested that we distinguish between the types of metaphor use illustrated in (1) versus (2) above, including in pragmatics (e.g., Carston, 2010), English as a Lingua Franca (e.g., MacArthur, 2016; Nacey, 2013), (discourse) dynamic approaches to metaphor (e.g., Cameron, 2003; Müller, 2008), and discourse analysis (e.g., Charteris-Black & Musolff, 2003; Semino, 2008; Steen, 2008, 2011a, 2015). All these proposals draw attention to the 'special use' of some, but not other, metaphors in communication.

Taking a discourse-analytical approach, Cameron (2003; see also Cameron, 1999) argues that, in addition to linguistic and conceptual aspects, discourse context needs to be taken into account when studying metaphor. Her analysis of classroom discourse led to the discovery of two different types of metaphor use: those that are used "for a particular purpose on a particular occasion" ('deliberate metaphors', p. 101), and those that "are part of the participants' shared language resources for talking about [a] particular topic" ('conventionalized metaphors', p. 101). In particular, Cameron points out how deliberate metaphor use dynamically develops in discourse, for instance in the explanation (by the teacher) and further understanding (by the students) of a difficult concept. This dynamic aspect of Cameron's approach to deliberate metaphor resembles Müller's (2008) dynamic view on metaphor. In Müller's view, language users can point out, in communication, the metaphorical status of certain metaphors through "activation indicators" (2008, p. 197) such as elaboration or the manifestation of metaphor across different modalities (e.g., speech and gesture, or words and images; see also Ng & Koller, 2013, for multimodal deliberate metaphor).

Like Cameron, Semino (2008) also takes discourse context into account. She proposes to further specify the general cognitive-linguistic question about the *occurrence* of metaphor in language and thought by focusing on the *choice* for a specific metaphor in particular texts. She argues that "to explain the use of metaphor in discourse one needs to consider the range of more specific functions that metaphor can have in communication" (p. 30). According to Semino, attention for the communicative functions of metaphor is particularly

relevant when alternative ways of talking or writing about the same topic are also available, or when metaphors are used creatively. To account for the different functions that metaphor can have in communication, Semino applies Halliday's classification of ideational, interpersonal, and textual functions of language to metaphor (see also Goatly, 1997; Koller, 2003).

The discourse-analytical approach adopted by Charteris-Black and Musolff (2003) is similar to that of Cameron (2003) in the sense that they also suggest that the use of metaphor differs according to the context in which it is used. At the same time, Charteris-Black and Musolff's (2003) approach is similar to Semino's (2008) approach, in the sense that both are concerned with the (rhetorical) functions of metaphor. According to Charteris-Black and Musolff (2003), "[t]he cognitive model [...] needs to be complemented by an account of the pragmatic and rhetorical function of metaphors" (p. 154). In particular, they distinguish between a broad semantic definition of metaphor, and a narrower pragmatic one. The semantic definition of metaphor largely corresponds to the cognitive-linguistic definition of metaphor as describing one thing in terms of something else (Lakoff & Johnson, 1980). This definition is meant to identify a large number of metaphors. The pragmatic definition of metaphor, by contrast, is narrower, because it is concerned with the rhetorical goals that writers may wish to achieve by means of their use of metaphor. Consequently, by applying the pragmatic definition of metaphor, Charteris-Black and Musolff (2003) claim to identify those metaphors that "strike the reader as truly metaphorical" (p. 175).

Similar to what Charteris-Black and Musolff (2003) suggest, Steen (2008, 2011a, 2015) also argues that the cognitive-linguistic model of metaphor needs to be extended. Specifically, he argues that a third dimension needs to be added, namely that of metaphor in communication. The difference between Steen's (2008, 2011a, 2015) approach and that of Charteris-Black and Musolff (2003), however, is that Steen's communicative dimension of metaphor is specifically concerned with the question whether metaphor is used *as* metaphor, while Charteris-Black and Musolff focus on the achievement of rhetorical goals by means of metaphor (see Steen, 2008).

Steen's (2008, 2011a) proposal to add a third dimension to the cognitive-linguistic model of metaphor is based on results from both psycholinguistic experiments as well as from corpus-linguistic analyses. Psycholinguistic research suggests that metaphor processing depends on a metaphor's characteristics. For instance, Bowdle and Gentner (2005; see also Gentner & Bowdle, 2008) found that metaphor is processed by comparison (i.e.,

as metaphor) when it is novel or when it has the form of a simile. When metaphor is conventional, however, they found that it is processed by categorisation or lexical disambiguation. At the same time, corpus-linguistic analyses (Steen, Dorst, Herrmann, Kaal, Krennmayr, & Pasma, 2010b) demonstrate that both simile and novel metaphor are relatively rare in natural discourse. Most manifestations of metaphor are thus conventional, and do not take the form of an explicit comparison.

Relating these corpus-linguistic findings to the findings reported by Bowdle and Gentner (2005), Steen (2008, p. 214) argues that there exists a "paradox of metaphor". This paradox holds that, if only certain metaphors are processed by comparison, and if these are rare in actual language use, then most metaphors in language may not be processed *as* metaphors, but rather via other processes such as categorisation and lexical disambiguation. To solve this paradox, Steen (2008) argues that it is necessary to not only consider metaphor as a matter of language and thought, but also as a matter of communication. In this third dimension of the model of metaphor, "[…] the value of metaphor as a specific means of communication between language users […]" (Steen 2015, p. 2) is central. Under this view, only those metaphors that are used *as* metaphors in the dimension of communication are likely to be processed *as* metaphors (i.e., by comparison).

In the third dimension of metaphor, a distinction is made between 'deliberate' and 'non-deliberate' metaphors. According to Steen (2015), a metaphor is called deliberate "when its structure signals that the addressee has to move away their attention momentarily from the target domain of the utterance or even phrase to the source domain that is evoked by the metaphor-related expression" (p. 68). Specifically, this means that the source domain meaning of a metaphor is part of the situation model of an utterance or text. Conversely, a metaphor is called non-deliberate when the source domain is not part of the situation model of the utterance or text (Steen, 2017).

The introduction of the three-dimensional model of metaphor and the subsequent establishment of Deliberate Metaphor Theory (DMT; Steen, 2015) provoked an intense debate among metaphor researchers (see, for instance, Charteris-Black, 2012; Deignan, 2011; Gibbs, 2011a, 2011b, 2015a, 2015b, Müller, 2011; Steen, 2011a, 2011b, 2013, 2015). This debate is mainly concerned with questions about what it means, exactly, for a metaphor to be 'deliberate', and even about the mere existence of deliberate metaphor. Because DMT is a developing theoretical framework, each of the contributors to the debate interprets DMT in their own ways, formulating their own objections to

one or more aspects of the framework. Some reject DMT because they take 'deliberate' to imply conscious deliberation – something that is very difficult to observe, and that might almost never occur (Gibbs, 2011b, 2015b). Others argue that 'deliberate metaphor' as a category is not needed at all, and that the focus should rather be on 'metaphor activation' or 'transparency' (Müller, 2011; but see Müller, 2016, for an attempt at finding common ground). Although even the strongest opponents now hold that "DMT can possibly make an important contribution to the study of metaphors in communication" (Gibbs, 2015b, p. 73), still no consensus has been reached among the main contributors to the debate about the nature of deliberate metaphor.

At the same time, there is a growing body of empirical research that uses the framework to investigate the use and effects of metaphor in communication (e.g., Beger, 2011, 2016; Krennmayr, Bowdle, Mulder, & Steen, 2014; Nacey, 2013; Ng & Koller, 2013; Pasma, 2011; Perrez & Reuchamps, 2014; Roncero, Almeida, Martin, & de Caro, 2016; Thibodeau, in press). Such empirical studies can provide useful insights for the further development of DMT. However, close inspection of both the theoretical as well as the empirical literature on deliberate metaphor yields three key issues that are currently in need of further clarification. These three issues are presented in detail in the following section, and linked to three subgoals that are formulated in the present thesis to investigate the value of deliberate metaphor in language use.

1.3 Three key issues in deliberate metaphor research

The first key issue in deliberate metaphor research that is in need of further clarification relates to the reliable identification of deliberate metaphor. Much of the criticism levelled against the three-dimensional model of metaphor is concerned with the question to what extent it is possible to determine whether or not language users process metaphors *as* metaphors, or not. This question pertains to an important distinction in DMT, namely that between two complementary ways of studying deliberate versus non-deliberate metaphor – a semiotic one, and a behavioural one (Krennmayr, 2011; Steen, 2008, 2011a, 2015; see also Cameron, 1999; Steen, 2007). The former perspective is concerned with carrying out textual analysis, while the latter is concerned with carrying out research using response-elicitation approaches. It follows from this distinction that semiotic analyses cannot draw conclusions about how language users actually process metaphors (in production, reception, or interaction),

simply because such analyses do not have access to data that allow investigation of such processing.

In the empirical literature on deliberate metaphor, a clear distinction can be made between studies investigating deliberate metaphor based on the analysis of text and transcripts of talk (e.g., Beger, 2011, 2016; Krennmayr, 2011; Nacey, 2013; Ng & Koller, 2013; Pasma, 2011; Perrez & Reuchamps, 2014; Roncero et al., 2016), and studies based on the analysis of response-elicitation approaches (e.g., Gibbs, 2015b; Krennmayr et al., 2014; Thibodeau, in press). However, studies investigating deliberate metaphor on the basis of texts often seem to conflate the two perspectives, making claims about how language users process certain metaphors based on the analysis of texts and transcripts of talk alone, and not on the results of psycholinguistic or psychological research (e.g., Beger, 2016; Ng & Koller, 2013; Perrez & Reuchamps, 2014). Only a few studies (e.g., Krennmayr, 2011; Nacey, 2013; Pasma, 2011) explicitly mention the distinction between the semiotic and behavioural perspectives, pointing out that semiotic analyses cannot be used to draw conclusions about processing. Yet, even in those analyses claims are sometimes made as to the presumed intentions of addressers or the interpretations of addressees. At the same time, studies investigating the effects of deliberate metaphor generally do not create their experimental materials on the basis of insights from semiotic analysis (e.g., Gibbs, 2015b; see Steen, 2015). In both cases, this may yield results with only limited validity regarding the communicative status of metaphor, making it difficult to assess the contribution of these studies to the further development of the framework of DMT.

It is thus important to clearly distinguish between these two approaches. This can be done by establishing an operational definition of deliberate metaphor that is specifically aimed at defining what counts as a deliberate metaphor from a semiotic or behavioural perspective. An operational definition for semiotic analysis can then be used to create an identification procedure for deliberate metaphor in discourse.

Up to now, the various studies that have implemented the distinction between deliberate and non-deliberate metaphor in their analyses of metaphor in communication all deployed their own methods to discriminate between deliberate and non-deliberate metaphor. Many studies use the theoretical definition of deliberate metaphor provided in Steen (2008) as a starting point to identify deliberate metaphors in language use, without providing an operational definition. Other studies use a very narrow operational definition of deliberateness. In their comparison of metaphors and similes on the Internet,

Roncero et al. (2016), for instance, operationalise deliberateness as "the occurrence (frequency and type) of explanations produced following metaphors and similes" (p. 35). Yet other studies make explicit that deliberate metaphor is not systematically operationalised because of the controversial nature of deliberate metaphor (e.g., Deignan, Littlemore, & Semino, 2013; Littlemore, Krennmayr, Turner, & Turner, 2013). This leads to (sometimes subtly) different interpretations, from one study to the next, of what counts as a case of deliberate metaphor. Because a systematic identification procedure is also lacking, it is difficult to assess on the basis of which concrete criteria deliberate metaphors are identified.

A uniform operational definition of deliberate metaphor as well as uniform identification criteria for its identification in language use are thus currently lacking, yielding idiosyncratic views of what counts as a case of deliberate or non-deliberate metaphor. At the same time, the conflation of semiotic and behavioural terminology yields claims about processing that are not substantiated by psychological/psycholinguistic evidence. This, in turn, makes it difficult to compare analyses with each other, and to evaluate theoretical and empirical claims about deliberate metaphor (see, e.g., Steen & Gibbs, 2004). To resolve this issue, the literature calls for the establishment of a clear operational definition as well as a transparent, step-by-step identification procedure for deliberate metaphor (Gibbs, 2015a; Needham-Didsbury, 2014; Steen, 2011a; cf. Krennmayr, 2011; Thibodeau, in press). The first subgoal of this thesis is therefore:

> *Subgoal 1*: to establish an operational definition of deliberate metaphor and to develop a reliable method for the systematic identification of deliberate metaphor in language use.

The second key issue in the further development of DMT is concerned with the description of the manifestation of deliberate metaphor in natural language use. As a result of the lack of a reliable identification method, many studies that investigate the use of deliberate metaphor take a top-down approach to the data (e.g., Beger, 2011; Nacey, 2013; Pasma, 2011; Perrez & Reuchamps, 2014). This typically means that lists of candidates for deliberate metaphor that are mentioned in the literature are used to identify instances of deliberate metaphor in particular texts. These lists contain specific manifestations of metaphor, such as novel metaphors and similes, that are claimed to be deliberate (almost) by

definition (see Krennmayr, 2011; Steen, 2010; Steen, Dorst, Herrmann, Kaal, & Krennmayr, 2010a).

Although searching for such specific manifestations of metaphor in natural language use may yield many relevant cases of deliberate metaphor, taking a top-down approach to deliberate metaphor also has several drawbacks. Firstly, the lists of deliberate metaphor candidates are not composed on the basis of extensive corpus-analytical research investigating the manifestations of deliberate metaphor in language use. The status of these candidates is thus unclear: is it really the case that these manifestations are deliberate by definition? Secondly, only searching for a predetermined list of manifestations of metaphor possibly leads analysts to overlook other cases of deliberate metaphor in their data. In fact, the identification of deliberate metaphors may often be more complicated than to simply look for a set of candidates. Together, these aspects yield a varied view of how deliberate metaphor manifests itself in language use (in terms of frequency, distribution, specific manifestations, and so on). As a consequence of these uncertainties, it is difficult to assess the value of the results of analyses taking a top-down approach to the identification of deliberate metaphor. To resolve these issues regarding the description of the use of deliberate metaphor, the second subgoal of this thesis is:

> *Subgoal 2*: to describe how deliberate metaphor is used in natural discourse based on the systematic analysis of a large number of metaphors.

In this part of the thesis, the VU Amsterdam Metaphor Corpus (VUAMC) is used. This corpus contains a large number of words from four different registers (academic texts, fiction, news texts, and face-to-face conversations). It was previously coded for all metaphor by means of the Metaphor Identification Procedure Vrije Universiteit (MIPVU; Steen et al., 2010b[2]). The identification procedure for potentially deliberate metaphor that is developed under the first subgoal in the current thesis is used to further annotate the VUAMC for deliberate (versus non-deliberate) metaphor. Such systematic identification of deliberate metaphor makes it possible to investigate the use of deliberate metaphor from both a quantitative and a qualitative perspective.

[2] This publication is referred to as Steen et al. (2010b), even though one of the co-authors in Steen et al. (2010b), Pasma, is not a co-author in Steen et al. (2010a).

Quantitative analyses provide insight into the frequency and distribution of deliberate metaphor in language use. Qualitative analyses take a closer look at manifestations of deliberate metaphor to examine the different forms and functions that deliberate metaphor has. At present, suggestions about the distribution and specific manifestations of deliberate metaphor are generally not based on systematic, reliable analyses. In some cases, they are even based on constructed examples. Both types of analyses used as part of the second subgoal in this thesis can provide further, systematic insights into the occurrence as well as the specific manifestations of deliberate metaphor in natural language.

The third and final key issue regarding deliberate metaphor that is currently in need of further clarification, is concerned with the effects of deliberate metaphor on reasoning. In DMT, it is suggested that deliberate metaphors are processed differently from non-deliberate metaphors (e.g., Steen, 2008, 2011a). It is also suggested that, because of this difference in processing, deliberate metaphors may have different communicative effects than non-deliberate metaphors (e.g., Steen, 2008, 2011a, 2015). Given the strict distinction between semiotic and behavioural empirical research introduced above, questions about the psychological reality of deliberate metaphor in individual language users' minds need to be addressed in response-elicitation studies.

To date, only a limited number of studies have investigated to what extent such effects of deliberate metaphor actually occur, and these yielded mixed results (e.g., Gibbs, 2015b; Krennmayr et al., 2014; Thibodeau, in press).[3] In a similar way as was pointed out above for semiotic analyses investigating the manifestation of deliberate metaphor in discourse, it is difficult to compare the results of these experimental studies with each other. That is, studies investigating the effects of deliberate metaphor all formulate hypotheses based on their own interpretation of what DMT does or does not predict. Krennmayr et al. (2014), for instance, investigate when metaphors are part of the mental model that language users establish of a text by investigating to what extent signalled and novel metaphors are recalled better than non-signalled and conventional metaphors. Gibbs (2015a), by contrast, aims to investigate "what people consciously [understand] when encountering conventional metaphors with, and without, various pragmatic signals *presumed* to be markers of

[3] But see Steen (2017) for alternative interpretations (i.e., along the lines of DMT) of experimental evidence that was used to confirm CMT-claims.

deliberate metaphor" (p. 86; emphasis added).

Two aspects of Gibbs' (2015a) study are particularly relevant. Firstly, Gibbs aims to test DMT by investigating questions about consciousness. Besides the fact that this is a particularly difficult thing to do (see also, e.g., Gibbs, 2011c, 2015a), it is also not in line with the way in which DMT conceptualises the notion of deliberateness. DMT does not equate deliberate metaphor with conscious metaphor (see Steen, 2011b, 2013), but rather, as was pointed out above, defines deliberate metaphor in terms of the presence of the source domain in the situation model of an utterance (Steen, 2015, 2017). Secondly, Gibbs' choice for the set of pragmatic markers that are part of his investigation is not based on semiotic, corpus-analytical research, even though he explicitly points out that "[p]urely linguistic, or descriptive, analyses are useful for formulating hypotheses about both speakers and listeners' states of mind" (2015a, p. 86). The fact that such analyses have not been used to formulate hypotheses in Gibbs' experiment raises questions about the (construct) validity of this particular study.[4] Further and more precise research is thus needed to investigate how deliberate metaphor is processed. The third subgoal of this thesis is therefore:

> *Subgoal 3*: to provide an analysis of the effects of deliberate metaphor on reasoning, based on precise and informed hypotheses about deliberate metaphor use.

This part of the thesis serves to illustrate how results from the semiotic analysis of deliberate metaphor can serve as a starting point to test the hypotheses about deliberate metaphor processing as formulated by DMT (see Thibodeau, in press). Specifically, the aim is to take a behavioural approach to deliberate metaphor in order to investigate to what extent deliberate metaphors influence reasoning. Results of this study can provide further insights into the extent to which metaphors that are identified a potentially deliberate by means of semiotic analyses, are psychologically real for actual language users.

[4] See Steen (2015) for a further critical evaluation of Gibbs' (2015a) study, including detailed comments about the way in which the study manipulated the distinction between deliberate and non-deliberate metaphor, the choice of dependent variables, and the lack of statistical power in the experiment.

1.4 Outline of the thesis

This thesis consists of seven chapters. Apart from the current chapter (**Chapter 1**, 'Introduction'), and the final chapter (**Chapter 7**, 'Conclusion'), all chapters are written as independent journal papers. Because chapters 2–6 are written as stand-alone articles, a certain degree of overlap between these chapters – in particular with respect to the theoretical background of Deliberate Metaphor Theory – cannot be avoided.

Together, the five papers contribute to the overall objective of the thesis to further the development of the theoretical framework of deliberate metaphor. The subgoals formulated in the previous section are addressed in the five papers in the following way (see Figure 1.1 for a schematic overview of the thesis).

Chapter 2 addresses the first subgoal to establish a reliable identification procedure for deliberate metaphor in natural language use. This chapter consequently takes a methodological approach to deliberate metaphor. First, an operational definition for deliberate metaphor is established. Then, the Deliberate Metaphor Identification Procedure (DMIP) is introduced. This procedure is applied to a series of example sentences to illustrate its use in practice. Finally, the chapter reports the results of a series of inter-rater reliability tests that confirm the reliability of the procedure.

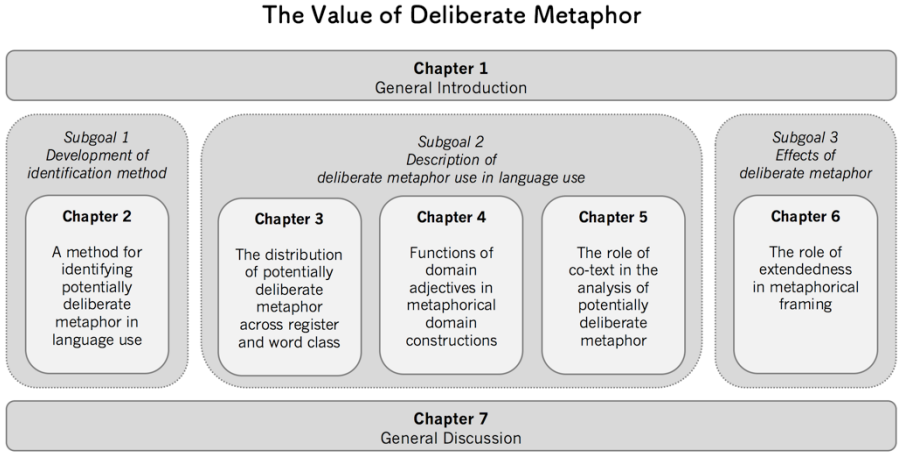

Figure 1.1 *Schematic overview of the thesis.*

Chapters 3–5 address the second subgoal of this thesis by describing the use of deliberate metaphor in discourse. In **Chapter 3**, the DMIP developed in Chapter 2 is applied to all 24,762 metaphors from the VUAMC. In this way, this chapter approaches the second subgoal by means of a quantitative corpus-analytical study, providing a general overview of the use of potentially deliberate metaphor in natural language use. In particular, this analysis provides an answer to the question to what extent the distribution of deliberate metaphor differs from that of non-deliberate metaphor, both across registers and across different word classes, as well as in connection to the interaction between register and word class.

Chapter 4 provides the first of two qualitative analyses of deliberate metaphor use. Specifically, this chapter zooms in on one special group of metaphors that, in the literature, have been considered a typical manifestation of deliberate metaphor: metaphorical domain constructions. This chapter examines the functions of domain adjectives in such metaphorical domain constructions, and investigates how they relate to the identification of deliberate metaphor. Results of the analysis demonstrate that not all metaphorical domain constructions may automatically be identified as deliberate metaphors.

Chapter 5 provides a second qualitative analysis of deliberate metaphor use. By means of a series of case studies, this chapter illustrates the complexity of the analysis of deliberate metaphor in language use. In these case studies, the role of co-text is shown to be important in the identification and/or analysis of metaphors as potentially deliberate. As such, this chapter provides a more detailed view of the communicative dimension of metaphor.

The third subgoal of this thesis is addressed in **Chapter 6**, which investigates the degree to which deliberate metaphor influences reasoning. This chapter uses insights from semiotic analysis to test hypotheses about the effects of deliberate metaphor by means of response-elicited data. To answer this question, two experiments investigate to what extent extended metaphor affects the perceived effectiveness of policy measures related to solving a crime problem. Results of these experiments show that deliberate metaphor may have subtle effects on reasoning, and invite further research into the psychological reality of deliberate metaphors for individual language users.

Finally, **Chapter 7** summarises the main findings of this thesis, and discusses their implications for Deliberate Metaphor Theory and related theories of metaphor in communication. Furthermore, this chapter points out limitations of the studies, and provides directions for future research.

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Chapter 2

DMIP: A method for identifying potentially deliberate metaphor in language use[1,2]

Abstract

This paper introduces the Deliberate Metaphor Identification Procedure (DMIP), a method for the systematic and reliable identification of potentially deliberate metaphor in language use. We take a semiotic approach to deliberate metaphor, and propose that, on a semiotic level, the distinction between potentially deliberate and non-deliberate metaphor hinges on the question whether the source domain functions as a distinct referent in the meaning of a metaphorical utterance. We present DMIP and illustrate the procedure in practice on the basis of the analysis of a series of real-world examples. We also report on inter-rater reliability testing. Finally, we discuss the implications of adopting DMIP as a tool for deliberate metaphor analysis, and point out how this approach can contribute to the further development of Deliberate Metaphor Theory.

2.1 Introduction

On April 19, 2016, Donald Trump won the Republican primary election in the state of New York. A few days later, *The Guardian* published an article about Trump's prospects for becoming the Republican candidate for President of the

[1] A slightly modified version of this chapter has been submitted as: Reijnierse, W.G., Burgers, C., Krennmayr, T., and Steen, G.J. (accepted, pending revisions) DMIP: A method for identifying potentially deliberate metaphor in language use.

[2] The data and data-analytical procedures of the reliability test reported in this paper are publicly accessible on the Open Science Framework (OSF) at http://bit.ly/2ls3ePc.

United States at the 2016 Presidential Elections. The headline of this article was: "The splinter is coming: the Republican race is a real-life Game of Thrones plot" (Smith & Jacobs, 2016). The first paragraphs of this article run as follows:

(1) The political battlefield is strewn with corpses. (...) 'Bom, bom, bom, bom. Now I'm left with two guys. Hardly two guys. Maybe you could say one. A half and a half.' If this were Game of Thrones, (...), Trump would be describing some gory dismemberment. But in America's Republican party equivalent, the businessman obsessed with gold has slashed his way through a field of 17 election candidates, as contemptuous of foes as Tywin Lannister (...). And although he put rivals to the sword in the New York primary this week, Trump appears to be looking over his shoulder, fearful of his own political demise.

(Smith & Jacobs, 2016)

The authors of this article make ample use of metaphor – the figure of speech in which one thing (the target) is described in terms of another (the source; e.g., Lakoff & Johnson, 1980). In (1), the target domain of the race for the Republican presidential nomination is described in terms of a scene from the popular book series and television show *Game of Thrones*, with Trump as one of the main characters. The Republican race is described as a 'battlefield' that is covered with 'corpses' (candidates that withdrew from the Presidential race). Trump has been 'slashing through the field of candidates' (defeating them), and his victory in yet another US state is described as 'putting rivals to the sword' (defeating his Republican rivals in that specific primary election). Moreover, Donald Trump himself is linked to Tywin Lannister, the patriarch of one of the mightiest families in *Game of Thrones*, and the initiator of the infamous 'Red Wedding' in which Lannister's rival Robb Stark was betrayed and murdered.

This type of metaphor use can be compared to examples (2)–(4), which are taken from other newspaper articles that are also about the US primaries:

(2) Hillary Clinton attacks Bernie Sanders as New York primary looms

(Weaver, 2016)

(3) The Battle for New York's Key Voting Blocs in the Primaries

(Fessenden & Almukhtar, 2016)

(4) Ted Cruz takes anti-Trump campaign to Wyoming
(Associated Press, 2016)

Like the *Game of Thrones* example in (1), examples (2)–(4) can be analysed as metaphorically describing the target domain of (primary) elections in terms of the source domain of war. In example (2), Clinton criticising Sanders is described in terms of her using violence to metaphorically harm him ('attacks'). In (3), the situation in which candidates try to win the New York primary is described in terms of a fight ('battle'). And in (4), the things a politician does to try to win an election are described as a series of actions that an army performs to try to win a war ('campaign').[3]

Despite the fact that examples (1) and (2)–(4) are similar in that they all make use of metaphor, a difference also exists between (1) on the one hand, and (2)–(4) on the other. In (1), the metaphors function *as* metaphors in communication between language users. They explicitly introduce a different perspective on the target domain of Trump's political success in the form of a scene from *Game of Thrones*. By contrast, in (2)–(4) there is no indication that the metaphors are used *as* metaphors, presenting an external perspective to the target domain of politics. In fact, the type of metaphors used in (2)–(4) may be so ingrained in language that they constitute the typical way in which people talk (and write) about politics; they are "just the way to say it" (Cameron, 2003, p. 100).

Since the beginning of the 1980s, Conceptual Metaphor Theory (hereafter: CMT; Lakoff & Johnson, 1980) has been the dominant theoretical framework in (cognitive) metaphor research (see Gibbs, 2011c). One of the main claims of CMT is that our conceptual system is largely metaphorical, and that all metaphors in language are expressions of underlying metaphors in thought. Due to this cognitive-linguistic emphasis on the conceptual nature of metaphor (e.g., Kövecses, 2002; Lakoff & Johnson, 1980, 1999; Ortony, 1993; see Gibbs, 1994), the distinct and variegated role of metaphor as a specific communicative device was given much less attention. However, researchers from various backgrounds have recently proposed to extend the cognitive-linguistic theory of metaphor beyond the levels of language and thought, paying attention to the role of metaphor *as* metaphor in communication (e.g., Cameron, 1999, 2003; Carston,

[3] Please note that several other words in these examples can also be identified as related to metaphor, that do not necessarily fit the mapping between politics and war: 'looms' in (2), 'in' in (3), and 'takes' in (4). For the sake of clarity, these words are ignored in the current analysis.

2010; Charteris-Black & Musolff, 2003; Deignan, 2005; Goatly, 1997; Goddard, 2004; Müller, 2008; Needham-Didsbury, 2016; Steen, 2008, 2011b, 2015). The proposals by Cameron (2003), Charteris-Black and Musolff (2003), and Steen (e.g., 2008, 2011b, 2015) are most closely related to the two-dimensional model of metaphor (Lakoff & Johnson, 1980, 1999), in that they all take the dimensions of language and thought as a starting point. However, to incorporate the distinction between the type of metaphor use illustrated in (1) versus (2)–(4) into the model of metaphor, these authors propose an adjustment or extension of the cognitive-linguistic two-dimensional model of metaphor.

The proposal by Steen (e.g., 2008, 2011b, 2015), in particular, has lately attracted much attention among metaphor researchers (see, e.g., Charteris-Black, 2012; Deignan, 2011; Gibbs, 2011a, 2011b, 2015a, 2015b; Müller, 2011, 2016; Musolff, 2016; Roncero, Almeida, Martin, & de Caro, 2016; Xu, Zhang, & Wu, 2016). In this three-dimensional model, which has become known as Deliberate Metaphor Theory (hereafter: DMT), metaphor is not only seen as the linguistic expression of an underlying metaphorical structure in thought, but also as a matter of communication between language users. In the third dimension, a distinction is made between metaphors that are used *as* metaphor (called 'deliberate metaphors'), and metaphors that do not have such a function (called 'non-deliberate metaphors').

Besides attention for the theoretical aspects related to the distinction between deliberate and non-deliberate metaphor, further valuable insights into the status of metaphor as a specific communicative device may be obtained by investigating the phenomenon from an empirical perspective. In fact, several studies have examined the occurrence of deliberate metaphor in various discourse settings (e.g., Beger, 2011, 2016; Nacey, 2013; Ng & Koller, 2013; Pasma, 2011; Perrez & Reuchamps, 2014; see also Cameron, 2003). However, a uniform operational definition and a tool for the identification of deliberate metaphor in discourse are not yet available (see Beger, 2011; Ng & Koller, 2013; Steen, 2011b).[4]

In this paper, we aim to contribute to the further development of DMT by introducing an operational definition as well as a tool (DMIP) to systematically and reliably analyse potentially deliberate metaphor in natural

[4] Krennmayr's (2011) protocol for the identification of deliberate metaphor, IDeM, and Bogusławski's (1994) 'metalexical tag test' (see Goddard, 2004) can be seen as exceptions. However, Krennmayr's protocol takes a top-down, rather than bottom-up approach. Bogusławski's approach is not an actual identification procedure, but rather a test for determining potential metalexical awareness.

language use. The establishment of an identification procedure makes it possible to move away from intuitive analyses of what analysts 'feel' counts as a potentially deliberate metaphor in discourse. A systematic, reliable, step-by-step procedure yields more objective analyses and results that can be replicated by other researchers.

In the next section, we first provide our operational definition of deliberate metaphor. Then, we present the method for deliberate metaphor identification (DMIP). We apply the procedure to a series of examples to illustrate how it works in practice. We also report the results of inter-rater reliability testing to show that DMIP can be reliably applied to identify potentially deliberate metaphor in natural language use. In the final section of this paper, the implications of adopting DMIP as a tool for deliberate metaphor analysis are discussed. We also point out how DMIP can contribute to the further development of DMT.

2.2 Towards an operational definition of deliberate metaphor

In DMT (e.g., Steen, 2008, 2011b, 2011c, 2015), metaphor is not only seen as a matter of conceptual structures (metaphor in thought) expressed in linguistic forms (metaphor in language), but also as a matter of communication between language users (metaphor in communication). In DMT, a distinction is consequently made between thoughts, the words that are used to express those thoughts, and the persons, things, actions, or events in the (text) world that the words refer to (referents).[5] Such a three-dimensional model may be new to metaphor studies, but it is compatible with longstanding models for utterance meaning in, for example, structural-functional theories of language (in particular Functional Discourse Grammar; e.g., Hengeveld, 2004), as well as pragmatics (e.g., Relevance Theory; Wilson & Sperber, 2002).

As pointed out above, at the dimension of metaphor in communication, DMT makes a distinction between deliberate and non-deliberate metaphor. When a metaphor is used deliberately, it provides an alien or alternative

[5] In Goatly's (1997) approach to metaphor, reference is also a central notion in that referential meaning is "crucially important for reaching the Grounds of interpretation" (p. 110). However, Goatly does not explicitly distinguish between three dimensions of metaphor in the sense of language, thought, and communication.

perspective on the topic of an utterance (Steen, 2008, 2011b, 2015). This, in turn, implies that "the addressee has to move away their attention momentarily from the target domain of the utterance or even phrase to the source domain that is evoked by the metaphor-related expression" (Steen, 2015, p. 68). By contrast, a metaphor is called non-deliberate when it is not used *as* metaphor in communication between language users. From a communicative perspective, non-deliberate metaphors stay 'on topic', and the recipient does not have to attend to the source domain of the metaphorical utterance (Steen, 2011b).

In DMT, the presence of attention to the source domain as a distinct domain of reference is the central feature of deliberate metaphor (Steen, 2015).[6] This can be investigated from two fundamentally different, but complementary perspectives: a semiotic and a behavioural perspective (Krennmayr, 2011; Steen, 2007; cf. Cameron, 1999). Semiotic metaphor analyses describe the meaning of metaphorical utterances in a structural-functional way. Behavioural metaphor analyses are concerned with determining how such metaphorical utterances are processed by individual language users, in both production and reception, and/or what effects they have on reasoning. These two approaches each have their own research questions, methods of analysis, and outcomes. At the same time, the results of semiotic analyses may lead to concrete research hypotheses that psycholinguistic and psychological research can subsequently test, and the other way around (Gibbs, 2015a).

In this paper, we take a semiotic approach to the identification of deliberate metaphor. This means that we investigate the multidimensional meaning of metaphorical utterances in text and transcripts of talk. Adopting a semiotic approach has several consequences for the way in which we operationalise deliberate metaphor (as would be the case when taking a behavioural approach). First of all, semiotic analyses do not make any claims about what in fact happens in specific individual language users' minds when they produce or process metaphors, nor about what happens in interaction between people using metaphor. This implies that a semiotic approach can only identify cases of *potentially* deliberate metaphor (Krennmayr, 2011; Nacey, 2013; and cf., e.g., Cameron, 1999; Steen, Dorst, Herrmann, Kaal, Krennmayr, & Pasma, 2010, for all metaphor). Whether those *potentially* deliberate metaphors are psychologically real for actual language users, and in which contexts, is a

[6] Please note that other researchers, most notably Müller (e.g., 2008, see also Müller & Tag, 2010), and Carston (2010) have also mentioned attention as an important aspect of particular forms of metaphor use, for example in relation to foregrounding and activation of metaphoricity.

question that psycholinguistic and psychological research should subsequently test, using response-elicitation approaches such as experiments or interviews.

Because we start from texts and transcripts of talk, we do not have direct access to the precise circumstances under which a metaphorical utterance is produced or received. We also do not have insight into the specific knowledge that discourse participants have (of the world, of word meanings) or share between them. To prevent the analyst's own intuitions from playing a role in the process of identifying potentially deliberate metaphors, it is important to use independent information about the different ways in which words can be used. Such information can be obtained from various resources, including large-scale corpora (e.g., Deignan, 2005) and corpus-based dictionaries (e.g., Pragglejaz Group, 2007; Steen et al., 2010; see also Semino, Heywood, & Short, 2004). In this paper, we establish contemporary word meanings on the basis of a corpus-based dictionary. Following Steen et al. (2010; see also Krennmayr, 2008), we use the online versions of the *Macmillan English Dictionary* and the *Longman Dictionary of Contemporary English* as sources. Any sense description for an entry in at least one of these dictionaries is considered a conventionalised meaning for that entry. Any meaning that cannot be found in these dictionaries is considered novel (see Semino, 2008; Steen et al., 2010). In this way, DMIP assumes (similar to MIPVU; Steen et al., 2010) an idealised contemporary language user, whose mental lexicon is represented in the dictionary.

As a consequence of not making claims about processing (either during production or reception, or in interaction), a semiotic operational definition of deliberate metaphor should make explicit how attention to the source domain – the central feature of deliberate metaphor in DMT – can be observed in language use. As was argued above, the three dimensions of metaphor can be linked to the distinction between symbols, concepts, and referents. For a metaphor to count as potentially deliberate, it must not only be identified as a source-domain *word* at the linguistic level of utterance meaning and consequently as a source-domain *concept* at the conceptual level, but it also has to set up a source-domain *referent* in the state of affairs designated by the utterance (Steen, 2017). Put otherwise, a metaphor is potentially deliberate when the source domain plays a role in the representation of the referential meaning of the utterance.

In (1), for instance, the noun 'corpses' is related to metaphor at the linguistic level of utterance meaning because it comes from a different domain than the target domain of the utterance, which is concerned with politics. For the same reason, 'corpses' is metaphorical at the level of conceptual utterance

meaning: the associated concept CORPSES[7] comes from a different domain than the target domain of POLITICS. For 'corpse', only one sense description is present in the dictionary: "the body of a dead person" (*Macmillan*), and this does not match the target domain of politics. At the level of communication, therefore, 'corpses' sets up a source domain referent in the meaning of the utterance, and thereby introduces a new perspective on the target domain of politics. 'Corpses' is consequently identified as a potentially deliberate metaphor. Other words in (1) that can be identified as potentially deliberate metaphors include 'battlefield', 'slashed', and 'sword'.

By contrast, a metaphor is non-deliberate when a word is metaphorical at the linguistic level and the associated concept is metaphorical at the conceptual level, but only a target domain referent (but no source domain referent) is present in the state of affairs designated by the utterance. This is the case in (2), where 'attacks' is metaphorical at the linguistic level because it displays a contrast between the target domain meaning of criticising, and a source domain meaning of using violence. The associated concept is metaphorical at the conceptual level of meaning because ATTACKS comes from a different domain than the target domain of the utterance. However, contrary to 'corpses' and other metaphors in the *Game of Thrones* example in (1), the source domain meaning of 'attacks' does not play a role in the referential meaning of the utterance in (2). A conventionalised target domain meaning is available for the verb 'to attack' in the dictionary, and there is no indication that an external perspective on the target domain of criticising someone is introduced. This metaphor therefore counts as non-deliberate.[8] Based on these considerations, we operationalise 'attention to the source domain' as: presence of a source domain referent in the state of affairs designated by the utterance (see Steen, 2016).

A third and crucial aspect for our operational definition of deliberate metaphor is concerned with the way in which the presence of the source domain in the referential meaning of an utterance can be observed in language

[7] Following conventions in cognitive linguistics (see, e.g., Lakoff, 1993), we use small capitals to indicate conceptual domains.

[8] Please note that, if the verb 'to attack' would have been used in the *Game of Thrones* example, it would have been identified as potentially deliberate because it can be connected to the war-scenario that is presented in this example. This shows the importance of not equating conventional metaphor with non-deliberate metaphor, as well as the importance of taking a bottom-up approach when identifying potentially deliberate metaphors in discourse.

use. We argue that such presence of the source domain can be determined by looking for metaphor signals and other co-textual cues (see Steen, 2015, 2016). In the literature, several suggestions have been put forward as to what such cues may look like (e.g., Krennmayr, 2011; Nacey, 2013; Steen, 2016; see also Cameron & Deignan, 2003; Goatly, 1997; Semino, 2008). These suggestions include lexical signals such as 'like' and 'as', the use of novel metaphor, and extended metaphor (multiple metaphor-related words expressing the same source-target domain mapping). These cues have been used to search for manifestations of potentially deliberate metaphor use in a top-down manner. However, the presence of a source domain referent in the metaphorical utterance can be suggested in many different ways, not just by lexical signals. To allow a thorough exploration of all possible manifestations of potentially deliberate metaphor in natural language use, our method therefore works bottom-up by analysing every metaphor-related word in a given text as well as top-down by analysing every metaphor-related word in the context of the genre event it partakes in.

The above observations show several important aspects that need to be taken into account for the operationalisation of deliberate metaphor for semiotic analysis: (1) the fact that only *potentially* deliberate metaphors can be identified; (2) the idea that the source domain has to be present in the referential meaning of a metaphorical utterance; and (3) the idea that the presence of such source domain referents can be traced by looking for cues. Based on these aspects, we operationalise deliberate metaphor as follows:

> A metaphor is potentially deliberate when the source domain of the metaphor is part of the referential meaning of the utterance in which it is used.

2.3 DMIP: a method for identifying potentially deliberate metaphor in language use

In this section, we introduce a step-by-step method for the identification of potentially deliberate metaphor in language use. A schematic overview of DMIP is presented in Figure 2.1.

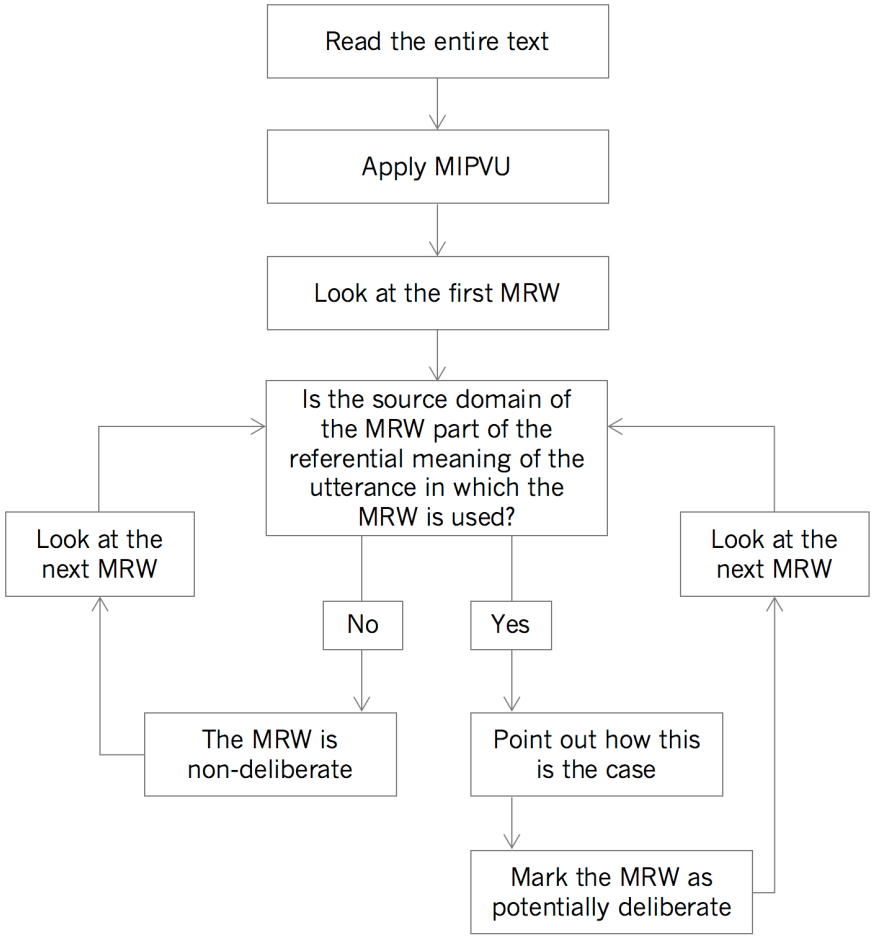

Figure 2.1 *The Potentially Deliberate Metaphor Identification Procedure (DMIP) coding scheme.*

1. Read the entire text to get a general idea of what the text is about.
2. Apply the Metaphor Identification Procedure Vrije Universiteit (MIPVU) to find all metaphorical lexical units (metaphor-related words, or MRWs; see Steen et al., 2010, for detailed instructions).[9]

[9] Steen et al. (2010) use the term 'lexical unit' instead of 'word' because some units of analysis, such as multiword expressions, compounds, or phrasal verbs, consist of more than one word. In general, however, words and lexical units are the same (see Steen et al., 2010, p. 26–32, for details).

3. Look at the first MRW.
4. Determine whether the source domain of the MRW is part of the referential meaning of the utterance in which the MRW is used.
    a. If 'yes', mark the MRW as potentially deliberate and proceed to step 5.
    b. If 'no', mark the MRW as non-deliberate and proceed to step 6.
    c. In case of doubt, mark the MRW as potentially deliberate, and add the code WIDLII (When In Doubt Leave It In; see Steen et al., 2010). Then, proceed to step 5.
5. If the MRW is coded as potentially deliberate in step 4, describe *how* the source domain of the MRW is part of the referential meaning of the utterance.
6. Look at the next MRW.

2.4 Applying DMIP: sample analyses

To illustrate how DMIP works in practice, we apply the procedure to a series of selected examples that contain various manifestations of potentially deliberate metaphor. All examples come from the VU Amsterdam Metaphor Corpus (hereafter: VUAMC).[10] The VUAMC is a corpus of almost 190,000 lexical units, sampled from the British National Corpus. All lexical units in the VUAMC are annotated for metaphor by means of MIPVU (Steen et al., 2010), a reliable tool for the identification of linguistic metaphor in discourse. Please note that all lexical units that are identified as related to metaphor by MIPVU are followed by a superscript 'MRW' tag in the following analyses.

Example (5) comes from a newspaper article in which a journalist argues why a power station in London should be put on the English Heritage list, rather than being demolished. The author first describes a view over London:

(5) [From] the top of the dome of St Paul's Cathedral the view is no longer dominated^{MRW} by City church steeples but by an intrusive cacophony^{MRW} of drab, characterless Sixties boxes.

(VUAMC-A4D-02)

[10] The corpus is available online via http://ota.ahds.ac.uk/headers/2541.xml (Oxford Text Archive).

Example (5) contains two lexical units that are identified as MRW by MIPVU: the verb 'dominated' and the noun 'cacophony'. First, the noun 'cacophony' is related to metaphor at the linguistic level of utterance meaning. It comes from the domain of sounds, which is different than the target domain of this utterance, which is concerned with buildings. 'Cacophony' is metaphorical at the conceptual level of utterance meaning for the same reason: the associated concept CACOPHONY comes from a different domain than the target domain of BUILDINGS.

The key question for determining whether the MRW 'cacophony' is potentially deliberate at the level of communication is whether the source domain of sound is part of the referential meaning of the utterance. In the case of 'cacophony', only one sense description is present in the dictionary: "an unpleasant mixture of loud sounds" (*Macmillan*). This sense description does not capture the 'buildings' target domain meaning of the noun, suggesting that no conventionalised target domain concept is available. As a result, the metaphor can be taken to introduce a new perspective on the target domain, and the source domain is needed as a distinct referent in the state of affairs designated by the utterance. This makes 'cacophony' a potentially deliberate metaphor. The referential meaning for the second part of the utterance can consequently be spelled out as: "... the view is no longer dominated^{MRW} by City church steeples but by an intrusive mixture of buildings that is similar to an unpleasant mixture of loud sounds."

Example (5) also contains a second MRW: the verb 'dominated'. This verb displays a contrast between the target domain of buildings, and a human-oriented, historically older, sense description of powerful people controlling a situation.[11] These two sense descriptions can be compared, making 'dominated' metaphorical at the linguistic level of utterance meaning. In a similar vein, 'dominated' is metaphorical at the conceptual level of utterance meaning because its associated concept comes from a different domain than the target domain of the utterance. In the case of 'dominate', a conventionalised metaphorical meaning is present in the dictionary that matches the target

[11] In some cases, more than one sense description can be considered a source domain candidate, for instance because one description is more concrete, while another description is related to bodily action (see the criteria for more basic meanings in Pragglejaz Group, 2007). In such cases, history may be taken into account as a 'tiebreaker' (see Krennmayr, 2008). Because the 'control' sense (*Macmillan* sense description 1) is historically older (see the *Oxford English Dictionary*), this sense is taken as the basic, source domain meaning of the verb 'to dominate'.

domain of the utterance: "if an object dominates a place, it is so big or high that it is easy to notice" (*Macmillan* sense description 4; hereafter: MM4, etc.). There is no cue in the utterance that suggests that the source domain of powerful people controlling a situation plays a role in the referential meaning of the utterance. A complete and coherent referential meaning of the utterance consequently consists of a target domain state of affairs only. The referential meaning of the utterance can be spelled out as: "From the top of the dome of St Paul's Cathedral, City church steeples are no longer easy to notice". This makes 'dominated' a non-deliberate metaphor.

The next example, (6), comes from a non-specialist book about palaeontology. It contains one lexical unit that is identified as MRW by MIPVU. In addition, MIPVU identifies the preposition 'like' as a signal of metaphor, or MFlag (indicated by a superscript 'MFlag' tag). In the extract, the author of the book describes the eyes of a Cystosoma (a kind of shrimp), which has:

(6) enormously expanded eyes, looking like^{MFlag} headlamps^{MRW}
(VUAMC-AMM-02)

The noun 'headlamps' is identified as a metaphor-related word at the level of language, because it comes from a different domain than the target domain of animals, namely that of vehicles. The noun is also metaphorical at the conceptual level of utterance meaning, because the associated concept HEADLAMPS comes from a different domain than the target domain of the utterance.

To determine whether 'headlamps' counts as a case of potentially deliberate metaphor, we examine whether the example contains one or more cues suggesting that the source domain plays a role in the referential meaning of the utterance. In the case of 'headlamps', two cues can be found that this is indeed the case. First, in MIPVU terminology, 'headlamps' is a direct metaphor (Steen et al., 2010). This means that the lexical unit does not display a difference between a contextual and a more basic meaning; as a linguistic expression, it is not used metaphorically itself. The contextual meaning of the noun 'headlamp' in (6) is 'headlamp', "one of the two lights on the front of a vehicle, used for driving at night" (*Macmillan*).[12] However, 'headlamp' does express a cross-domain mapping in the form of a comparison (the eyes look like

[12] Please note that both *Macmillan* and *Longman* define 'headlamp' as "a headlight", which is uninformative. Therefore, the sense description for 'headlight' is used.

headlamps). This means that an external perspective is introduced into the discourse that directly refers to an autonomous source domain referent. Consequently, the source domain is present as a referent in the state of affairs designated by the utterance. Additional support for this view is provided by the preposition 'like', which explicitly signals that the eyes of an animal are compared to the lights at the front of a vehicle. The lexical unit 'headlamps' is consequently identified as a potentially deliberate metaphor. The referential meaning of (6) can therefore be spelled out as: "the cystosoma has enormously expanded eyes that look like the two lights on the front of a vehicle".

The next example, (7), comes from a newspaper article about the possible revival of the western on television. After pointing out that the series *The Young Riders* occupied the 51st place in the weekly audience rating of TV series, the author concludes:

(7) It is premature[MRW], then, to say that the western has galloped[MRW] back[MRW] to[MRW] centre[MRW] screen.

(VUAMC-A2D-05)

This example contains five lexical units that are identified as MRW by MIPVU: 'premature', 'galloped', 'back', 'to', and 'centre'. In the remainder of this analysis, the focus will be on the verb ('galloped'), the adverb ('back'), and the preposition ('to'). These three lexical units are identified as related to metaphor at the dimension of language, because they display a contrast between the contextual and a more basic meaning that can be related via comparison. For 'galloped', a sense description is available in the dictionary that captures the target domain meaning: "to move, pass, or *develop* very quickly" (MM2; emphasis added). This sense description contrasts with a more basic meaning of the verb: "if a horse gallops, it runs at its fastest speed" (MM1). At the same time, the revival of the western can be compared to the fast movement of a horse, making this a conventional metaphor. At first sight, there may not seem to be any cues in the utterance that point toward the presence of a source domain referent in the referential meaning of the utterance. In fact, the target domain sense for 'to gallop' ("to move, pass, or *develop* very quickly") is conventionalised, available, and it captures the referential meaning of the utterance. Consequently, the verb could at first glance be identified as a non-deliberate metaphor, in which case the referential meaning of the utterance could be spelled out as "It is [too soon], then, to say that the western has quickly developed back[MRW] to[MRW] centre[MRW] screen".

Yet, as an analyst applying DMIP, we know that the newspaper article is about westerns (step 1 of the procedure). Given this information, it appears that the source domain meaning of this metaphorical lexical unit matches the overall topic of the text. That is, one of the key features of a western is that it includes horses (e.g., for cowboys to ride). In this example, lexis from the semantic field of the overall topic of the text is thus used in a figurative way (Herrera Soler, White, Villacañas, & Amengual, 2006). This is known as topic-triggered metaphor (Koller, 2003). Both the non-metaphorical (source domain) meaning and the metaphorical (target domain) meaning are relevant in the complex referential structure of this example, resulting in some kind of wordplay. Consequently, a full representation of the referential meaning of the utterance can only be established when this ambiguity is taken into account. The source domain referent is thus part of the referential meaning of the utterance. As a result, 'galloped' counts as a case of potentially deliberate metaphor.

As a result of the analysis of 'galloped' as a potentially deliberate metaphor, both the adverb 'back' and the preposition 'to' can also be identified as potentially deliberate. These two lexical units are both part of the same source domain 'scene' describing a horse running in a certain direction. The fact that (it is too soon to say that) the western is quickly becoming popular again on television is described in terms of a horse quickly running back to a place where it was before. The source domain meanings of both 'back' and 'to' express concrete movement (of the horse) into a particular direction, while the relevant target domain meanings describe the development of the western. As a result, both 'back' and 'to' are identified as potentially deliberate metaphors, too.

A final example, (8), to which we apply DMIP comes from a newspaper article describing an investment business that is going bankrupt:

(8) a small, investment business called Barlow Clowes had collapsed[MRW].
(VUAMC-AA3-08)

The verb 'collapsed' is identified as MRW by MIPVU. This verb comes from a different domain than the target domain of this utterance, which is concerned with a failing business. That is, the more basic, source domain meaning, of 'collapsed' is the concrete, historically older, "if a building or other structure collapses, it suddenly falls down" (MM1).[13] 'Collapsed' is also related to

[13] *Macmillan* contains a second source-domain candidate sense description, which is human-oriented: "to suddenly fall down and become very ill or unconscious" (MM2).

metaphor at the dimension of thought: the associated concept COLLAPSED comes from a different domain than the target domain of the utterance.

To determine whether the MRW 'collapsed' counts as a case of potentially deliberate metaphor, we examine whether there are cues suggesting that the source domain of buildings plays a role in the referential meaning of the utterance. In (8), no such cues are present. For the verb 'collapsed', a conventionalised metaphorical meaning is available in the dictionary that matches the target domain meaning of the utterance: "to suddenly fail or stop existing" (MM3). On the basis of this target domain meaning, a complete and coherent referential meaning for this example can be constructed, in which the source domain does not play a role. In contrast to the previous two examples, DMIP consequently identifies the MRW 'collapsed' as non-deliberate. The referential meaning of the utterance can be spelled out as follows: "a small, investment business called Barlow Clowes had suddenly stopped existing".

2.5 Assessing the reliability of DMIP

It is vital to report inter-rater reliability scores to show whether the application of a newly introduced identification procedure leads to sufficient agreement among analysts as to what counts as an instance of the phenomenon involved (and what not). One of the main reasons for creating DMIP is to move away from analysts' intuitions about what counts as a deliberate metaphor. Establishing a reliable method yields results that are independent of the analyst who performs the analysis. This makes it possible for other analysts to follow the decision process, and reproduce the results. And this, in turn, creates a uniform basis for discussion and comparison of results.

In the process of developing DMIP, a series of pilot studies were carried out in which three analysts (among which the first author of this paper) applied the method to a series of sample sentences from the VUAMC. These pilots were used to improve DMIP, and each round led to minor adjustments to the method. To then examine whether the version of DMIP as it is presented in the current paper can indeed be considered a reliable method for the identification of potentially deliberate metaphor in discourse, we carried out two reliability tests. These tests were carried out by the first author of this paper, and one of the two

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Similar to the analysis of 'dominated' in (5), history was taken into account as a tiebreaker to determine the more basic meaning of the verb 'to collapse'.

other analysts who had been involved in the pilot phase of testing and improving the procedure.

The two coders independently applied DMIP to two sets of randomly selected metaphor-related words from the VUAMC. Results of the first reliability test show that the two coders agreed on the classification of these 129 MRWs as either potentially deliberate or non-deliberate in 93.8% of the cases. The associated Cohen's kappa for this test indicates "substantial agreement" (κ = .70; Landis & Koch, 1977, p. 165). Results of the second reliability test show that the two coders agreed on the classification of the second set of 130 MRWs as potentially deliberate or non-deliberate in 96.9% of the cases. Cohen's kappa for this test indicates "substantial agreement", as well (κ = .73; Landis & Koch, 1977, p. 165). These results indicate that the identification of potentially deliberate metaphor in language use can be carried out in a reliable way by means of the method for identifying potentially deliberate metaphor (DMIP), which was introduced in this paper.

2.6 Conclusion and discussion

In this paper, we introduced DMIP, a reliable step-by-step method for the identification of potentially deliberate metaphor in language use. Our reasons for establishing such a method were twofold. Firstly, we aimed to advance the theory of deliberate metaphor (DMT; e.g., Steen, 2008, 2011b, 2015) by approaching the notion of deliberateness from an empirical (more specifically: semiotic), rather than a theoretical angle. Secondly, we aimed to create a reliable tool for the semiotic analysis of deliberate metaphor in which analysts' intuitions do not play a role, and that can therefore yield reproducible results. In this respect, our method can be compared to other identification procedures, such as MIP and MIPVU for linguistic metaphor identification (Pragglejaz Group, 2007; Steen et al., 2010), VIP for verbal irony identification (Burgers, van Mulken, & Schellens, 2011), and HIP for hyperbole identification (Burgers, Brugman, Renardel de Lavalette, & Steen, 2016).

As a first step towards the development of DMIP, the theoretical definition of deliberate metaphor of requiring an addressee to move away their attention from a target domain to a source domain (Steen, 2015) was translated into an operational definition. Our definition is as follows: "A metaphor is potentially deliberate when the source domain of the metaphor is part of the referential meaning of the utterance in which it is used". This operational

definition was then used to establish DMIP. On the basis of a series of sample analyses, we have shown that DMIP allows for a broad variety of metaphors to be identified as potentially deliberate. At the same time, the results of the inter-rater reliability test showed that two coders can reliably apply the procedure.

We have introduced DMIP as a methodological tool to investigate the underlying semiotic structures of potentially deliberate metaphor. The procedure requires analysts to make a dichotomous choice between 'potentially deliberate' and 'non-deliberate' metaphor. Such a binary decision yields a coarse-grained picture of the role of metaphor *as* metaphor in communication between language users that is clearly a reduction of the complexity and wealth of actual language use. However, the binary perspective adopted by DMIP allows for quantitative results in the form of a general overview of the frequency of potentially deliberate (as compared to non-deliberate) metaphor in language use. It can also be used to investigate how frequent potentially deliberate metaphor is used – and how it is distributed – across a variety of registers and word classes, for instance along the same lines as Steen et al. (2010; see Chapter 3 in this thesis).

That is not to say, however, that all MRWs that are identified as potentially deliberate on the basis of DMIP fit into one homogenous group (and the same can be said for non-deliberate metaphors). On the contrary, a wide range of manifestations of metaphorical language use may be identified as potentially deliberate, based on specific cues in metaphorical utterances. In the analyses presented in this paper, we have shown that such cues can, for instance, consist of lexical signals ('like'), the use of direct metaphor, and wordplay. However, it is important to note that these examples by no means display the entire range of possible cues. When applying the procedure to (recorded) spoken discourse, for instance, paralinguistic features such as intonation and stress, as well as gestures, could also be identified as cues of potentially deliberate metaphor. This is why it is important to perform the identification of potentially deliberate metaphor in a bottom-up fashion, starting from the data rather than from a set list of features to look for. Further, detailed, analyses should investigate whether or how the two main categories of potentially deliberate and non-deliberate metaphor can be subdivided into more specific categories. The content provided by the analyst in step 5 of the procedure can be used as a starting point for such analysis. In this step, the analyst is asked to point out how the source domain of the MRW is part of the referential meaning of the utterance.

One of the main consequences of the semiotic approach to deliberate metaphor adopted in this paper is that DMIP does not investigate whether metaphor-related words are processed deliberately *as* metaphors by individual language users – either addressers or addressees – in communication. That is, a metaphor may be produced and received as a deliberate metaphor, but asymmetry may also occur, in particular when a metaphor is produced as a deliberate metaphor, but not be received as such, or the other way around (see Goatly, 1997). Whether, when, and under which specific conditions these various ways of processing happen is a question that further psycholinguistic analyses have to investigate. Such behavioural studies may also shed light on the question whether the metaphors that DMIP identifies as potentially deliberate are indeed processed by means of cross-domain mappings. This is one of the main predictions of DMT (Steen, 2008, 2011b), and the application of DMIP can provide the data to serve as a starting point for psycholinguistic and/or psychological experiments testing this prediction.

Behavioural studies may also investigate to what extent further factors are relevant in deliberate metaphor processing, such as register, communicative setting, salience, aptness, individual language users' linguistic/world knowledge, emotions, embodied simulation, visual imagery, and so on. All of these aspects may play a role in the production, reception, and effects of deliberate metaphor. They should be taken into account if we want to arrive at a fuller understanding of the role and function of metaphor in communication between language users. However, these are all aspects that cannot be determined on the basis of texts and transcripts of talk (alone); consequently, they do not play a role in the identification procedure proposed in this paper.

In DMT, however, predictions about the way in which deliberate versus non-deliberate metaphor is processed are established in connection with theories of text comprehension in discourse psychology (e.g., Van Dijk & Kintsch, 1983; McNamara & Magliano, 2009). The level of referential utterance meaning that plays an important role in DMIP can be connected to the situation model that readers or listeners construct during discourse comprehension, and which is concerned with "the cognitive representation of the events, actions, persons, and in general the situation, a text is about" (Van Dijk & Kintsch, 1983, p. 11).[14] When a metaphor is deliberate, the prediction is that both the source domain and the target domain meaning of the metaphor are activated in people's

[14] Likewise, the levels of linguistic and conceptual utterance meaning can be connected to Van Dijk and Kintsch' (1983) surface text and text base, respectively (see also Steen, 2011a).

situation model of the discourse (Steen, 2017). By contrast, when a metaphor is non-deliberate, the prediction is that only the target domain meaning of the metaphor is activated in the situation model (Steen, 2017). In making predictions about the activation of metaphorical meaning in some but not all metaphorical expressions, DMT can be connected with other recent theoretical proposals about metaphor processing, such as Bowdle and Gentner's (2005) 'Career of Metaphor theory', Carston's (2010; see also Needham-Didsbury, 2016) account of two routes of metaphor processing, Goatly's (1997; see also Deignan, 2005) model of dead, buried, sleeping, tired, and active metaphors, and Müller's (2008) dynamic view of metaphor (see Müller, 2016).

Ultimately, the combination of semiotic and behavioural approaches to (potentially) deliberate metaphor will lead to a fuller understanding of the role of metaphor in communication, as well as to a fuller developed theory of deliberate metaphor. By introducing DMIP, in which deliberate metaphor is operationalised from a semiotic perspective, we hope to have contributed to this development in the current paper.

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Chapter 3

Metaphor in communication: The distribution of potentially deliberate metaphor across register and word class[1,2]

Abstract

Recent developments in metaphor studies have sparked renewed interest in the role of metaphor in communication between language users. The aim of this paper is to investigate the occurrence of metaphor with a specific communicative function ('deliberate metaphor'; Steen, 2008, 2011) in comparison with metaphors that do not have such a function ('non-deliberate metaphor'; Steen, 2008, 2011) in natural language use. To this end, we analyse a corpus of almost 25,000 metaphors for the presence of potentially deliberate (versus non-deliberate) use across different registers and word classes. Results of this analysis show that 4.36% of all metaphors in language use are potentially deliberate. News and fiction contain significantly more potentially deliberate metaphors, while academic texts and face-to-face conversations exhibit significantly fewer potentially deliberate metaphors than expected. Moreover, nouns and adjectives are used relatively more frequently as potentially deliberate metaphors, while adverbs, verbs, and prepositions are used relatively less frequently as potentially deliberate metaphors. These results can be explained by referring to the overall communicative properties of the registers

[1] A slightly modified version of this chapter has been submitted as: Reijnierse, W.G., Burgers, C., Krennmayr, T., and Steen, G.J. Metaphor in communication: The distribution of potentially deliberate metaphor across register and word class.

[2] The data and data-analytical procedures of the corpus analysis and the reliability test reported in this paper are publicly accessible on the Open Science Framework (OSF) at: http://bit.ly/2kxOJu6.

concerned, as well as to the role of the different word classes in those registers. The results of this study provide new insights into the use of metaphor with different communicative functions.

3.1 Introduction

Since the 1980s, much linguistic research into metaphor has been inspired and/or influenced by Conceptual Metaphor Theory (henceforth: CMT; Lakoff and Johnson, 1980, 1999; see Gibbs, 2011, for an overview). According to CMT, metaphors in language are expressions of metaphorical structures in thought. Thus, when saying 'I have invested a lot of time in this project', CMT argues that this is the result of a cross-domain mapping in thought between the conceptual domains of MONEY[3] (the source domain) and TIME (the target domain). One of the main claims of CMT that follows from this view of metaphor as a predominantly conceptual device, is that metaphor is not "extraordinary", but rather "pervasive in everyday life" (Lakoff & Johnson, 1980, p. 3). Studies investigating metaphor in discourse invariably show that metaphor is indeed a ubiquitous phenomenon in language, including in classroom discourse (e.g., Cameron, 2003), financial reporting (e.g., Charteris-Black & Ennis, 2001), political discourse (e.g., De Landtsheer, 2009), and science discourse (e.g., Semino, Hardie, Koller, & Rayson, 2009).

As a consequence of the strong focus in CMT on the conceptual functions of metaphor, its use as a tool to accomplish specific communicative goals was long sidelined (e.g., Charteris-Black, 2004; Semino, 2008; Steen, 2008). However, recent developments in metaphor studies have sparked renewed interest in the role of metaphor used *as* metaphor in communication (e.g., Cameron, 1999, 2003; Charteris-Black & Musolff, 2003; Gola & Ervas, 2016; Semino, 2008; Wee, 2005). This has led to a rehabilitation of rhetorically-oriented approaches to metaphor (e.g., Charteris-Black, 2005; Eubanks, 2000; Musolff, 2004). Based on the analysis of metaphor in natural language use, researchers have noticed that metaphors can fulfil different functions in different contexts, and that some metaphors seem more creative, more striking, or more explicitly metaphorical than others (e.g., Cameron, 2003; Cameron & Low, 1999; Musolff & Zinken, 2009; Semino, 2008). Consider, for instance, the

[3] Following conventions in cognitive linguistics (see, e.g., Lakoff 1993), we use small capitals to indicate conceptual domains.

following two examples, the first of which comes from a novel, the second from a scientific journal:

(1) Life is like *a box of chocolates*

(Murakami, 1989[4]; emphasis added)

(2) Insights *into* [human] evolution *from* the gorilla genome sequence

(Scally et al., 2012; emphasis added)

Both (1) and (2) contain metaphor in that one thing (the target domain) is described in terms of something else (the source domain; Lakoff & Johnson, 1980). In (1), life is described in terms of a box of chocolates. In (2), gaining insights about evolution is described in terms of movement ('into', 'from').

Although these examples are thus similar in that they contain metaphor, they are also different from each other. Example (1) contains an explicit metaphorical comparison, signalled by the preposition 'like'. By comparing life to something very concrete that is clearly different from it – a box of chocolates – the metaphor stands out in the discourse. In this case, the metaphor is potentially used *as* a metaphor at the level of communication between language users (Steen, 2008, 2011, 2015). By contrast, for the metaphorical prepositions 'into' and 'from' in (2), there is no indication that these are used *as* metaphors in communication between language users. In fact, the metaphorical use of these prepositions constitutes the language means that are available to talk about gaining insights (see Cameron, 2003; Semino, 2008). These prepositions thus do not stand out in the discourse.

The fact that the role of metaphor in communication has been put back on the agenda for metaphor research yields new questions about the pervasiveness of metaphor. That is, although it is clear that metaphor is a frequently occurring phenomenon in natural language use, exhibiting a range of linguistic as well as conceptual properties, our analysis of the examples in (1) and (2) above shows that not all metaphors are used *as* metaphors in communication between language users. It remains as yet unclear how these two types of metaphor use are distributed in discourse, and more specifically across register and word class.

[4] To many, the metaphor "life is like a box of chocolates" may be particularly familiar because it also featured in the 1994 film *Forrest Gump*.

The difference between the metaphors in (1) versus (2) above may be related to the fact that these examples come from different registers. Literature (Example 1) is typically associated with creative, striking figurative language use (e.g., Dorst, 2015; Semino & Steen, 2008), while academic discourse (Example 2), is associated with reporting scientific findings in a clear, objective way (e.g., Herrmann, 2013). The difference between (1) and (2) may also be related to the fact that the metaphors in these examples belong to different word classes. Content words (such as the 'N-of-N' construction 'box of chocolates' in the first example) rather than function words (such as the prepositions in the second example) are associated with the type of metaphor that is used as metaphor in communication (e.g., Cameron, 2003; Goatly, 1997). All of this is further complicated by the fact that registers also differ in their distribution of word classes (e.g., Biber, 1989; Biber & Conrad, 2009). For example, nouns tend to occur more frequently in academic texts and news texts, and less frequently in face-to-face conversations. Verbs, on the other hand, tend to occur more frequently in face-to-face conversations and fiction, and less frequently in academic texts and news texts (e.g., Biber, 1988). This aspect should therefore also to be taken into account when investigating the occurrence of metaphor in communication in relation to the association with register and word class.

The aim of this paper is to investigate the occurrence of words that count as metaphors at the dimensions of language, thought, and communication, in comparison with words count as metaphors at the dimensions of language and thought, but not at the dimension of communication. Specifically, we examine the distribution of these two types of metaphor use across different written and spoken registers, as well as across different word classes.

3.2 Metaphor in communication

The CMT claim about the pervasiveness of metaphor has been investigated in numerous studies (see, e.g., Gibbs, 2008, for an overview). The first linguistic studies applying CMT were typically based on introspection and intuition, in line with the analyses presented by Lakoff and Johnson (1980; e.g., Grady, 1997; Kövecses, 2002; Ritchie, 2003). More recent studies analyse the occurrence of metaphor in natural language use (e.g., Deignan, Littlemore, & Semino, 2013; Low, Todd, Deignan, & Cameron, 2010; MacArthur, Oncins-Martínez, Sánchez-García, & Piquer-Píriz, 2012; see Cameron & Low, 1999). Results of a recent

large-scale corpus analysis showed that, on average, one in every seven and a half words (i.e., 13.3% of all words) across four different registers (academic texts, fiction, news, and face-to-face conversations) is a metaphor (Steen, Dorst, Herrmann, Kaal, Krennmayr, & Pasma, 2010b). Much attention thus has been paid to the linguistic and conceptual analysis of metaphor.

The detailed analysis of the linguistic and conceptual nature of metaphor has led to renewed attention for the special role that metaphor can have in its communicative status *as* metaphor between language users (e.g., Cameron, 2003; Charteris-Black & Musolff, 2003; Goatly, 1997; Müller, 2008; Semino, 2008; Steen, 2008, 2011). In particular, researchers have suggested to distinguish between the types of metaphor use illustrated in (1) versus (2) above in a number of slightly different, yet comparable, ways. Some concentrate on the different functions these two types of metaphors may fulfil in communication (e.g., Charteris-Black & Musolff, 2003; Semino, 2008). Others suggest that the metaphoric meaning of some, but not other, metaphors may be foregrounded by language users in interaction (e.g., Cameron, 2003; Müller, 2008). In this paper, we adopt Deliberate Metaphor Theory (henceforth: DMT), the framework developed by Steen (2008, 2011, 2015) to account for the communicative dimension of metaphor. In DMT, the cognitive-linguistic model of metaphor in language and thought is extended with a third dimension – that of communication. At the dimension of communication, the resulting three-dimensional model makes a distinction between deliberate and non-deliberate metaphor (Steen 2008, 2011; see also Cameron, 1999, 2003). A metaphor is called deliberate when it is used *as* a metaphor in communication between language users. By contrast, a metaphor is called non-deliberate when it is not used *as* metaphor in communication between language users. DMT consequently considers the 'box of chocolates'-metaphor discussed in (1) above as a case of deliberate metaphor, and the metaphors discussed in (2) as cases of non-deliberate metaphor.

Deliberate metaphors work as "perspective changers" (Steen, 2016, p. 116); they provide an external perspective onto the target domain of an utterance or text by drawing attention to the source domain referent of the utterance. DMT predicts that this explicit change of perspective may, in turn, result in the experience of metaphor *as* metaphor in communication between language users (Steen, 2017). By contrast, when a metaphor is non-deliberate, DMT suggests that the source domain of the metaphorical expression is not part of the referential meaning of the utterance in which the metaphor is used (Steen, 2015). Consequently, DMT predicts that non-deliberate metaphors may

not be experienced *as* metaphors in communication between language users (Steen, 2017). DMT thus contains both semiotic and processing aspects.

In this paper, we take a semiotic approach to the identification and analysis of deliberate metaphor. We analyse language use on the basis of texts and transcripts of talk. This implies that we do not analyse language use from the perspective of actual language users and the psychological processes that play a role in their production and reception of (non-)deliberate metaphor. To make explicit that we are exclusively concerned with the analysis of text and transcripts of talk as products, not processes, we use the term 'potentially deliberate metaphor' in the remainder of this paper (see Krennmayr, 2011; Nacey, 2013).

Since its introduction, several studies have used DMT to investigate the presence of deliberate versus non-deliberate metaphor in discourse (e.g., Beger, 2011, 2016; Nacey, 2013; Ng & Koller, 2013; Pasma, 2011; Perrez & Reuchamps, 2014; Tay, 2013). The results of these studies, as well as the results of studies based on some of the related proposals on the role of metaphor in communication (Cameron, 2003; Charteris-Black & Musolff, 2003), provide some first suggestions as to the manifestation of deliberate versus non-deliberate metaphors in discourse.

Firstly, the frequency of deliberate metaphor ranges between 0.3% in news articles about the introduction of the euro in financial newspapers (Charteris-Black & Musolff, 2003), and 10% in primary school discourse (Cameron, 2003)[5], and even up to 27.9% in citizens discourse about Belgian federalism (Perrez & Reuchamps, 2014). Secondly, Cameron (2003) suggests that deliberate metaphors are typically nouns, and that non-deliberate metaphors are typically verbs. Goatly (1997) already pointed in the same direction when claiming that the more 'active' a metaphor is (on his scale from 'dead' to 'active'), the more likely it is to be a noun. And thirdly, results of a corpus-analytical study reported in Steen, Dorst, Herrmann, Kaal, and Krennmayr (2010a)[6] demonstrate that direct metaphors display a distributional

[5] Please note that Charteris-Black & Musolff (2003) distinguish between a semantic and a pragmatic definition of metaphor, and that Cameron (2003) distinguishes between deliberate and conventional metaphors. Despite these terminological differences, the distinctions made by both Charteris-Black & Musolff (2003), and Cameron (2003) point at a similar distinction as the distinction between deliberate and non-deliberate made in DMT.

[6] For reasons of readability, we refer to this publication as Steen et al. (2010a), even though one of the co-authors in Steen et al. (2010b), Pasma, is not a co-author in Steen et al. (2010a).

pattern in discourse that is different from the overall distribution of metaphor as reported in Steen et al. (2010a).[7] Direct metaphors are often part of a simile, in which the metaphorical comparison is signalled by the preposition 'like' or 'as'. Direct metaphors thus "explicitly [instruct] addressees to set up a cross-domain comparison between the referents designated by the words in the discourse" (Steen et al. 2010a, p. 786). Because of the explicit comparison between source and target domain referents, direct metaphors can be seen as a typical manifestation of deliberate metaphor in language use. The results of Steen et al.'s (2010a) study consequently suggest that deliberate metaphor may be relatively frequent in fiction and news texts, and relatively infrequent in academic texts and face-to-face conversations (see also Dorst, 2015).

Yet, the analysis of the role that metaphor plays in communication often has been carried out in a somewhat impressionistic fashion. That is, the distinction between deliberate and non-deliberate metaphor is typically not worked out in detail in the form of operational definitions or identification criteria (see Beger, 2011; Nacey, 2013; Ng & Koller, 2013; Steen, 2011). As a consequence, it is difficult to compare the outcomes of the different studies to each other, and, as such, to draw conclusions about the frequency and distribution of deliberate metaphor in language use.

In this paper, we aim to systematically investigate the frequency and distribution of deliberate versus non-deliberate metaphor across register and word class. To this end, we start from an operational definition of potentially deliberate metaphor in which its core characteristic, attention to the source domain, is operationalised in such a way that it can be identified in the structures of language. Consequently, we operationalise potentially deliberate metaphor as follows: "A metaphor is potentially deliberate when the source domain of the metaphor is part of the referential meaning of the utterance in which it is used" (see Chapter 2). This definition is subsequently related to an identification criterion that is part of a step-by-step method to identify all potentially deliberate versus non-deliberate metaphors in natural language use. Our research question in this paper is as follows:

[7] Steen et al. (2010a, 2010b) distinguish between three types of metaphor in discourse: 1) indirect metaphors, when a lexical unit itself is used metaphorically (e.g., the prepositions in example (2) in this paper); 2) direct metaphors, when a lexical unit is not used metaphorically itself, but expresses a cross-domain mapping in the form of a comparison (see example (1) in this paper); 3) implicit metaphors, when a lexical unit refers back to an antecedent that is used metaphorically (e.g., 'allow a minority to capture power, and then use *it*').

Research Question: To what extent does the distribution of potentially deliberate metaphor differ from the distribution of non-deliberate metaphor across register and word class?

3.3 Method

3.3.1 Materials

The analyses in this paper are based on the VU Amsterdam Metaphor Corpus (hereafter: VUAMC). This corpus contains almost 190,000 lexical units[8] from four different registers (academic texts, news texts, fiction, and face-to-face conversations), selected from the British National Corpus Baby edition. All lexical units in the VUAMC are annotated for linguistic metaphor by means of the Metaphor Identification Procedure Vrije Universiteit (MIPVU), an explicit, reliable, step-by-step procedure for the identification of metaphor in discourse (Steen et al., 2010b; see also Pragglejaz Group, 2007). Table 3.1 displays the distribution of all metaphors (MRWs, for 'metaphor-related words'; see Steen et al., 2010b) versus non-metaphors (non-MRWs) in the VUAMC.

To investigate the distribution of potentially deliberate versus non-deliberate metaphor in this paper, only the lexical units that were identified as related to metaphor on the basis of MIPVU were selected from the corpus, yielding a total of 24,762 metaphor-related lexical units for analysis. These are distributed across the four registers as follows: 8,803 MRWs (35.55% of all analysed MRWs) come from academic texts, 3,515 MRWs (14.19%) come from face-to-face conversations, 5,127 MRWs (20.71%) come from fiction, and 7,317 MRWs (29.55%) come from news texts.

3.3.2 Procedure

Potentially deliberate metaphors were identified by means of the Deliberate Metaphor Identification Procedure (henceforth: DMIP), a method for the

[8] The term 'lexical unit' is used instead of 'word' because sometimes a unit of analysis consists of more than one word. This is the case, for instance, for phrasal verbs and multiword expressions (see Steen et al., 2010a, p. 26–32, for details).

systematic and reliable identification of potentially deliberate metaphor in language use from a semiotic perspective (see Chapter 2, for a detailed explanation). DMIP consists of a series of steps that analysts have to go through to determine whether a lexical unit can be identified as a potentially deliberate metaphor. These steps are presented in Figure 3.1.

Table 3.1

Distribution of metaphor-related (MRW) versus non-metaphor-related (non-MRW) words per register in the VU Amsterdam Metaphor Corpus.

	Relation to metaphor		
	Non-MRW	MRW	Total
Register	*n*	*n*	*N*
Academic	40,510[x]	8,803[y]	49,313
Conversation	44,421[y]	3,515[x]	47,936
Fiction	39,510[y]	5,127[x]	44,637
News	37,470[x]	7,317[y]	44,787
Total	161,911	24,762	186,673

Note. [x], [y] = the frequency of non-metaphor-related or metaphor-related words was [x] lower, or [y] higher than might be expected on the basis of chance, with alpha set at .001 (adjusted standardised residuals at least < -3.29 or > 3.29). Please note that the numbers reported in Table 3.1 differ slightly from those reported in Steen et al. (2010b). These small differences are the result of a corpus clean-up project that was carried out in 2011 to increase the consistency of the corpus annotations (see Dorst, Reijnierse, & Venhuizen, 2013). The association between register and relation to metaphor based on these 'cleaned-up' results remained significant: χ^2 (3) = 2,858.02, p < .001, Cramer's V = .12.

First, analysts have to read the complete text to establish a general understanding of its content (step 1). Then, they have to determine whether a lexical unit counts as a metaphor by applying MIPVU (step 2; Steen et al., 2010b). In the study reported in this paper, this step is redundant because the corpus on which our analyses are based was already coded for all metaphor-related words by means of MIPVU. Yet, most researchers wanting to apply DMIP may not have such a pre-coded corpus at their disposal, which is why MIPVU is part of the identification procedure for potentially deliberate metaphor.

Once all lexical units in a text are annotated for metaphor by means of MIPVU, the identification of potentially deliberate metaphor can take place. To this end, analysts look at the first metaphor-related lexical unit in the text (step 3). In step 4, the analyst must determine whether the source domain of the MRW is part of the referential meaning of the utterance in which the MRW is used. To ensure reproducibility and to prevent the intuitions of the analyst to interfere in this analysis, corpus-based dictionaries are used to establish the various contemporary word meanings of lexical units. In line with Steen et al. (2010b), we recommend using the *Macmillan English Dictionary* and the *Longman Dictionary of Contemporary English* when applying DMIP. Finally, if an MRW is identified as potentially deliberate, the analyst is asked to describe how the source domain of the metaphor plays a role in the referential meaning of the utterance in which the MRW is used (step 5).

1. Read the entire text to get a general idea of what the text is about.
2. Apply the Metaphor Identification Procedure Vrije Universiteit (MIPVU) to find all metaphorical lexical units (metaphor-related words, or MRWs; see Steen et al., 2010, for detailed instructions).
3. Look at the first MRW.
4. Determine whether the source domain of the MRW is part of the referential meaning of the utterance in which the MRW is used.
    a. If 'yes', mark the MRW as potentially deliberate and proceed to step 5.
    b. If 'no', mark the MRW as non-deliberate and proceed to step 6.
    c. In case of doubt, mark the MRW as potentially deliberate, and add the code WIDLII (When In Doubt Leave It In; see Steen et al., 2010). Then, proceed to step 5.
5. If the MRW is coded as potentially deliberate in step 4, describe *how* the source domain of the MRW is part of the referential meaning of the utterance.
6. Look at the next MRW.

Figure 3.1 *The steps of DMIP.*

How DMIP works in practice is illustrated by means of an example analysis from the VUAMC. This example, (3), contains one metaphor-related word as identified by MIPVU, which is indicated below by a superscript 'MRW' tag. The example comes from a newspaper article in which a journalist describes a visit to the

Anglo-Scottish border area called 'Cheviot Hills'. The headline of the article is as follows:

(3) Christopher Somerville sees how woodland has usurped[MRW] the ancient cattle thieves of the Cheviot Hills.

(VUAMC-AHC-60)

In (3), the verb 'usurped' is identified as a metaphor-related word by means of MIPVU. This verb comes from the domain of people, which is different than the target domain of this utterance, which is concerned with the description of a natural environment. Consequently 'usurped' is also related to metaphor at the dimension of thought: the concept USURP comes from a different domain than the target domain of the utterance.

To determine whether the MRW 'usurped' counts as a case of potentially deliberate metaphor, we examine whether there are cues that suggest that the source domain of people plays a role in the referential meaning of the utterance. For the verb 'usurp' only one sense description is available in the dictionary: "to take a job or position that belongs to someone else without having the right to do this" (*Macmillan*). This meaning of the verb does not match the target domain of the utterance. No conventionalised target domain meaning is thus available, indicating that a new perspective on the target domain is introduced. Consequently, for a coherent representation of the referential meaning of the utterance, the source domain is present as a distinct referent in the state of affairs designated by the utterance. In this way, DMIP identifies 'usurp' as a case of potentially deliberate metaphor. The referential meaning of (3) can be spelled out as: "... how woodland has taken the place of the ancient cattle thieves in a way that is similar to a person taking the job or position of someone else..."

3.3.3 Reliability

To examine the reliability of DMIP, an inter-rater reliability test was performed. In this test, two coders (the first author of this paper and a research assistant who had been involved in testing and improving the method) independently applied DMIP to 900 randomly selected metaphor-related words from the VUAMC. Results show an inter-rater agreement of 97.33% in the classification of these 900 MRWs as potentially deliberate or non-deliberate. The associated

Cohen's kappa (κ = .69) indicates "substantial agreement" (Landis & Koch, 1977, p. 165) between the two coders. This indicates that DMIP is a reliable method for the identification of potentially deliberate metaphor. Based on this result, the first author of this paper applied DMIP to the remaining 23,862 MRWs in the corpus.

3.4 Results

3.4.1 Descriptive statistics

The application of DMIP to all metaphor-related words in the VUAMC yielded 1,079 potentially deliberate metaphors out of a total of 24,762 metaphor-related words, which corresponds to 4.36% of the data (See Table 3.2).[9] The majority of metaphor-related words in the VUAMC are thus used non-deliberately. In relation to the complete VUAMC, containing a total of 186,673 lexical units, potentially deliberate metaphors account for 0.58% of the data. Steen et al. (2010b) found that one in every seven and a half lexical units was related to metaphor (regardless of deliberateness). Our results further specify this picture by revealing that around one in every 172 lexical units in the VUAMC counts as metaphor at the dimension of communication because it is potentially used deliberately as a metaphor in communication between language users.

Prior to the analysis of the distribution of potentially deliberate metaphor in the VUAMC across different registers and word classes, a three-way contingency table was created to check for compatibility with assumptions about statistical testing. This table contained the same eight word classes as Steen et al. (2010b) used in their study (i.e., adjectives, adverbs, conjunctions, determiners, nouns, prepositions, verbs, and a remainder category containing pronouns, numbers, etc.), as well as the variables 'register' (academic,

[9] A number of metaphorical lexical units were difficult to classify, and were therefore coded as WIDLII (When In Doubt Leave It In). This concerns a total of 142 cases (13.16% of the total number of potentially deliberate metaphors in the VUAMC). To be as inclusive as possible, all WIDLIIs were counted as potentially deliberate metaphors in the quantitative analysis (see Steen et al. 2010b, for a similar approach for all metaphor-related words coded as WIDLII). Excluding WIDLII from the analysis did not affect the results. However, for the sake of transparency, a complete overview of this alternative analysis is available on the Open Science Framework (OSF) at http://bit.ly/2kxOJu6.

conversations, fiction, and news), and 'potentially deliberate metaphor' (potentially deliberate, non-deliberate).

The contingency table showed low expected counts in some cells, which implied that the assumption regarding expected frequencies for carrying out a chi-square analysis was violated. Specifically, four cells in the contingency table contained expected counts of less than five (but more than one) potentially deliberate metaphors: potentially deliberate determiners in fiction and news, and potentially deliberate lexical units in the remainder category in academic and news. Another two cells contained expected counts of less than one potentially deliberate metaphor: potentially deliberate lexical units in the remainder category in conversation and fiction. Moreover, conjunctions were never used as potentially deliberate metaphors in any of the four registers, so these cells were completely empty.

We consequently decided to reduce the number of word classes to six: adjectives, adverbs, nouns, verbs, prepositions, and a remainder category with all other word classes (including determiners and conjunctions). Two cells in the resulting contingency table had an expected frequency of less than five (but more than one) potentially deliberate lexical units: the remainder category in fiction and in news. We accepted the potential loss of test power that resulted from this decision, and performed Fischer's exact test (which is accurate for expected frequencies of less than five; Field, 2013) for the remainder category in the relevant chi-square analysis.

3.4.2 Main analysis

The goal of this paper was to investigate to which extent the distribution of potentially deliberate metaphor differs from the distribution of non-deliberate metaphor across different registers and word classes. To answer this research question, a hierarchical log-linear analysis was conducted with 'potentially deliberate metaphor' (potentially deliberate, non-deliberate), 'register' (academic, conversations, fiction, news), and 'word class' (adjectives, adverbs, nouns, verbs, prepositions, remainder) as predictors. This three-way analysis produced a final model that included all effects. The likelihood ratio of the model was $\chi^2(0) = 0$, $p = 1$. This indicated that the highest-order effect of potentially deliberate metaphor * register * word class was significant (χ^2 (15) = 41.86, $p < .001$). Table 3.2 displays the distribution of the non-deliberate and potentially deliberate metaphors per register for each of the six word classes.

These results thus indicated that the interaction between potentially deliberate metaphor and register varied across word class.

Before we examine the significant three-way interaction, we first discuss the three significant two-way interactions (register * word class, potentially deliberate metaphor * word class, and potentially deliberate metaphor * register). The first of these, between register and word class, is linked to the results of previous research, showing that registers in general differ in their distribution of word classes (see Biber, 1989; Biber & Conrad, 2009, for similar observations). The second and third two-way interactions yield new findings that provide insight into the distribution of potentially deliberate metaphor across word class and register, respectively. These results are also compared to the distribution of all MRWs across register and word classes, as reported in Steen et al. (2010a, 2010b).

The first separate chi-square test investigated the interaction between register and word class. Please note that this first two-way interaction is based on all 24,762 metaphorical lexical units in our data set, not on the entire VUAMC. The results of this test showed that the six word classes were not distributed equally across the four registers (χ^2 (15) = 1,084.85, p < .001, Cramer's V = .12), although the association was "weak" (Rea & Parker, 2014, p. 219).[10] These findings match our expectations because we know from previous research that word classes are not distributed evenly across registers (e.g., Biber, 1989).

Inspection of the adjusted standardised residuals showed that metaphor-related adjectives were used less frequently in academic texts and face-to-face conversations, and more frequently in fiction and news than might be expected by chance. Metaphor-related adverbs were used less frequently than expected in academic texts and news, and more frequently in face-to-face conversations and fiction. Metaphor-related nouns were used less frequently than expected in face-to-face conversations and fiction, and more frequently than expected in academic texts and news. Metaphor-related verbs were used less often than might be expected in academic texts. They were used more often than expected in the three other registers. Metaphor-related prepositions were used less frequently than expected in face-to-face conversations and fiction, and more frequently than expected in academic texts. In news, metaphor-related prepositions did not differ from the overall distribution. Finally, metaphor-related

[10] In the remainder of this paper, all further interpretations of the strength of the effect size, as measured by Cramer's V, are also based on terminology suggested by Rea and Parker (2014).

lexical units from the remainder category were used less frequently than expected in academic texts and news, and more frequently in face-to-face conversations. The distribution of this word class in fiction did not differ from the general distribution of remainder items in the data set. An overview of these findings is displayed in Table 3.2.

These patterns can be linked to Biber's (e.g., 1989), and Biber and Conrad's (2009) multidimensional analysis of register variation. For instance, the more informational registers, such as academic texts, make use of nouns and prepositions to provide information. Because this information is often about abstract entities, the nouns and prepositions are more frequently used in their metaphorical sense than in their non-metaphorical sense (see, e.g., Steen et al., 2010b; see also Herrmann, 2013). This is reflected in our analysis in which we exclusively focused on metaphor-related lexical units. We connect these (and further) observations to the distribution of potentially deliberate versus non-deliberate metaphor across the four registers and the six word classes under investigation upon examination of the three-way interaction below.

The second two-way interaction investigated the association between potentially deliberate metaphor and word class. This association was also statistically significant, yet "weak" (χ^2 (5) = 925.45, p < .001, Cramer's V = .19). Potentially deliberate metaphor was thus not distributed equally across the six word classes. Inspection of the adjusted standardised residuals showed that metaphor-related adjectives and nouns were more frequently potentially deliberate than expected. Conversely, adverbs, verbs, prepositions, and the remainder category were less frequently used as potentially deliberate metaphors (versus non-deliberate metaphors) than expected. An overview of these findings is displayed in Table 3.2.

These are new findings that cannot be compared to earlier systematic findings about the relation between potentially deliberate metaphor and word class. They can be compared, though, to findings by Cameron (2003) as well as by Goatly (1997), who both argued that deliberate metaphors are typically nouns. The current results can also be compared to Cameron's (2003) finding that non-deliberate (or, in Cameron's terms 'conventionalized') metaphors are typically verbs. Our results confirm these findings, but they also further specify them. Not only nouns, but also adjectives are more frequently used as potentially deliberate metaphors. And not only verbs, but also adverbs, prepositions, and items in the remainder category are more frequently used as

Table 3.2

Distribution of the non-deliberate and potentially deliberate metaphors across register by word class.

		Register				
		Academic	Conversation	Fiction	News	Total
Word class	**Type of metaphor**	*n*	*n*	*n*	*n*	*N*
Adjective	Non-deliberate	739[y]	213	479[x]	702	2,133[c]
	Potentially deliberate	26[x]	10	64[y]	67	167[d]
	Total	765[a]	223[a]	543[b]	769[b]	2,300
Adverb	Non-deliberate	247	276	265	223[x]	1,011[d]
	Potentially deliberate	3	3	6	13[y]	25[c]
	Total	250[a]	279[b]	271[b]	236[a]	1,036
Noun	Non-deliberate	2,087[y]	382[y]	807[x]	1,382[x]	4,658[c]
	Potentially deliberate	118[x]	28[x]	185[y]	254[y]	585[d]
	Total	2,205[b]	410[a]	992[a]	1,636[b]	5,243
Verb	Non-deliberate	2,073[y]	1,049[y]	1,420[x]	2,017[x]	6,559[d]
	Potentially deliberate	41[x]	5[x]	67[y]	101[y]	214[c]
	Total	2,114[a]	1,054[b]	1,487[b]	2,118[b]	6,773
Preposition	Non-deliberate	2,728[y]	840[y]	1,356[x]	2,060[x]	6,984[d]
	Potentially deliberate	6[x]	2[x]	22[y]	36[y]	66[c]
	Total	2,734[b]	842[a]	1,378[a]	2,096	7,050
Remainder	Non-deliberate	733[y]	707[y]	450	448[x]	2,338[d]
	Potentially deliberate	2[x]	0[x]	6	14[y]	22[c]
	Total	735[a]	707[b]	456	462[a]	2,360
Total	Non-deliberate	8,607[f]	3,467[f]	4,777[e]	6,832[e]	23,683
	Potentially deliberate	196[e]	48[e]	350[f]	485[f]	1,079
	Total	8,803	3,515	5,127	7,317	24,762

Note. [a], [b] = analysis of register * word class; the frequency was [a] lower, or [b] higher than might be expected on the basis of chance, with alpha set at .05 (adjusted standardised residuals at least < -1.96 or > 1.96). [c], [d] = analysis of metaphor * word class; the frequency was [c] lower, or [d] higher than might be expected on the basis of chance, with alpha set at .05 (adjusted standardised residuals at least < -1.96 or > 1.96). [e], [f] = analysis of metaphor * register; the frequency was [e] lower, or [f] higher than might be expected on the basis of chance, with alpha set at .05 (adjusted standardised residuals at least < -1.96 or > 1.96). [x], [y] = analysis of metaphor * register per word class; the frequency was [x] lower, or [y] higher than might be expected on the basis of chance, with alpha set at .05 (adjusted standardised residuals at least < -1.96 or > 1.96).

non-deliberate metaphors than expected. These findings are further interpreted within the framework of the three-way interaction between potentially deliberate metaphor, register, and word class below.

The third two-way interaction that we investigated was that between potentially deliberate metaphor and register. The chi-square test investigating this relation also showed a significant yet "weak" association between the two variables (χ^2 (3) = 336.96, p < .001, Cramer's V = .12). This finding can be compared to the interaction between register and metaphor as found by Steen et al. (2010a, 2010b). Specifically, our results further specify the pattern found for the interaction between direct (versus indirect and implicit) metaphor across registers reported in Steen et al. (2010a). When taking into account the distribution of all potentially deliberate metaphors across the four registers (rather than looking at direct metaphors alone), we find the same pattern as Steen et al. (2010a) found for direct metaphor.

That is, inspection of the adjusted standardised residuals shows that in both news texts and fiction, potentially deliberate metaphor (versus non-deliberate metaphor) was used more frequently than expected. Conversely, in academic texts and face-to-face conversations, potentially deliberate metaphor (versus non-deliberate metaphor) was used less frequently than expected. An overview of these findings is displayed in Table 3.2, and these results are interpreted within the framework of the three-way interaction which is discussed next.

As was pointed out at the beginning of this section, the log-linear analysis containing all three variables showed that the highest-order three-way interaction between potentially deliberate metaphor, register, and word class was statistically significant. Given our main interest in the relation between potentially deliberate metaphor and register, this effect was broken down to specifically investigate the interaction between potentially deliberate metaphor and register for each of the six word classes. Separate chi-square tests were therefore performed that investigated the interaction between potentially deliberate metaphor and register for each of the six word classes.

The analyses for nouns (χ^2 (3) = 170.39, p < .001, Cramer's V = .18), verbs (χ^2 (3) = 61.85, p < .001, Cramer's V = .10) and prepositions (χ^2 (3) =39.85, p < .001, Cramer's V = .08) showed a statistically significant, yet "weak", association between register and (non-) deliberate metaphor. In these word classes, metaphorically used words were more frequently potentially deliberate as compared to non-deliberate in news texts and fiction, and less frequently potentially deliberate in academic texts and face-to-face conversations than

might be expected by chance. As such, these word classes thus displayed the same pattern as the overall interaction between potentially deliberate metaphor and register discussed earlier.

For adjectives, adverbs, and metaphorically used words in the remainder category, however, this pattern was different. For adjectives, the distribution of potentially deliberate metaphors differed significantly between the registers (χ^2 (3) = 38.42, p < .001, Cramer's V = .13), yet the association was "weak". Inspection of the adjusted standardised residuals showed that academic texts contained fewer potentially deliberate (versus non-deliberate) adjectives than expected. Fiction, on the other hand, contained more potentially deliberate (versus non-deliberate) adjectives. This pattern is the same as in the overall interaction between register and potentially deliberate metaphor. Face-to-face conversations and news texts, however, did not show that same pattern for metaphorical adjectives. In these registers, the distribution of potentially deliberate (versus non-deliberate) metaphorical adjectives was not significantly different from the overall distribution of metaphorical adjectives in the corpus.

We also found a statistically significant, yet "weak", association between potentially deliberate metaphorically used adverbs and register (χ^2 (3) = 13.33, p = .004, Cramer's V = .11). Inspection of the adjusted standardised residuals showed that only news texts displayed the same pattern as the overall interaction between potentially deliberate metaphor and register. That is, news texts contained more potentially deliberate metaphorical adverbs (compared to non-deliberate metaphorical adverbs) than might be expected by chance. In the three other registers (academic texts, face-to-face conversations, and fiction), the distribution of potentially deliberate versus non-deliberate adverbs did not differ significantly from the overall distribution.

Finally, for lexical units in the remainder category, Fisher's exact test was used to compute the association between potentially deliberate metaphor and register, because two out of the eight cells for metaphorical remainder items had expected counts of less than five (potentially deliberate MRWs in academic texts and news). The results showed that the distribution of potentially deliberate metaphorical remainder items differed significantly between the registers (p < .001). Inspection of the adjusted standardised residuals showed that potentially deliberate metaphorically used words in the remainder category occurred more frequently than expected in news, compared to non-deliberate metaphors. Moreover, potentially deliberate remainder items occurred less frequently than expected in face-to-face conversations and academic texts. This was similar to the general pattern found for the distribution of potentially

deliberate metaphor across register. By contrast, the distribution of potentially deliberate metaphorical remainder items in fiction was not significantly different from the overall distribution of metaphorical remainder items in the corpus. An overview of these findings is displayed in Table 3.2. The results of our analysis can now be interpreted in more detail.

3.5 Conclusion and discussion

In this paper, we investigated the occurrence of potentially deliberate (versus non-deliberate) metaphor across four different registers and six different word classes. To this end, we analysed all 24,762 metaphor-related words in the VUAMC with DMIP, a method for the reliable and systematic identification of potentially deliberate metaphor in language use (see Chapter 2). The results of this analysis showed that 4.36% of all metaphor-related words in the VUAMC were potentially deliberate. That is, one in every 23 MRWs in our corpus displayed one or more cues indicating that the source domain of the MRW is part of the referential meaning of the utterance in which that MRW is used. This means that the bulk of what counts as metaphorical at the dimensions of language and thought does not count as metaphorical at the third dimension of metaphor in DMT (Steen, 2008, 2011, 2015), namely that of communication.

When further specifying our results, a pattern emerged according to which the four registers under investigation (academic texts, face-to-face conversations, fiction, and news texts) can be split into two groups. News texts and fiction, on the one hand, contained significantly more potentially deliberate metaphors than expected. By contrast, academic texts and face-to-face conversations contained significantly fewer potentially deliberate metaphors than expected.

These results differ from the results of previous research investigating the distribution of all metaphor-related words across the same four registers (Steen et al., 2010b). Steen et al. (2010b) demonstrated that academic texts and news texts contained significantly more metaphorically-used (versus non-metaphorically-used) words than expected. By contrast, fiction and face-to-face conversations contained significantly fewer metaphor-related words than expected. At the same time, our results confirm and further specify the results of previous research investigating the distribution of direct versus indirect metaphor across register as reported by Steen et al. (2010a). Our results, like the results for direct metaphor obtained by Steen et al. (2010a), showed that

fiction rather than academic texts is the most 'metaphorical' of the four registers when it comes to metaphor in communication, because fiction contains the highest percentage of MRWs that are used *as* metaphors between language users of all four registers under investigation.

Table 3.3 displays a systematic comparison between the overall distribution of all metaphor-related words (based on the results of Steen et al., 2010b; indicated, in Table 3.3, by "GM", for "general distribution of metaphor-related words") and the distribution of potentially deliberate metaphors (based on the results presented in the current paper; indicated, in Table 3.3, by "DM", for "distribution of potentially deliberate metaphors"), across registers per word class. The overview in Table 3.3 roughly displays two different patterns. The first pattern shows for academic texts and fiction, while the second pattern shows for face-to-face conversations and news texts.

Table 3.3

Comparison of the general distribution of metaphor-related words ("GM"; based on the results of Steen et al., 2010b) and the distribution of potentially deliberate metaphors ("DM"; based on the analyses in the current paper) across register per word class.

	Register							
	Academic		Conversations		Fiction		News	
Word class	GM	DM	GM	DM	GM	DM	GM	DM
Adjective	-	-	-	.	.	+	+	.
Adverb	+	.	-	.	.	.	+	+
Noun	+	-	-	-	-	+	.	+
Verb	+	-	-	-	-	+	+	+
Preposition	+	-	-	-	-	+	+	+
Remainder	+	-	-	-	-	.	.	+
Overall	+	-	-	-	-	+	+	+

Note. GM = "general distribution of metaphor-related words"; DM = "distribution of potentially deliberate metaphors". "+", "-" = the frequency was "+" significantly higher, or "-" significantly lower than might be expected on the basis of chance, with alpha set at .05 (adjusted standardised residuals at least < -1.96 or > 1.96). And "." = the frequency was equal to the general distribution, with alpha set at .05 (adjusted standardised residuals at least < -1.96 or > 1.96).

In academic texts, all word classes that contained significantly more metaphor-related words than expected in the analyses of Steen et al. (2010a) contained significantly fewer potentially deliberate metaphors than expected in the analyses carried out in the current paper. Exceptions in academic texts are adjectives (significantly fewer cases than expected in both analyses) and adverbs (more cases in Steen et al., 2010b, no deviation from the general distribution in the analysis reported in this paper). For fiction, this pattern is reversed: all word classes that contained significantly fewer metaphor-related words than expected in the analyses of Steen et al. (2010b), contained significantly more potentially deliberate metaphors than expected in the analyses carried out in the current paper. Exceptions in fiction are adjectives (no deviation from the general distribution in Steen et al., 2010b, significantly more cases than expected in the current analysis), adverbs (no deviation from the general distribution in both analyses), and lexical units in the remainder category (significantly fewer cases than expected in Steen et al., 2010b, no deviation from the general distribution in the current analysis).

The second pattern shows for face-to-face conversations and news, where such contrast between the two analyses does not occur. That is, all word classes in face-to-face conversations contained significantly fewer cases of both all metaphor-related (versus non-metaphor-related) words and of potentially deliberate (versus non-deliberate) metaphors than expected. The only difference between the two analyses can be found in adjectives and adverbs, for which the distribution of potentially deliberate metaphors does not differ from the general distribution. In news, all word classes contained significantly more metaphor-related words than expected in the analysis of all metaphor-related words, except nouns and lexical items in the remainder category. In the analysis reported in the current paper, all word classes contained significantly more potentially deliberate metaphors than expected, except for adjectives, which did not differ from the general distribution.

By adding the distinction between potentially deliberate and non-deliberate metaphor to the picture, our analysis provides further support for the general, intuitive idea that some registers are 'more metaphorical' than others (e.g., Dorst, 2015). That is, the reason why some registers, including fiction (Dorst, 2015; Lodge, 1977; Semino & Steen, 2008) and (in part) news texts (e.g., Semino, 2008) 'feel' more metaphorical than others may be because they contain more potentially deliberate metaphors. Because potentially deliberate metaphors are those metaphors that are used as metaphors in communication between language users, they may be more noticeable than non-deliberate

metaphors, which do not have such a function (see, e.g., Steen, 2013, 2017). Whether this is indeed the case when actual language users process (either in production or reception) potentially deliberate versus non-deliberate metaphor is a question that subsequent psycholinguistic and psychological research should test. On the basis of the semiotic analyses that we carried out in this paper, however, we can explain the observed differences between the occurrence of potentially deliberate metaphor across the four registers and the six word classes. In this way, our findings can also be seen as an addition to the extensive literature on register analysis (Biber, 1989; Biber & Conrad, 2009; Biber, Johansson, Leech, Conrad, & Finegan, 1999).

Our analysis showed that fiction and news contain significantly more potentially deliberate (versus non-deliberate) metaphors compared to the overall distribution of (non-) deliberate metaphor in the corpus. In both registers, this pattern was found in nouns, verbs, and prepositions. For fiction, moreover, adjectives also displayed this pattern. The frequent use of potentially deliberate adjectives, nouns, and verbs can be linked to the overall communicative goal of fiction, which Biber et al. (1999, p. 16) call "pleasure reading". Fiction is generally known to contain colourful, creative language. Previous studies have already pointed out that metaphors in fiction may be 'different' than metaphors in other registers (e.g., Dorst, 2011, 2015; Semino, 2008; Semino & Steen, 2008). The use of metaphor *as* metaphor, to present a different or new perspective on the topic of a text, can be seen as one of the key manifestations of this 'differentness' of metaphor use in fiction. This particularly applies to content words (nouns, verbs, and adjectives). The frequent use of potentially deliberate metaphorical prepositions in fiction is different, since prepositions are function words. A look at the prepositions in the corpus that were coded as potentially deliberate in fiction, showed that these were often either part of wordplay or of a direct metaphor, for instance in "... moving soundlessly from cover to cover like a tiger *in* a steel jungle" (VUAMC-BPA-14; emphasis added).

A similar interpretation can be given for news, where the frequent potentially deliberate metaphorical use of nouns and verbs might be related to journalists' wish to "pimp up their texts" (Steen et al., 2010b, p. 216), and to the idea that news texts often have to grab the reader's attention (e.g., Brône & Coulson, 2010; Semino, 2008; White, 2011). In contrast to fiction, the distribution of (non)-deliberate adjectives did not differ from the overall distribution in news texts. However, both adverbs and lexical items in the remainder category were more frequently used potentially deliberate (versus non-deliberate) in news texts. Given that only thirteen adverbs and only fourteen

remainder items in news were identified as potentially deliberate, it is difficult to interpret these findings. A look at the adverbs showed, again, that they were either part of a direct metaphor, or of wordplay, for instance "the western has galloped *back* to centre screen" (VUAMC-A2D-05; emphasis added; see also Chapter 2). Inspection of the remainder category showed that the majority of the potentially deliberate lexical units in this category in news texts were either part of a direct metaphor, or a case of implicit metaphor, for instance 'the only adjustments you need to make are mental *ones*' (VUAMC-A38-01; emphasis added).

In contrast to fiction and news, academic texts and face-to-face conversations contained significantly fewer potentially deliberate (versus non-deliberate) metaphors than expected. This pattern was also found in nouns, verbs, and prepositions, as well as in the remainder category. In academic texts, moreover, adjectives were also less frequently potentially deliberate. This observation can be linked to the technical, informational nature of the register (Biber, 1988; Herrmann, 2013). The academic texts in the VUAMC treat fairly abstract subjects such as electromagnetics and law. Moreover, the texts mostly come from scientific publications in which researchers report their findings to their peers (i.e., other researchers), rather than to a general audience or to, for instance, schoolchildren. In this type of academic texts, there is often simply no other way to talk about the abstract scientific topics and processes at hand than by means of metaphor, making non-deliberate metaphor a frequent phenomenon.

For face-to-face conversations, our findings can also be linked to the overall communicative purpose of the register: personal communication (Biber et al., 1999). The conversations in the corpus were generally so basic – going shopping, making homework, having breakfast – that there were hardly any metaphors used, let alone metaphors that introduced new or different perspectives onto the topic of the conversation. This may also be connected to the overall unplanned nature of casual, face-to-face conversations (e.g., Kaal, 2012). That is not to say, though, that similar patterns will be found in other spoken registers. In fact, metaphor has been shown to be frequently used in, for instance, parliamentary debates (e.g., Charteris-Black, 2006), primary school classroom discourse (Cameron, 2003), and psychotherapeutic talk (e.g., Tay, 2013).

In all, the differing distribution of potentially deliberate metaphor across registers and word class can be explained by referring to the overall communicative goals of the type of registers concerned (see Biber et al., 1999),

as well as to the role of the different word classes in those registers. This is not to say, however, that the same story will (necessarily) hold for different subregisters of academic discourse (e.g., popular science versus scholarly journals), conversations (e.g., private versus public conversations), news texts (e.g., reportage versus editorial), and fiction (e.g., mystery fiction versus romance). In fact, potentially deliberate metaphor is regularly used in college lectures (Beger, 2011, 2016), for example, which are a combination of spoken interaction and academic discourse. And in certain forms of spoken discourse that are more planned than casual conversations, such as political speeches, potentially deliberate metaphors likely also play a bigger role (e.g., Goatly, 1997).

Furthermore, subsequent analyses will have to show whether the nature of the potentially deliberate metaphors used in news versus fiction differs, and if so, how. Fiction may, for instance, contain more explicit metaphorical comparisons (such as similes with 'like' and 'as'; see, e.g., Dorst, 2011). By contrast, news may contain more instances of wordplay (see, e.g., Semino, 2008). Such further analyses can also investigate the reasons for the infrequent use of potentially deliberate metaphors in academic texts and face-to-face conversations. All of this will, in turn, yield a more encompassing understanding of the use and distribution of potentially deliberate as well as non-deliberate metaphor in language use.

The analyses in this paper can be seen as a first systematic, semiotic, corpus-analytical application of DMT (Steen, 2008, 2011, 2015). By operationalising deliberate metaphor for semiotic analysis, and subsequently analysing almost 25,000 metaphor-related words, this study provides new insights into the special use of metaphor across register (see Steen et al., 2010b). The results can be used to formulate more precise hypotheses to test the psychological reality of potentially deliberate metaphors for the average language user (see Gibbs, 2015; Steen, 2015). In this way, our results can be used to further develop DMT, and to further investigate how DMT relates to similar, related models of metaphor, most notably those developed by Cameron (2003), Charteris-Black & Musolff (2003), Müller (2008; see Müller, 2016), and Goatly (1997; see also Deignan, 2005).

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Chapter 4

On metaphorical views, dynamite, and doodlings: Functions of domain adjectives in metaphorical domain constructions[1,2]

Abstract

This paper offers a systematic investigation of the role of adjectives as metaphor signals in metaphorical domain constructions (MDCs) such as 'budgetary anorexia' and 'economic crash', within the framework of the distinction between potentially deliberate and non-deliberate metaphor (e.g., Steen, 2008, 2011b, 2015). To this end, we analyse all MDCs in the VU Amsterdam Metaphor Corpus. Results of our analyses demonstrate that domain adjectives in MDCs do not by definition constitute signals of metaphor. Consequently, not all nouns in MDCs are identified as potentially deliberate metaphors. We distinguish between three different functions of domain adjectives: 1) signal of novel metaphor; 2) signal of conventional metaphor; 3) non-signal. The analyses in this paper provide new insights into both the role of domain adjectives in MDCs, and the position of MDCs as a typical manifestation of potentially deliberate metaphor.

[1] A slightly modified version of this chapter has been submitted as: Reijnierse, W.G., Burgers, C., Krennmayr, T., and Steen, G.J. (accepted, pending revisions). On metaphorical views, dynamite, and doodlings: Functions of domain adjectives in metaphorical domain constructions.

[2] The checklist for determining whether adjectives count as attributive classifying topical adjectives, as well as the data and data-analytical procedures of the reliability test reported in this paper are publicly accessible on the Open Science Framework (OSF) at http://bit.ly/2IhIzv8.

4.1 Introduction

In March 2013, columnist Rosanne Hertzberger wrote a column in the Dutch quality newspaper *NRC Handelsblad* in which she summarised the state of the Dutch economy as follows:

(1) In spite of a number of years of budgetary anorexia, the economy is still deteriorating, and unemployment is increasing.[3]

(Hertzberger, 2013)

In (1), Hertzberger makes use of metaphor by describing one thing, namely the economy (the target domain), in terms of something else, namely an eating disorder (anorexia; the source domain).

This example can be contrasted to the headline of an article that was published on the website of *Business Insider UK* in May 2016, about the UK's Brexit referendum. Example (2) also contains a metaphorical noun, 'crash', which is used to describe the economy in terms of an accident.[4]

(2) Get ready for an economic crash if Britain leaves the EU.

(Moshinsky, 2016)

In both (1) and (2), the metaphorical noun is modified by an adjective that designates the target domain of the utterance: 'budgetary' in (1), and 'economic' in (2). Adjective-noun constructions like 'budgetary anorexia' and 'economic crash' are called "metaphorical domain constructions" (hereafter: MDCs; Sullivan, 2013). They consist of a metaphorically used noun modified by a non-metaphorical attributive adjective. Goatly (1997) argues that the adjective in MDCs can be seen as a form of metaphor signalling: by indicating the target domain of the metaphorically used noun, the adjective can simultaneously signal that the noun is used metaphorically.

Because of this 'metaphor-signalling potential', various researchers have suggested that MDCs can be seen as deliberate metaphors (e.g., Nacey, 2013; Steen, 2016). Metaphor signals explicitly indicate that a comparison is

[3] The original Dutch text runs as follows: "Ondanks een aantal jaar van budgettaire anorexia krimpt de economie nog steeds en loopt de werkeloosheid op."

[4] Please note that two other lexical units in (2) can be identified as related to metaphor: 'get' and 'leave'. Because of our focus on adjective-noun combinations in this paper, 'get' and 'leave' are ignored in the current analysis.

drawn between two domains. Therefore, signalled metaphor is seen as one of the prototypical manifestations of deliberate metaphor in Deliberate Metaphor Theory (hereafter: DMT; Steen, 2011a, 2011b, 2015; see also Krennmayr, 2011). In DMT, a metaphor is called deliberate when it is used *as* a metaphor in communication between language users. Deliberate metaphors present an external perspective on the topic of an utterance or text. They contrast with metaphors that do not have such perspective-changing function, called 'non-deliberate metaphors' (e.g., Steen, 2008, 2011b, 2015).

When examining the MDCs in (1) and (2) from the perspective of DMT, the noun 'anorexia' in 'budgetary anorexia' provides an external perspective on the target domain of the economy. That is, 'anorexia' has only one conventional meaning in the dictionary, which designates a serious eating disorder. The utterance in (1) is all about the economy, but includes an alien referent ('anorexia') that needs to be made sense of. Consequently, the adjective 'budgetary' can be seen as pointing out the novel target domain meaning for 'anorexia', thereby also signalling that it is used metaphorically.

By contrast, the noun 'crash' in 'economic crash' does not present an external perspective on the target domain of economics. A conventionalised meaning is available in the dictionary for 'crash' which designates a sudden decrease in the value of the stock market. It is true that the adjective in this example points out the target domain of the utterance (economics). However, it does not count as a metaphor signal. Rather, it serves to disambiguate between the various sense descriptions that are available in the dictionary for the noun 'crash'.

These observations suggest that adjectives in MDCs do not always function as metaphor signals, and that – consequently – not all nouns in MDCs count as deliberate metaphors. This raises the question which functions adjectives have in MDCs, and how these relate to the identification of the nouns in MDCs as deliberate metaphors. The goal of this paper is therefore to systematically investigate the role of adjectives as potential metaphor signals in MDCs, and to relate this to the distinction between deliberate and non-deliberate metaphor.

4.2 Domain adjectives, MDCs, and deliberate metaphor

MDCs consist of a metaphorically used noun that is modified by a non-metaphorical adjective. Hanks (2004, p. 269) refers to such adjectives as

"semantically mismatched modifiers". This seems to imply that the adjective in such constructions causes problems for interpretation because of a clash between the semantic domain of the adjective and that of the noun. In somewhat lighter terms, Turner (1991, p. 210) calls this type of modification "weird specification", in which a target domain word (for instance 'budgetary') is attached to a source domain word (for instance 'anorexia'). In a way, Hanks' and Turner's observations are apt: MDCs display a discrepancy between the adjective – belonging to the target domain, and the noun – belonging to some source domain.

However, rather than being something 'mismatched' or 'weird', these adjectives may serve an important role in the interpretation of the noun they modify. That is, adjectives in MDCs are attributive classifying topical adjectives. Such adjectives "giv[e] the subject area or [show] a relationship with a noun" (Biber, Johansson, Leech, Conrad, & Finegan, 1999, p. 509). Typical examples of this specific type of classifying adjectives include 'political', 'economic', 'financial', 'social', 'chemical', 'cultural', and 'mental' (e.g., Biber et al., 1999). In this way, adjectives in MDCs thus point out the target domain of the metaphorical noun they modify.

Consequently, it seems more appropriate to talk about these adjectives as "domain delimiters" (Ernst, 1981, p. 51), "domain signallers or topic indicators" (Goatly, 1997, p. 171), or "domain adjectives" (Sweetser, 1999, p. 144; see Sullivan, 2013). In the remainder of this paper, we will use the term 'domain adjective' because this term clearly indicates that we are dealing with adjectives, rather than with, for example, adverbs (e.g., 'financially immature'; see Ernst, 2001; Sullivan, 2013). The term 'domain adjective' furthermore makes explicit that this type of adjective always indicates the target domain of the metaphorical noun it modifies.

As was pointed out above, several researchers have suggested that domain adjectives in MDCs can be seen as metaphor signals (e.g., Goatly, 1997; Steen, 2007; Steen, Dorst, Herrmann, Kaal, Krennmayr, & Pasma, 2010), and, consequently, as instances of deliberate metaphor (e.g., Nacey, 2013; Steen, 2016). In this paper, we investigate the role of domain adjectives in MDCs from the perspective of Deliberate Metaphor Theory (DMT; Steen, 2008, 2011b, 2015). DMT assumes a three-dimensional model of metaphor, in which metaphor is not only seen as the linguistic expression of an underlying metaphorical structure in thought (e.g., Lakoff & Johnson, 1980), but also as a matter of communication between language users (Steen, 2008, 2011b). Words can be identified as metaphors at the level of language when they display a

contrast between a target domain meaning and a more basic source domain meaning (e.g., Pragglejaz Group, 2007; Steen et al., 2010). Words can be identified as metaphors at the level of thought because they display a contrast and comparison between two concepts that belong to different conceptual domains (e.g., Lakoff & Johnson, 1980; see Steen et al., 2010). Finally, based on DMT, words can be identified as deliberate metaphors at the level of communication when they are used *as* metaphors to change the perspective on the target domain of an utterance (e.g., Steen, 2011b, 2016).

In DMT, a metaphor is called deliberate when "its structure signals that the addressee has to move away their attention momentarily from the target domain of the utterance or even phrase to the source domain that is evoked by the metaphor-related expression" (Steen, 2015, p. 68). Deliberate metaphors contrast with non-deliberate metaphors, which are metaphors that simply constitute the linguistic means that language users have at their disposal to talk about a certain topic (Steen, 2015; see Cameron, 2003). Non-deliberate metaphors do not count as perspective changers in communication between language users. That is, non-deliberate metaphors are not used *as* metaphors, and consequently do not require attention to the source domain of the metaphor.

Because domain adjectives in MCDs indicate the target domain of the metaphorically used noun they modify, these adjectives can be seen as explicitly signalling the introduction of an external perspective onto the target of the utterance. That is, the domain adjective can be considered a signal that the noun it modifies is used *as* a metaphor in communication between language users (i.e., as a case of deliberate metaphor). Nacey (2013), for instance, suggests that the domain adjective 'political' in the MDC 'political graveyard', "indicates the actual topic of discussion – politics – and thereby forces a metaphorical interpretation of the noun which follows" (p. 172). In a similar way, Steen (2016) argues that the domain adjective 'Stalinist' in the utterance 'the second Stalinist ice age was beginning', explicitly signals that the compound noun 'ice age' is used "as an expression involving a mapping from the source domain of ice age to the target domain of Stalinist repression" (p. 121).

To the best of our knowledge, however, the relation between domain adjectives, MDCs, and deliberate metaphor has not yet been addressed in the literature, except indirectly in the analysis of a limited set of isolated examples in

Nacey (2013), and Steen (2016) discussed above.[5] The exact role of domain adjectives as signals of (deliberate) metaphor and the role of MDCs as deliberate metaphors in general thus remains unclear. The analysis of the MDCs in (1) and (2) suggests that domain adjectives work as a signal of metaphor in some MDCs, but not in others. This, in turn, suggests that domain adjectives may have different functions at the three dimensions of analysis that are distinguished in DMT (language, thought, and communication). The goal of the current paper is to investigate the function of domain adjectives and the (subsequent) identification of nouns in MDCs as deliberate metaphors in a systematic way.

To this end, we first identify all MDCs in the VU Amsterdam Metaphor Corpus. In order to then determine which MDCs count as potentially deliberate (versus non-deliberate) metaphors, we apply DMIP. This is a systematic, reliable tool for the identification of potentially deliberate metaphor in language use (see Chapter 2). On the basis of the results of these first two steps of our analysis, we further examine the role of domain adjectives in MDCs. In the final section of this paper, the results will be discussed within the broader framework of DMT.

4.3 Method

4.3.1 Materials

The MDCs that were analysed for this paper all come from the VU Amsterdam Metaphor Corpus (hereafter: VUAMC).[6] This is a corpus of almost 190,000 lexical units (words)[7] from four different registers: academic texts, news texts, fiction, and face-to-face conversations. The VUAMC was randomly sampled from the BNC-Baby – which, in turn, is a sample from the British National Corpus. The British National Corpus is tagged for parts of speech, and these were copied in the VUAMC. The VUAMC is furthermore annotated for all metaphor-related words (MRWs) by means of the Metaphor Identification Procedure Vrije

[5] Sullivan (2013) studied metaphorical domain constructions extensively. However, she took a construction grammar/frame semantics perspective.

[6] The corpus is available online via http://ota.ahds.ac.uk/headers/2541.xml (Oxford Text Archive).

[7] Following Steen et al. (2010), we use the term 'lexical unit' instead of 'word' because some units of analysis consist of more than one word, while they are analysed as a single unit. In general, however, words and lexical units are the same (see Steen et al., 2010, p. 26–32, for details).

Universiteit (MIPVU), a reliable method for the identification of linguistic metaphors in discourse (Steen et al., 2010; see Pragglejaz Group, 2007).

4.3.2 Identification of MDCs

The identification of all MDCs in the VUAMC took place semi-manually. First, all adjective-noun combinations in which the adjective was used non-metaphorically and the noun was used metaphorically were filtered out from the corpus. Then, a step-by-step checklist was set up based on the description of adjective types in Biber et al. (1999). This checklist was used to determine whether the adjective in the adjective-noun combination was an attributive classifying topical adjective, making the adjective-noun combination a MDC.

To ensure reliability in this identification process, two coders independently coded 250 randomly selected adjective-noun combinations from the VUAMC for MDC/non-MDC. Results showed "almost perfect" agreement between the two coders (97.2% agreement, associated Cohen's κ = .85; Landis & Koch, 1977, p. 165). This shows that the identification of domain constructions by means of the set of instructions is reliable. In total, there were 7 un-agreed cases which were discussed between the coders afterwards in order to reach agreement. The first author of this paper subsequently identified all MDCs in the corpus, yielding a total of 187 tokens, representing 129 types.

4.3.3 Identification of potentially deliberate metaphors

The identification of potentially deliberate MDCs was carried out by means of the Deliberate Metaphor Identification Procedure (hereafter: DMIP; see Chapter 2). DMIP is a step-by-step method for the systematic and reliable identification of potentially deliberate metaphors in language use. It takes a semiotic approach to deliberate metaphor, in that it investigates the structures and functions of language use. This type of approach should be explicitly distinguished from behavioural approaches to deliberate metaphor (Steen, 2007, 2011b, 2015).

Because DMIP analyses language use from a semiotic perspective, all aspects related to behaviour are left aside. As such, DMIP does not make any claims as to whether either the producer or the recipient of a potentially

deliberate metaphor actually processed that metaphor *as* a metaphor: this is a prediction about behaviour that needs independent psychological research. As a consequence of adopting a semiotic perspective, DMIP can only identify cases of *potentially* deliberate metaphor. Whether such potentially deliberate metaphors are actually processed (in production or reception) *as* metaphors in actual language users' minds should be investigated in subsequent behavioural studies.

Moreover, DMIP does not take into account the fact that there may be individual differences between language users in terms of their knowledge about the different meanings of words. Instead, DMIP looks at language use from the perspective of the idealised, contemporary, native speaker in the same way MIP (Pragglejaz Group, 2007) and MIPVU (Steen et al., 2010) do. To determine which different meanings words can have from this idealised perspective, DMIP makes use of contemporary corpus-based dictionaries (see also Steen et al., 2010; Semino, Heywood, & Short, 2004). In line with the Pragglejaz Group (2007) and Steen et al. (2010), the online versions of the *Macmillan Dictionary* and the *Longman Dictionary of Contemporary English* were used as resources.

The identification of potentially deliberate metaphors in language use takes place on the basis of a series of steps that analysts have to apply to every lexical unit in an utterance or text (See Figure 4.1). Analysts first read the text they want to analyse in order to get a general impression of what the text is about. To determine whether a lexical unit is related to metaphor, they then apply the Metaphor Identification Procedure Vrije Universiteit (MIPVU; Steen et al., 2010). For each of the lexical units that MIPVU identifies as a metaphor-related word (MRW), analysts subsequently determine whether the source domain of the MRW is part of the referential meaning of that utterance. If it is, the MRW is marked as a potentially deliberate metaphor. If it is not, the MRW is marked as a non-deliberate metaphor. Finally, DMIP requires analysts to describe in which way the source domain of the MRW is part of the referential meaning of the utterance in which it is used (see Chapter 2 for a detailed explanation of this tool).

The application of DMIP to all 187 MDCs from the VUAMC yielded a total of 16 cases in which the metaphor-related noun was identified as a potentially deliberate metaphor. This amounts to 8.56% of all MDCs in the VUAMC. These results thus seem to indicate that domain adjectives do not frequently function as metaphor signals. This raises the question when domain adjectives do count as metaphor signals, and which other functions domain adjectives do have in MDCs. In the next section, we discuss the various functions

of domain adjectives, paying attention to both potentially deliberate as well as non-deliberate cases of MDCs.

1. Read the entire text to get a general idea of what the text is about.
2. Apply the Metaphor Identification Procedure Vrije Universiteit (MIPVU) to find all metaphorical lexical units (metaphor-related words, or MRWs; see Steen et al., 2010, for detailed instructions).
3. Look at the first MRW.
4. Determine whether the source domain of the MRW is part of the referential meaning of the utterance in which the MRW is used.
    a. If 'yes', mark the MRW as potentially deliberate and proceed to step 5.
    b. If 'no', mark the MRW as non-deliberate and proceed to step 6.
    c. In case of doubt, mark the MRW as potentially deliberate, and add the code WIDLII (When In Doubt Leave It In; see Steen et al., 2010). Then, proceed to step 5.
5. If the MRW is coded as potentially deliberate in step 4, describe *how* the source domain of the MRW is part of the referential meaning of the utterance.
6. Look at the next MRW.

Figure 4.1 *The steps of DMIP.*

4.4 Three functions of domain adjectives in MDCs

In this section, we investigate the role of domain adjectives in MDCs. We identify three different functions. First, a domain adjective can function as a signal of novel metaphor. Second, a domain adjective can be analysed as a 'non-signal' of conventional metaphor, in which case it serves to disambiguate or further specify a conventionalised target domain meaning. And third, a domain adjective may serve as a signal of conventional metaphor of which the metaphorical status is revitalised.

We will now illustrate these three functions and their connection with potentially deliberate versus non-deliberate metaphor on the basis of a series of detailed example analyses. All examples are taken from the set of MDCs that are present in the VUAMC. All lexical units in the analyses in the following sections that are identified as related to metaphor by MIPVU (Steen et al., 2010) are followed by a superscript 'MRW' tag. MRWs other than those in MDCs will not be

discussed in detail, unless they contribute to the decision to mark the MDC as potentially deliberate.

4.4.1 Function 1: The domain adjective as signal of novel metaphor

The first function of domain adjectives in MDCs that we identify is that of the signalling of novel metaphor. We illustrate this function on the basis of two examples from the VUAMC, the first of which comes from a newspaper article in which a journalist describes names of bands playing on the London pub circuit.

(3) Primal Scream. Not a name which would lead[MRW] you to expect self-absorbed[MRW] acoustic doodlings[MRW].

(VUAMC-A1K-02)

This example contains the MDC 'acoustic doodlings'. The noun 'doodlings' (in the dictionary: doodle) is identified as a metaphor-related word because it describes music in terms of drawing. In the dictionary, 'doodle' has only one meaning: "a pattern or picture that you draw when you are bored or are thinking about other things" (*Macmillan*). This meaning does not capture the target domain sense, which is concerned with music. As such, the MRW introduces a new perspective to the target domain of music; one in which a composition is compared to a drawing.

The adjective 'acoustic' points out the target domain meaning for 'doodlings', namely 'music'. Because no conventionalised metaphorical meaning is available for this noun in the dictionary that matches the target domain of music, the domain adjective can moreover be seen as a metaphor signal. It indicates that the noun 'doodlings' has to be interpreted metaphorically, as belonging to the musical domain. In this case, 'acoustic' therefore counts as a metaphor signal, and 'doodlings' is identified as a potentially deliberate metaphor.

The second example to illustrate how domain adjectives can function as signals of novel metaphor comes from a newspaper article about the reintroduction of trams in the UK. When discussing the importance of the design of a tram, the journalist argues:

(4) After[MRW] all, Mancunians and visitors to the Manchester conurbation are going to have to look at these[MRW] mechanical millipedes[MRW] for well into[MRW] the twenty-first century.

(VUAMC-A3M-02)

Example (4) contains the MDC 'mechanical millipedes'. The noun 'millipede' does not match the overall target domain of the utterance, which is concerned with (the design of) trams. Instead, 'millipede' comes from a different domain, namely that of insects. The entry for 'millipede' in the dictionary consists of only one sense description: "an insect with a long thin body and many pairs of small legs" (*Macmillan*). The noun 'millipede' thus introduces an external perspective to the domain of trams, describing the vehicle in terms of an insect.

The adjective 'mechanical' points out this target domain for 'millipede'. Moreover, because no conventionalised target domain sense description is available in the dictionary, the domain adjective in this case works as a metaphor signal. It indicates that the noun 'millipedes' has to be interpreted metaphorically, as belonging to the domain of vehicles. In this case, 'mechanical' therefore counts as a metaphor signal, and 'millipedes' is identified as a potentially deliberate metaphor.

In (3) and (4), the domain adjectives 'acoustic' and 'mechanical' thus function as metaphor signals, and the metaphor-related nouns 'doodlings' and 'millipedes' are identified as potentially deliberate metaphors. Other examples from the corpus that show similar patterns include 'fiscal thicket' to describe the degree of complexity of the US tax system, 'military household' to describe the people working for a prince, and 'social atom' to describe the position of autonomous human beings in the world. In all these cases, no conventionalised sense description is available in the dictionary that captures the contextual (target domain) meaning of the noun. As such, the nouns constitute cases of novel metaphor. The domain adjective in these cases indicates the novel target domain meaning, and it furthermore signals that the metaphor it modifies is used *as* a metaphor. In total, 11 out of the 187 MDCs in the VUAMC consist of a domain adjective signalling a novel metaphor.

4.4.2 Function 2: The domain adjective as domain differentiator

The second function of domain adjectives that we identify in MDCs, is that of domain differentiation. In these cases, the domain adjective modifies a metaphor-related noun for which a conventionalised metaphorical meaning *is* available in the dictionary. In this case, the domain adjective either disambiguates between the various available target domain meanings, or it further specifies the relevant target domain meaning. Consequently, the domain adjective in these MDCs does not function as a metaphor signal.

The domain differentiation function of domain adjectives is illustrated on the basis of two examples from the VUAMC. The first of these comes from an academic text about urban poverty, which states that:

(5) little more than economic growth[MRW], (...), was needed to remove[MRW] the main causes of urban deprivation

(VUAMC-AS6-01)

Example (5) contains the MDC 'economic growth'. This example is about the economy, but it contains one lexical unit, 'growth', that comes from the domain of living things. In contrast to the two examples discussed in section 4.4.1, the dictionary entry for 'growth' contains multiple sense descriptions, rather than just one. One of the sense descriptions in the dictionary captures the target domain meaning of the noun in (5): "an increase in the success of a business or a country's economy, or in the amount of money invested in them" (*Macmillan* sense description 2, henceforth MM2, etc.). Rather than providing a new perspective on the target domain, the noun 'growth' is conventionally used to describe the development of the economy.

The domain adjective 'economic' points out the target domain of the economy. At the same time, the target domain of the economy is explicitly mentioned in sense description MM2. More specifically, this target domain sense description also contains the label 'ECONOMICS' in the *Macmillan dictionary*, which is the same as the domain adjective modifying 'growth' in (5). In this way, the domain adjective serves to disambiguate between the various available sense descriptions (six in total in *Macmillan*), rather than to signal that 'growth' is used metaphorically. In this case, the domain adjective 'economic' does not count as a metaphor signal, and the metaphorical noun 'growth' is identified as a case of non-deliberate metaphor.

A second example of the domain differentiation function of domain adjectives in MDCs is displayed in example (6). This example is taken from an academic text about the role of children in philosophy. The utterance describes how philosophers talk about children.

(6) The tension[MRW] between[MRW] these[MRW] theoretical views[MRW] of children as non-rational, non-autonomous[MRW] beings and the practical knowledge of real children is evident in (...) quotations from[MRW] Hobbes and Locke and Kant and Mill.

(VUAMC-ECV-05)

The MDC in (6) is 'theoretical view'. The utterance is about the way in which philosophers talk about children, but it contains one lexical unit, 'view', that comes from the domain of sight. For this noun, like for 'growth' discussed in (5) above, multiple sense descriptions are available in the dictionary. In the case of (6), the noun 'view' displays a contrast between a conventionalised target domain meaning of "a particular way of thinking about something" (MM1a), and a more basic source domain meaning of "the ability to see something from a particular place" (MM2). The noun 'view' is thus conventionally used to describe a particular way of thinking.

The domain adjective 'theoretical' points out the target domain of the metaphorical noun it modifies. At the same time, it differentiates between the various sense descriptions that are available for 'view'. More precisely, the domain adjective in (6) can be seen as further specifying the type of thinking mentioned in the target domain sense description in the dictionary. That is, the domain adjective 'theoretical' provides more precise information as to what 'way of thinking' is involved. In this case, the domain adjective 'theoretical' does not count as a metaphor signal, and the metaphorical noun 'view' is identified as a case of non-deliberate metaphor.

For the metaphor-related nouns 'growth' and 'view' in the MDCs in examples (5) and (6), conventionalised metaphorical sense descriptions are available in the dictionary that match the target domain of the utterance in which they are used. In these examples, the domain adjectives 'economic' and 'theoretical' differentiate between the various sense descriptions that are available. More specifically, they either disambiguate between the different sense descriptions, or they further specify them.

In the case of disambiguation, the domain indicated by the domain adjective is explicitly mentioned in the relevant target domain sense description.

Other MDCs from the VUAMC in which the domain adjective disambiguates between various senses are, for instance, 'emotional pain', 'social environment', 'magnetic field', and 'cultural background'. A total of 77 out of the 187 MDCs in the VUAMC were identified as cases of disambiguation. In the case of specification, the domain adjective further specifies a conventionalised target domain meaning that is available in the dictionary. Additional MDCs from the VUAMC in which the domain adjective serves to specify the relevant target domain meaning of the noun include: 'biological approach', 'economic mix', 'technical subject', and 'social impact'. A total of 94 MDCs in the VUAMC were identified as cases of specification.

In all these cases, a conventionalised sense description is available in the dictionary that captures the contextual (target domain) meaning of the noun. The nouns in these MDCs are thus conventional metaphors. The domain adjectives that modify the metaphorical nouns point out the target domain and serve to disambiguate or further specify it. They do not signal that the noun is used *as* a metaphor to provide an external perspective to the target domain of the utterance. As such, in these cases, the metaphorical nouns in these MDCs are not identified as potentially deliberate metaphors.

4.4.3 Function 3: Domain adjectives as signals of conventional metaphor

Based on the examples discussed in (3)–(6), it may seem as if domain adjectives only qualify as metaphor signals when they modify a metaphor-related noun for which no conventionalised target domain meaning is available in the dictionary (i.e., novel metaphors). However, like any linguistic phenomenon, MDCs are not a phenomenon in isolation. They are used in co-text, and this co-text may affect the function of the domain adjective, as well as that of the identification of the metaphorical noun they modify as potentially deliberate or non-deliberate metaphors. In examples (5) and (6), the immediate co-text did not provide additional information suggesting that either of the domain adjectives in the respective MDCs should have been identified as metaphor signals, or that either of the two metaphorical nouns should have been identified as potentially deliberate.

In the two examples that follow, by contrast, such additional information *is* available. In (7) and (8), we illustrate how a domain adjective can function as a metaphor signal when the metaphorical noun it modifies is conventionally

metaphorical. Example (7) comes from the fiction part of the VUAMC. It is about a man who has just learned that the company for which he works is going to move their offices from Europe to the US, as a result of which he will lose his job.

(7) 'Don't they realise they're playing[MRW] with[MRW] political dynamite[MRW]?' Mark demanded.

(VUAMC-AC2-06)

This example contains the MDC 'political dynamite'. The noun 'dynamite' comes from a different domain than the overall target domain of company tactics/politics, namely explosive substances. The dictionary entry for 'dynamite' contains a conventionalised metaphorical meaning that matches the target domain: "something exciting and shocking that could cause a lot of problems" (MM2a). The noun is thus conventionally used to talk about shocking situations such as those at the protagonist's company.

The domain adjective 'political' points out the target domain meaning of the noun it modifies. Because of the presence of a matching target domain sense description of 'dynamite' in the dictionary, the domain adjective can furthermore be identified as a case of domain differentiation. More specifically, it constitutes a case of specification (see section 4.4.2). The domain adjective provides more detailed information about the type of situation that is exciting or shocking, namely that of the protagonist's company's politics/tactics.

When considered in relative isolation, the domain adjective 'political' in the MDC 'political dynamite' would not be identified as a metaphor signal. Consequently, the metaphorical noun 'dynamite' would be identified as a non-deliberate metaphor. However, in (7), additional information is present in the co-text of the MDC that suggests that 'political' *does* function as a signal of metaphor, and that 'dynamite' can be identified as a case of potentially deliberate metaphor.

The verb phrase 'playing with political dynamite' resembles the idiomatic phrase 'playing with fire', which is conventionally used to describe "doing something dangerous or risky that could cause lots of problems for you" (*Macmillan*). The replacement of 'fire' by 'dynamite' alters the meaning of the phrase, in that a dangerous or risky situation becomes an exciting and shocking situation. The phrase is further altered by the addition of the domain adjective 'political'. Langlotz (2006) calls this type of alteration "idiomatic creativity".

Precisely because this domain adjective is added to the altered idiomatic phrase, it can be analysed as revitalising the metaphorical use of the noun it modifies (see Goatly, 1997; Semino, 2008). Consequently, 'political' in (7) counts as a signal of metaphor, and 'dynamite' is identified as a potentially deliberate metaphor. This example thus illustrates how taking into account the (immediate) co-text surrounding a MDC can affect the analysis of the domain adjective as a metaphor signal, and, consequently, of the metaphorical noun as potentially deliberate.

A second example from the VUAMC in which a domain adjective modifies a conventional metaphor, and in which the adjective can be analysed as a signal of potentially deliberate metaphor, is presented in (8). This example comes from a news text about a policy review presented at a conference of the British Labour Party.

(8) Nor does it [i.e., the policy review] contemplate[MRW] the knock-on consequences for Labour ministers of attempting to implement their programme while rebuilding[MRW] the governmental machine[MRW].

(VUAMC-A1J-33)

The MDC in this example is 'governmental machine'. The noun 'machine' comes from the domain of tools and equipment. This domain differs from the overall target domain of the utterance, which is concerned with politics and the government. In the dictionary, a conventionalised metaphorical meaning is available that matches the target domain of the utterance in (8): "an organized system of people with power, especially in politics" (MM3a). 'Machine' thus is a conventional metaphor.

As a domain adjective in the MDC in (8), 'governmental' points out the target domain meaning of 'machine'. The adjective can be seen as a case of domain differentiation of the type 'disambiguation' (see section 4.4.2), because it serves to disambiguate between different sense descriptions of the metaphorical noun. That is, the relevant target domain sense description in the dictionary explicitly refers to politics (of which the government is part). Once again, in relative isolation this domain adjective would not count as a signal of metaphor. The noun it modifies would consequently be identified as a case of non-deliberate metaphor.

However, in (8), additional information is available in the co-text of the MDC that suggests that the domain adjective *does* function as a metaphor signal, and that the noun *is* a case of potentially deliberate metaphor. The MDC

is part of what Crisp, Heywood, and Steen (2002, p. 61) call "multiple metaphor", because the proposition underlying the verb phrase 'rebuilding the governmental machine' contains two lexical units that can be identified as metaphor-related words: 'rebuilding' and 'machine'. In itself, the verb 'to rebuild' is also a conventional metaphor in this context; a sense description is available in the dictionary that matches the target domain of the verb ("to improve a situation so that it is as good as it was in the past", MM2). Yet, when combined with the noun 'machine', it becomes part of a scenario that was first introduced in the title of the article, which runs as follows:

(9) The Labour Party Conference: Policy review throws[MRW] a spanner[MRW] in[MRW] the Whitehall machinery[MRW].

(VUAMC-A1J-33)

This title contains the idiomatic phrase 'to throw a spanner in the works', which has the conventionalised meaning "to do something that suddenly stops a process or plan" (*Macmillan*). Yet, this phrase is creatively adjusted in two ways. Firstly, the noun 'works' is replaced by 'machinery'. It is interesting to note that the latter noun, but not the former, has a conventionalised metaphorical meaning that captures the target domain of politics. Secondly, the noun 'machinery' is preceded by the proper noun 'Whitehall', which is the name of a street in London that metonymically represents the government because many departments and ministries are located along that street. Because of the replacement of 'works' by 'machinery', and the addition of 'Whitehall', the metaphorical use of (at least part of) the phrase is revitalised.[8] The title then presents a short scenario in which a (metaphorical) tool is thrown into a (metaphorical) machine.

In our example (8), the scenario is further developed by pointing out the fact that the (metaphorical) machine that broke down because of the (metaphorical) spanner that was thrown into it must in some way be (metaphorically) rebuilt. As a result, the domain adjective 'governmental' in (8) can be considered a metaphor signal, and the noun it modifies, 'machine' (plus the verb 'to rebuild') can be considered a case of potentially deliberate metaphor.

[8] Please note that these adjustments to the idiomatic phrase are very similar to the type of adjustments discussed in (7). See also Langlotz (2006).

The MDCs analysed in (7) and (8) both contain a metaphor-related noun that has a conventionalised target domain meaning in the dictionary: 'dynamite' and 'machine'. In isolation, the domain adjectives modifying these nouns, 'political' and 'governmental', respectively, point out the target domain of these nous. They moreover function as domain differentiators to further specify or disambiguate between the different meanings that are available for these nouns. However, in both (7) and (8), additional information is available that revitalises the metaphorical use of the two nouns (or even idiomatic phrases). The domain adjectives consequently function as signals of these revitalised metaphors, and the nouns in these MDCs are consequently identified as potentially deliberate metaphors. In this way, domain adjectives can function as metaphor signals when modifying conventionalised metaphorical nouns. A total of five out of the 187 MDCs in the VUAMC were identified as cases in which the domain adjective counts as a signal of conventional metaphor.

4.5 Conclusion and discussion

In this paper, we investigated the role of domain adjectives as metaphor signals in metaphorical domain constructions (MDCs) in relation to the identification of potentially deliberate metaphor. MDCs are adjective-noun pairs in which a metaphor-related noun is modified by a non-metaphorical adjective (e.g., Sullivan, 2013). This domain adjective, which is a specific type of attributive classifying adjective (see Biber et al., 1999), indicates the target domain of the noun it modifies. In the metaphorical domain construction 'budgetary anorexia', for example, 'budgetary' indicates that the utterance is about finances, rather than about a serious illness.

Goatly (1997) suggested that such domain adjectives are a special type of metaphor signal, pointing out the target domain of the metaphorically used noun they modify, and as such marking the fact that that noun is used metaphorically. Metaphor signalling in general, in turn, has been mentioned as a typical manifestation of potentially deliberate metaphor within the framework of Deliberate Metaphor Theory (e.g., Steen, 2011b; Krennmayr, 2011). Potentially deliberate metaphors are those metaphors that are used *as* metaphors in communication between language users. They provide an external perspective on the topic of the utterance.

The results of our analyses demonstrate that domain adjectives in MDCs do not by definition work as signals of metaphor, and that, consequently,

not all metaphor-related nouns in MDCs can be identified as potentially deliberate metaphors. In this paper, we identified three different functions of domain adjectives. First, domain adjectives can work as a signal of novel metaphor, as illustrated in examples (3) and (4). Second, domain adjectives can function as a domain differentiator, as illustrated in (5) and (6). Third, domain adjectives can function as a signal of a deliberately used conventional metaphor, as illustrated in (7) and (8).

Our analyses can be related to the three dimensions that are part of the model of metaphor presented in DMT (e.g., Steen, 2008, 2011b, 2015). At the dimension of language, domain adjectives always designate the target domain meaning of the noun they modify, independent of whether the noun is a novel or a conventional metaphor. At the level of concepts, we have shown how the domain adjective can either indicate a novel target domain meaning, or differentiate between various conventionalised target domain meanings. We have further specified this second option by showing how, in some cases, the adjective disambiguates between various meanings, whereas in other cases it further specifies one of the available meanings. At the level of communication, a distinction is made between domain adjectives that signal the potentially deliberate metaphorical status of the noun they modify, and domain adjectives that do not signal such a status. We have shown that this distinction is also (at least in part) independent of the question whether the noun is a novel or a conventional metaphor, by showing that both novel and conventional metaphor-related nouns can be signalled *as* metaphors by a domain adjective. Table 4.1 displays a schematic overview of the various functions of domain adjectives in MDCs as identified in the current paper.

On the whole, the distinction between novel and conventional metaphor is important, but our analyses have shown that conventional metaphors can be revitalised in specific contexts. When investigated in isolation, the function of the domain adjective in such cases would be to disambiguate between different conventionalised meanings of the metaphorical noun, or to further specify one of those meanings. Yet, because of additional information from the immediate co-text, the adjective can be identified as a case of signalling. Whether or not a domain adjective counts as a metaphor signal, making the metaphor-related noun it modifies a potentially deliberate metaphor, can thus only be determined on the basis of the systematic analysis of the MDC in the co-text of the utterance in which it is used.

The present paper took a semiotic approach to the analysis of MDCs in language use. On the basis of our analyses, hypotheses can be formulated about

Table 4.1

Schematic overview of the various functions of domain adjectives in metaphorical domain constructions, with examples from the VU Amsterdam Metaphor Corpus.

	Function of the domain adjective			
Status of MRW	Language	Thought	Communication	**Example from VUAMC**
Novel	Expressing TD	Domain indicator	Signal	Mechanical millipede
			No signal	*
Conventional	Expressing TD	Domain differentiator: specification	Signal	(Playing with) political dynamite
			No signal	Theoretical view
	Expressing TD	Domain differentiator: disambiguation	Signal	(Rebuilding the) governmental machine
			No signal	Economic growth

Note. TD = target domain.

how these constructions are processed by individual language users. In future research, such hypotheses can be tested by means of psycholinguistic experimentation. We expect that MDCs in which the domain adjective can be identified as a metaphor signal and the metaphor-related noun as a potentially deliberate metaphor, are processed by means of cross-domain mapping (i.e., *as* metaphors). By contrast, we predict that MDCs in which the domain adjective does not count as a metaphor signal and the noun is non-deliberate, are not understood by means of cross-domain mappings, but rather via other processes such as lexical disambiguation or categorisation. These hypotheses are in line with what DMT predicts (e.g., Steen, 2008, 2011b, 2015): when a metaphor has a specific communicative status *as* metaphor between language users (i.e., deliberate metaphor), either the producer or the recipient, or both, will attend to the source domain of the metaphor. Consequently, they will process the metaphor by means of a cross-domain mapping between the source and target domain. However, when the metaphor is non-deliberate, language users will not likely attend to the source domain of the metaphor. In these cases, the metaphor is understood by means of lexical disambiguation or categorisation.

Future linguistic (semiotic) research into MDCs may take into account the role of register. Biber et al. (1999) found that classifying adjectives are typical of the informational written registers (news and academic texts), with academic texts showing more domain adjectives ('topical classifiers', in their terms) than the other three registers (news, fiction, and face-to-face conversations). Ernst (1981), on the other hand, points out that domain adjectives – in particular as part of idiomatic expressions – are common in news and magazine articles. Further research can investigate to what extent these suggestions hold, and how the distribution of MDCs across register interacts with the various functions of domain adjectives that were discussed in the current paper.

The present paper provides new insights into both the position of metaphorical domain constructions as a typical manifestation of potentially deliberate metaphor, and into the role of domain adjectives in MDCs. That is, our analyses demonstrated that MDCs do not count as potentially deliberate metaphor by definition, and that bottom-up analyses of MDCs are needed to determine in which context this is the case. Furthermore, our analyses provided insight into the various functions of domain adjectives in MDCs. We have shown how they always point out the target domain of the construction, but that this does not necessarily imply that they also signal the fact that the noun they modify is used *as* a metaphor in communication between language users. In

fact, domain adjectives fulfil different functions on different levels of language use.

As we have pointed out in this section, our findings provide ample leads for further research, both from a semiotic, as well as from a behavioural perspective. For instance, further corpus-based research may investigate the role of register, while psycholinguistic research may investigate the psychological reality of the MDCs that we identified as potentially deliberate for individual language users.

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Chapter 5

The role of co-text in the analysis of potentially deliberate metaphor[1,2]

Abstract

Taking the three-dimensional model of metaphor (Steen, 2008, 2011, 2015) as a starting point, this paper investigates the way in which co-text influences the identification and analysis of potentially deliberate metaphor in discourse. While co-text also plays a role in the identification and analysis of the linguistic and conceptual dimensions of metaphor, its role in the identification and analysis of metaphor *as* metaphor at the communicative dimension is more complex. By means of a series of example analyses, this paper demonstrates how potentially deliberate metaphor develops in natural discourse. We first analyse metaphors in relative isolation (i.e., at utterance level), and subsequently take additional textual information surrounding the utterance into consideration. By means of in-depth analyses we demonstrate how co-text can play an indispensable role in both the identification and the further analysis of potentially deliberate metaphor in language use. In this way, this paper provides important new insights into the complexity of the analysis of the communicative dimension of metaphor in natural discourse.

[1] A slightly modified version of this chapter has been submitted as: Reijnierse, W.G., Burgers, C., Krennmayr, T., and Steen, G.J. The role of co-text in the analysis of potentially deliberate metaphor.

[2] The corpus with annotations for potentially deliberate metaphor is publicly accessible on the Open Science Framework (OSF) at: http://bit.ly/2IvPhjh.

5.1 Introduction

Metaphor is a frequently occurring phenomenon in natural language use (see, e.g., Cameron & Low, 1999; Gibbs, 2008; Kövecses, 2002). In fact, metaphor has been identified as a powerful communicative device in a broad variety of contexts, including in educational discourse (e.g., Cameron, 2003), political discourse (e.g., Musolff, 2016; Charteris-Black, 2013), business media discourse (e.g., Koller, 2003a), financial news reporting (e.g., O'Mara-Shimek, Guillén-Parra, & Ortega-Larrea, 2015), doctor-patient conversations (e.g., Tay, 2013), and so on. However, such attention for the communicative dimension of metaphor is relatively recent.

Since the 'cognitive turn' in metaphor studies at the beginning of the 1980s (Lakoff & Johnson, 1980, 1999; Ortony, 1993), linguistic research into metaphor has primarily been concerned with the analysis of metaphor in language as the manifestation of presumed metaphorical structures in thought (see Gibbs, 2011). Specifically, the cognitive-linguistic model of metaphor holds that we *talk* about one thing (the target domain) in terms of something else (the source domain) because we *think* about that one thing in terms of the other (Lakoff & Johnson, 1980). Consider the noun 'hunger' in the following two examples, which are both concerned with the desire to acquire knowledge:

(1) Snacks and slow food for intellectual hunger.

(Steketee, 2012)[3]

(2) Develop a hunger for knowledge.

(Redmond, 2016)

Metaphor researchers in the cognitive-linguistic tradition hold that 'hunger' in both (1) and (2) can be analysed as the linguistic expression of the same conceptual metaphor in which the concept DESIRE[4] is described in terms of the concept HUNGER.

Recently, however, researchers have argued that the strong focus on these two dimensions in the cognitive-linguistic approach to metaphor has left the special use of metaphor *as* metaphor at the level of communication

[3] This is the heading of a newspaper article that was published in the Dutch newspaper *NRC Handelsblad*. The original title runs as follows: "Snacks en slow-food voor de intellectuele honger".

[4] Small capitals are conventionally used in cognitive linguistics to indicate conceptual domains (Lakoff, 1993).

undervalued (e.g., Caballero, 2003; Charteris-Black, 2004; Koller, 2003b; Semino, 2008; Steen, 2008, 2011; Wee, 2005). To account for this undervalued role of metaphor, Steen (2008, 2011) suggests to add a third dimension to the cognitive-linguistic model of metaphor, namely that of communication (see, e.g., Cameron, 1999, 2003; Charteris-Black & Musolff, 2003, for similar proposals). In the resulting three-dimensional model of metaphor, metaphors in *language* are still seen as the expressions of cross-domain mappings in *thought*. However, they are also seen as a matter of *communication* between language users. Specifically, in the dimension of communication, a distinction is made between metaphors that are used *as* metaphor between language users (deliberate metaphors), and metaphors that do not have such a function (non-deliberate metaphors).

The three-dimensional model of metaphor (language, thought, communication) is at the core of Deliberate Metaphor Theory (hereafter: DMT; Steen, 2015), which constitutes the theoretical framework of this study. Specifically, in this paper we take a semiotic perspective to deliberate metaphor, which means that we investigate language use on the basis of texts, rather than on the basis of language users' processes (i.e., production, reception, or interaction). For this reason, we use the term *potentially* deliberate metaphor in the analyses in the remainder of this paper.

Consider examples (1) and (2) again. As was pointed out above, in the two-dimensional model of metaphor, the noun 'hunger' is analysed in the same way in (1) and (2), namely as the linguistic expression of the same conceptual metaphor DESIRE IS HUNGER. Yet, when analysing 'hunger' in terms of the third dimension of metaphor, that of communication, these two examples yield different outcomes. Example (1) is the headline of a newspaper article about the 4th TEDx Amsterdam conference. In (1), the noun 'hunger' conventionally describes the desire for something abstract (in this case: knowledge) in terms of the desire for food. This example contains two other nouns that display the same contrast between the target domain of acquiring knowledge, and the food-related source domain. The TED talks that will satisfy the 'hunger' for knowledge are described, unconventionally, as 'snacks' and 'slow food'. These food-related terms present a novel perspective on the target domain of the utterance. As a result, the food-related source domain meaning of 'hunger' is promoted as well, and these metaphors stand out *as* metaphors in the communicative dimension of metaphor. 'Hunger' in (1) consequently counts as a case of potentially deliberate metaphor. In (2), 'hunger' also conventionally describes the desire for knowledge in terms of the desire for food, just as in (1). However, in (2) there is

no indication that 'hunger' serves *as* a metaphor at the dimension of communication. That is, in contrast to what is the case in (1), there are no cues in (2) that make the desire-for-food source domain stand out. 'Hunger' in (2) thus constitutes as a case of non-deliberate metaphor.

The addition of a third dimension to the model of metaphor raises the question of how deliberate versus non-deliberate metaphors can be analysed in language use. As the examples discussed in (1) and (2) above suggest, co-text (Catford, 1965) may play an important role in the analysis of potentially deliberate metaphor. Co-text is distinguished from context in that the former is concerned with information that can be found in the text itself, while the latter is concerned with information from outside the text, such as knowledge of the speaker, or the situation in which the text is used. Since this paper addresses deliberate metaphor from a semiotic perspective, only co-text – but not context – is taken into account.

Co-text plays a role in the analysis of the linguistic and conceptual dimension of metaphor as well (see, e.g., Goatly, 1997; Heywoord, Semino, & Short, 2002; Pragglejaz Group, 2007; Steen, Dorst, Herrmann, Kaal, Krennmayr, & Pasma, 2010). In much the same way as in (1), one needs to know that (2) is about knowledge rather than about the actual desire for food in order to identify 'hunger' as the linguistic expression of an underlying conceptual mapping between DESIRE and HUNGER. To establish that this is the case, it is necessary to look at the words surrounding the lexical unit under examination to get an idea of what the utterance, paragraph, or text in which the word is used, is about. However, the precise way in which co-text plays a role in the identification and analysis of metaphor at the dimensions of language and thought may differ from that at the dimension of communication. As Heywood et al. (2002) for instance point out, co-text may not only be important for the general identification of lexical units as metaphor, but also for cases in which authors are "clearly playing very purposefully with the literal/metaphorical distinction" (p. 47).

Given the semiotic approach to deliberate metaphor adopted in this paper, we cannot draw conclusions about the specific objectives of authors in our analyses. Rather, the aim of this paper is to explore how co-text – i.e., additional textual information, either in the form of the immediate words surrounding a metaphor, or the surrounding phrases, sentences, or even the entire text – plays a role in both the *identification* of potentially deliberate metaphors, as well as in their further *analysis*. By first analysing metaphors within the utterances in which they are used (i.e., in relative isolation), and

subsequently taking into account surrounding co-text, we are able to investigate how metaphor in communication develops in a number of different ways in natural discourse. Whereas the examples we present in this paper allow the analysis of the linguistic and conceptual dimensions of metaphor when analysed 'in relative isolation', they may not necessarily provide sufficient information for the analysis of the communicative dimension of metaphor. This paper provides new insights into the communicative dimension of metaphor by exploring how co-text influences the identification of metaphors *as* metaphor, as well as their further analysis.

The materials and method used for the analyses in this paper are discussed in section 2. Then, we investigate the role of co-text in both the identification and further analysis of potentially deliberate metaphor in language use in three case studies based on a set of illustrative examples. Finally, the outcomes of these analyses are discussed in light of DMT (Steen, 2008, 2011, 2015).

5.2 Materials and method

All qualitative analyses in this paper are based on an annotated corpus of potentially deliberate metaphor in natural discourse. This corpus consists of almost 190,000 lexical units[5] from four different registers (academic texts, fiction, newspaper articles, and face-to-face conversations). It was initially annotated for all metaphor by means of the Metaphor Identification Procedure Vrije Universiteit (MIPVU; Steen et al., 2010) and published online as the VU Amsterdam Metaphor Corpus (VUAMC).[6] All 24,762 metaphors in the VUAMC were then coded for potentially deliberate versus non-deliberate metaphor by means of a newly developed, reliable method for the identification of potentially deliberate metaphor in language use (DMIP; see Chapter 2, and Figure 5.1).

[5] In our analyses, we follow Steen et al. (2010) in taking the 'lexical unit', rather than the 'word' as the unit of analysis. Although a lexical unit typically consists of a single word, some lexical units contain more than one word (e.g., compounds, phrasal verbs, multiword expressions).

[6] The VUAMC is available online via http://ota.ahds.ac.uk/headers/2541.xml (Oxford Text Archive).

1. Read the entire text to get a general idea of what the text is about.
2. Apply the Metaphor Identification Procedure Vrije Universiteit (MIPVU) to find all metaphorical lexical units (metaphor-related words, or MRWs; see Steen et al., 2010, for detailed instructions).
3. Look at the first MRW.
4. Determine whether the source domain of the MRW is part of the referential meaning of the utterance in which the MRW is used.
    a. If 'yes', mark the MRW as potentially deliberate and proceed to step 5.
    b. If 'no', mark the MRW as non-deliberate and proceed to step 6.
    c. In case of doubt, mark the MRW as potentially deliberate, and add the code WIDLII (When In Doubt Leave It In; see Steen et al., 2010). Then, proceed to step 5.
5. If the MRW is coded as potentially deliberate in step 4, describe *how* the source domain of the MRW is part of the referential meaning of the utterance.
6. Look at the next MRW.

Figure 5.1 *The steps of DMIP.*

In line with our semiotic approach to metaphor, DMIP identifies a metaphor as potentially deliberate "when the source domain of the metaphor is part of the referential meaning of the utterance in which it is used" (see Chapter 2). This means that a metaphor is identified as potentially deliberate when its source domain meaning functions as a distinct referent in the state of affairs designated by the utterance. By means of six separate steps, analysts applying DMIP determine for every lexical unit whether it can be identified as a potentially deliberate metaphor. To promote the systematic and reliable analysis of language use, and to prevent personal intuitions of the analyst from interfering in the process of identifying potentially deliberate metaphors, DMIP starts from an idealised contemporary native speaker of English. Consequently, a corpus-based dictionary (the *Macmillan English Dictionary*) is used to establish the various contemporary meanings of a lexical unit under consideration (cf. MIP; Pragglejaz Group, 2007; and MIPVU; Steen et al., 2010).

The outcomes of the application of DMIP yield results that can be further interpreted from both a quantitative and a qualitative perspective. In the qualitative analyses presented in the current paper, we explore the role of co-text in the identification and analysis of potentially deliberate metaphor in discourse by means of a series of examples taken from the VUAMC.

5.3 The role of co-text in the analysis of potentially deliberate metaphor in discourse

In this section, we explore the role of co-text in the analysis of potentially deliberate metaphor on the basis of three case studies, each consisting of two complementary examples from the VUAMC. The first of these case studies focuses on how co-text can influence the *analysis* of potentially deliberate metaphor in the case of two similes. The second case study shows how co-text is sometimes indispensable to *identify* a metaphor as potentially deliberate by discussing to cases of extended metaphor. Finally, the third case study focuses on how recurring metaphors as co-text can influence the *identification* and *analysis* of potentially deliberate metaphor.

In the following examples, all metaphors – as previously identified by MIPVU – are followed by a superscript 'MRW' (for 'metaphor-related word'; see Steen et al., 2010) tag. All lexical units that serve as a signal of metaphor – as previously identified by MIPVU – are followed by a superscript 'MFlag' (for 'metaphor flag') tag. For all metaphors that were subsequently identified as potentially deliberate by means of DMIP, a superscript 'delib' is added to the MRW tag.

5.3.1 The role of co-text in the analysis of potentially deliberate metaphor

The first case study examines the role of co-text in the analysis of two similes. In both these cases, the *identification* of potentially deliberate metaphor is straightforward. However, in the further *analysis* of these two examples, co-text plays a special role. The two examples are first presented in relative isolation, after which they are discussed in detail by taking additional co-text into consideration.

The first simile, presented in (3), is taken from a newspaper article in the VUAMC that describes the French region of Poitou/Saintonge as an interesting tourist destination.

(3) [To] go to Poitou/Saintonge and not look at any of its churches would be like[MFlag] going[MRW-delib] to[MRW-delib] an African[MRW-delib] game-reserve[MRW-delib] and ignoring[MRW-delib] the animals[MRW-delib].

(VUAMC-AHC-61)

The second simile, in example (4), is taken from a fiction text in the VUAMC. It describes how Arlene, a model manager, sees Paula, a young girl whom she has turned into a promising fashion model.

(4) [S]he looked on Paula as[MFlag] her very own creation[MRW-delib].

(VUAMC-BMW-09)

Both (3) and (4) contain an explicit comparison between some situation in the target domain of the utterance, and an external source domain. This comparison is signalled by means of the prepositions 'like' in (3), and 'as' in (4). Because of this overt comparison, both examples are identified as potentially deliberate metaphors.

When analysing these two examples in isolation, the simile in (3) is more elaborate and much richer in terms of imagistic content than the simile in (4). In fact, (3) is a typical example of a one-shot image metaphor (see Lakoff & Turner, 1989), in which one image – a visit to an African game reserve – is mapped onto another image – a visit to a particular part of France. By contrast, the simile in (4) is limited to a single word ('creation'). It is much less rich in terms of imagistic content and less specific, because it compares a person to a newly made 'something', for instance a concrete object (e.g., a dress).

However, when examining these two examples in their surrounding co-text, a different picture emerges, in particular with respect to the analysis of the less elaborate, single-word comparison in (4). First, consider the co-text that precedes and follows the comparison in (3), presented below as (3').

(3') Even for France, the variety to be found[MRW] is enormous. My passion is for its [i.e., the region's] numerous Romanesque churches, in[MRW] most cases humbly[MRW] proportioned but elevated[MRW] into[MRW] unique works of art by the richness of their exquisitely-sculpted decoration; to go to Poitou/ Saintonge and not look at any of its churches would be like[MFlag] going[MRW-delib] to[MRW-delib] an African[MRW-delib] game-reserve[MRW-delib] and ignoring[MRW-delib] the animals[MRW-delib]. For serious[MRW] drinkers there is the production of cognac to investigate around Cognac, plus the

> chance to sample pineau, the powerful[MRW] local aperitif made from young[MRW] wine laced[MRW] with cognac.
>
> (VUAMC-AHC-61)

When examining the simile introduced in (3) in its immediate co-text, the preceding and following discourse contains a series of lexical units that are identified as metaphors, including 'found', 'humbly', 'serious', and 'young'. These can be identified as metaphors at the dimensions of language and thought, each describing one thing in terms of something else. However, no cues are present that suggest that the source domain referents of any of these metaphors are also present in the referential meaning of the utterances in which they are used. Put otherwise, there is no indication that these metaphors are used *as* metaphors in communication between language users, and they therefore count as cases of non-deliberate metaphor. Consequently, the referential meaning of the utterances in which these metaphors occur consists of target domain referents only. In 'the chance to sample pineau, the powerful[MRW] local aperitif', for instance, the source domain meaning of the adjective 'powerful', which is concerned with physical strength, is not part of the referential meaning of the utterance. Rather, the utterance only consists of target domain referents, which, in the case of 'powerful', has to do with the effect or taste of the aperitif.

When analysing the simile in (3) in its surrounding co-text (i.e., 3'), it becomes clear that the explicit comparison between the region of Poitou/Saintonge and a game reserve constitutes a deviation from the rest of the text. The extract contains several lexical units that can be identified as related to metaphor at the dimensions of language and thought, but that are not used *as* metaphors in communication between language users. This is different for the part of the extract in which the target domain of a visit to France is directly compared to a safari in Africa. Because of this sudden (and signalled) introduction of referents from an external source domain, these metaphors stand out *as* metaphors in the dimension of communication. In this case, the safari source domain is part of the referential meaning of the utterance, and the metaphors count as potentially deliberate. Thus, although the co-text does not affect the actual identification of the lexical units in (3) as potentially deliberate, the analysis of additional co-text shows how such an explicit comparison can stand out from the rest of the discourse, even a discourse that has many other metaphorical expressions of mappings across conceptual domains. In this case,

the safari-metaphor emphasises the importance of visiting the cultural heritage of Poitou/Saintonge.

The analysis is different for the simile discussed in (4), which is discussed next. Part of the co-text of (4) is presented as (4') below.

(4') Perfectly groomed[MRW] from head to toe and with[MRW] all that assurance, she was ready to take on the world[MRW], Arlene thought with[MRW] satisfaction, for she looked on Paula as[MFLAG] her very own creation[MRW-delib]. The raw[MRW] materials might have been there before[MRW] – indeed, hadn't it been she, Arlene, who had spotted[MRW] them? But the transformation of a leggy young filly[MRW-delib] into[MRW] a sleekly beautiful racehorse[MRW-delib] had been her doing.

(VUAMC-BMW-09)

This extract describes model manager Arlene's mental state in terms of her interpretation and evaluation regarding the young girl (Paula) whom she has trained to become a model. As becomes clear from the addition of co-text in (4'), the simile that is used to describe Paula in terms of a non-human object (a 'creation') can be seen as reflective of Paula's (businesslike) attitude towards the models that she supports: she looks at them as objects, rather than as young girls with particular qualities.

This characterisation of Arlene is also reflected in the final sentence of extract (4'). The sentence demonstrates how Arlene feels responsible for Paula's development from a young girl into a true model. This development is described in terms of a young female horse (a 'filly') that is transformed into a racehorse. For 'racehorse', the dictionary only contains a single sense description, which is that of an actual horse that is trained for races. Because no conventionalised target domain meaning is available for this noun, 'racehorse' is a case of novel metaphor by means of which a new perspective on Paula is introduced into the discourse. Consequently, 'racehorse' counts as a case of potentially deliberate metaphor.

For 'filly', a horse-related source domain meaning is also present in the dictionary, designating "a young female horse" (*Macmillan* sense description 1; hereafter: MM1, etc.). However, the dictionary entry for this noun also contains a second sense description that fits the target domain of the utterance, but contains the label 'old-fashioned': "a young woman" (MM2). In this sense description in the *Macmillan Dictionary*, it is furthermore indicated that "[m]en used to use this word, but people now consider it offensive". The fact that these

qualifications are now attributed to the manager may be indicative of her view of the young model. Moreover, both nouns are grammatically connected because of the (nominalised) attributive ditransitive construction in which an agent (model manager Arlene) transforms a patient (the 'old' Paula) into a different version of that same patient (the 'new' Paula). As a result, it can be argued that the source domain sense of 'filly' is promoted, making 'filly' a potentially deliberate metaphor. Eventually, the complete utterance stands out as a metaphorical comparison between a girl and an animal.

The explicit comparison between the model and the horse can also be interpreted as reflective of the way in which Arlene looks at her models. That is, one of the implications of the use of this particular metaphor may be that the manager is especially concerned with creating (see before) winning models, and not so much with the well-being of the models per se. In fact, if the metaphorical comparison between the model and the horse would not have been used, this attitude might have been less obvious. If the final sentence of (4') simply read: 'But the transformation of a young girl into a beautiful model had been her doing', it would still be clear that Arlene felt responsible for this development, but her 'creations' would be talked about in terms of people, not animals. The use of the filly-to-racehorse metaphor thus contributes to the overall characterisation of a personage, which illustrates the specific communicative function that metaphor can have.

Thus, the analysis of the simile in (4) in its surrounding co-text (i.e., 4') yields a more detailed view of Arlene's attitude towards her models. The explicit comparison between a girl and a 'creation' already suggests that Arlene has a particular view on her job. As becomes clear from the analysis of this direct comparison in co-text, the simile forms a deviation from the rest of the text: the utterances preceding and following the simile contain lexical units that can be identified as metaphors at the levels of language and thought, but that are not used *as* metaphors at the level of communication. The only other metaphors in (4') that can be identified *as* metaphors in the communicative dimension, namely 'filly' and 'racehorse', provide further insight into Arlene's character. Similar to the analysis of (3) versus (3'), the addition of co-text to the simile in (4) does not affect the identification of 'creation' as a potentially deliberate metaphor but it does effect the further analysis of the simile. It shows how explicit metaphorical comparisons ('creation', in combination with 'filly' and 'racehorse') can stand out from the rest of the discourse to create and reinforce an image of a particular character in a story.

As our analyses in (3) and (4) show, metaphors may be identified as potentially deliberate metaphors in relative isolation – i.e., based solely on their analysis within the utterance in which they are used. However, we have also shown how considering co-text may provide further insight into the function of potentially deliberate metaphors in discourse. The simile in (3) stands out in the discourse because it is surrounded by non-deliberate metaphors that are not related to the safari-metaphor. By contrast, the simile in (4), which at first sight seems much less rich in terms of content than the simile in (3), shows to be part of a telling characterisation of one of the personages in a novel. This shows how co-text can serve as a valuable addition to the further *analysis* of metaphors that are identified as potentially deliberate in relative isolation.

5.3.2 The role of co-text in the identification of potentially deliberate metaphor

In the second case study, we investigate the role of co-text in extended metaphors that contain both conventional and novel metaphors. A metaphor is extended when "several metaphorical expressions evoking the same source domain and describing the same target domain [occur] in close proximity to one another in a text" (Semino, 2008, p. 227).[7] What 'close proximity' means typically differs from one study to the next (see Semino, 2008). In this paper, we follow Crisp, Heywood, and Steen's (2002) definition which holds that metaphor is extended when two or more consecutive semi-independent clauses contain metaphors that display the same mapping between source and target domain.

Both examples discussed in this section show how taking co-text into account can be essential in the *identification* of metaphors as potentially deliberate. In fact, when analysed in isolation, the metaphors under consideration in the two examples can be analysed as metaphors at the dimensions of language and thought, but not at the dimension of communication. The first example, (5), comes from a book review from the news part of the VUAMC.

[7] Please note that Semino (2008) distinguishes between textual and conceptual extension. The latter case concerns "[t]he exploitation of normally unused elements of the source domain in the realization of a conventional conceptual metaphor" (2008, p. 227). In this paper, when we refer to extension, we mean textual extension.

(5) [It was] unfair of Auden to suggest, in[MRW] his 'Letter to Lord Byron', that a poet's 'sense[MRW] of other people's very hazy[MRW-delib]'.

(VUAMC-A36-07)

Example (6) is taken from a newspaper article that describes the miserable state of Welsh rugby.

(6) The selectors knew they were playing[MRW-delib] with[MRW-delib] fire[MRW-delib] when they decided to arrange[MRW] a couple of club fixtures[MRW]

(VUAMC-A1N-09)

Both (5) and (6) contain conventional metaphors that describe the target domain of the utterance in which they are used in terms of some other source domain. Several lexical units in both examples are identified as metaphors at the dimensions of language and thought. In the remainder of this subsection, though, we are only concerned with the analysis of those metaphors that DMIP identifies as potentially deliberate at the dimension of communication: 'hazy' in (5) and 'playing with fire' in (6).

When analysing these two examples in relative isolation only, no cues are present that suggest that the source domain meanings of these metaphors are present in the referential meaning of the utterance in which they are used. That is, there is no indication that these lexical units – which can be identified as metaphors at the dimensions of language and thought – are used *as* metaphors in the dimension of communication (see also Krennmayr, 2011). The adjective 'hazy' in (5) has a conventionalised metaphorical meaning that fits the target domain of the impression or ideas that poets have of other people: "a hazy memory is one that you cannot remember well" (MM3). The idiom 'playing with fire' in (6) has a conventionalised meaning that matches the target domain of the utterance – which is concerned with "doing something dangerous or risky that could cause lots of problems" (*Macmillan*).

Yet, DMIP identifies both the adjective in (5) and the idiom in (6) as potentially deliberate metaphors. The following detailed analyses show the role of co-text in the *identification* of these metaphors in (5) and (6) as potentially deliberate metaphors. Extract (5') shows the use of 'hazy' in its immediate co-text.

(5') [It was] unfair of Auden to suggest, in[MRW] his 'Letter to Lord Byron', that a poet's 'sense[MRW] of other people's very hazy[MRW-delib]'. But the

> vaporous[MRW-delib] presences[MRW] that float[MRW-delib] through[MRW] this[MRW] slender[MRW-delib] and anaemic[MRW] first novel by a notable poet would appear to support[MRW] the claim.
>
> (VUAMC-A36-07)

Extract (5') starts by characterising as 'unfair' a quote by the British poet W.H. Auden, which suggests that poets have an unclear sense of other people. The author then goes on to argue that the quote might nevertheless be true for the book he is reviewing, based on his first impression of it.

The extract in (5') displays an extended metaphor in which the impression that poets have of other people is described in water-related terms.[8] That is, the first two sentences of the review, presented in (5') above, contain a total of three lexical units that have a water-related source domain meaning: 'hazy', 'vaporous', and 'float'. Of these, 'hazy' is part of the quotation from W.H. Auden who describes a characteristic of poets. As was pointed out above, the adjective 'hazy' in this first sentence is not identified as potentially deliberate if it is analysed exclusively within the utterance in which it is used. However, the second sentence of (5') contains another adjective with a water-related source domain: 'vaporous'. This adjective is used to characterise the quality of the characters in the reviewed book. In contrast to 'hazy', no conventionalised sense description is available for 'vaporous' that matches the target domain of the utterance. In fact, only one sense description is available in the dictionary: "very small drops of water or other liquids in the air that make the air feel wet" (*Macmillan*).[9] This adjective thus presents a novel perspective onto the target domain, making 'vaporous' a potentially deliberate metaphor.

The reviewer moreover argues that the characters 'float' through the novel. Although a conventionalised meaning is available for this verb that matches the target domain of the utterance ("to behave in a way that shows you do not have a clear plan for what you want to do"; MM4), the combination with 'vaporous' creates an image of the characters in the book in which the metaphors are clearly used *as* metaphors at the dimension of communication. It presents the vague and aimlessly behaving characters as consisting of small

[8] Extract (5') contains another potentially deliberate metaphor ('slender'), but this metaphor is not part of the extended metaphor analysed in this subsection. Therefore, it will not be discussed further at this point.

[9] Please note that there is no separate entry in *Macmillan* for the adjective 'vaporous', only for the noun 'vapour'. Following the MIPVU guidelines (Steen et al., 2010, p. 36), we use the sense description provided for the noun to analyse the adjective.

drops of water ('vapour') that are "lighter than air, and [slowly] move through it" (MM2 for 'to float').[10]

When analysing (5) in its surrounding co-text, it becomes clear that the utterance is part of an extended metaphor that stretches over two consecutive sentences, and consists of three metaphors. This extended metaphor can be identified as metaphor at the communicative dimension because of the novel use of 'vaporous' and the promotion of the water-related meanings of the two other metaphorical lexical units. The co-text of (5) thus consists of an extended metaphor that stands out *as* a metaphor at the dimension of communication, leading to the *identification* of a metaphor as potentially deliberate ('hazy') that would not be identified as potentially deliberate if co-text would not have been taken into account.

Furthermore, in the first sentence of the article, the reviewer argues that it was not fair of some author to claim that poets do not have a clear idea of other people. In this sentence, the reviewer thus speaks in defence of poets. In the second sentence of the review, however, the reviewer has reconsidered this qualification when he argues that the characters in the reviewed book indeed show signs of such 'haziness' in the mind of the poet. The contrast between the evaluation of the quotation presented in the first sentence, and the evaluation of the novel presented in the second sentence may make the metaphor stand out even more.

We now turn to the analysis of example (6). Extract (6') presents the 'playing with fire'-example discussed in (6) in its surrounding co-text. Extract (6') is about high officials in the Welsh national rugby team who took risks when they planned matches against Welsh club teams, because the national team lacks quality. It is pointed out how this has led to some very humiliating lost matches, and how the New Zealand team, which will now come to play against Wales, will finish this cycle by also winning the match against the Welsh.

(6') Rugby Union: Welsh horizon$^{\text{MRW-delib}}$ all turns black$^{\text{MRW-delib}}$.
By STEVE BALE.

[10] It might also be argued that MM1 is the basic sense of 'to float', but this would make for an inconsistent source domain description as drops of water do not typically "rest or move slowly on the surface of a liquid and not sink" (MM1). Rather, they move through the air – as is also indicated by the sense description of 'vapour'. Moreover, as the examples in the dictionary show, the MM1 sense of 'to float' typically collocates with 'on/in/by/along/towards', while MM2 collocates with 'in/through/across/over', which is also the case in (5').

> EACH new indignity in[MRW] the heap[MRW] visited[MRW] on[MRW] Welsh rugby seems worse than the last. The selectors knew they were playing[MRW-delib] with[MRW-delib] fire[MRW-delib] when they decided to arrange[MRW] a couple of club fixtures[MRW] and they have duly been consumed[MRW-delib] in[MRW] a conflagration[MRW-delib] of their own making[MRW]. The New Zealanders, appropriately garbed in funereal black, arrive next week to scatter[MRW-delib] the ashes[MRW-delib].
>
> (VUAMC-A1N-09)

The extract in (6') displays an extended metaphor in which the (near) future of Welsh rugby is described in terms of the emergence and results of a devastating fire. The extract contains several lexical units that each have a fire-related source domain meaning: 'consumed', 'conflagration', and 'ashes', and that are now used to describe the target domain of rugby. The extract (6') opens with a headline that summarises the fire-metaphor. This headline is discussed at the end of the analysis of this example. Although the first sentence of the core of the article contains lexical units that can be identified as metaphors ('in', 'visited', and 'on'), these are not part of the fire-metaphor. For this reason, they will not be discussed in this subsection.

The extended metaphor begins in the second sentence of the article, with the 'playing with fire'-idiom. As was pointed out in the discussion of (6), this idiom contains a single sense description in the dictionary that matches the target domain of the utterance ("doing something dangerous or risky that could cause lots of problems for you"; *Macmillan*). Consequently, the idiom is not identified as a potentially deliberate metaphor when it is analysed in relative isolation. However, the source domain meanings of the lexical units in the idiomatic expression become prominent when, in the second half of the sentence, the fire that the selectors were 'playing with' turns into a large fire that causes a lot of damage (a 'conflagration'). Whereas 'playing with fire' may still sound innocent, the consequences – i.e., being 'consumed' in a 'conflagration' – clearly are not. The novel use of 'conflagration' to describe the state of a national rugby team makes the fire-related source domain meaning of the idiomatic expression prominent as well, causing the metaphors to stand out *as* metaphors in communication.

The fire-metaphor continues in the next sentence, in which the results of the fire are taken care of. That is, the New Zealand national team will come to 'scatter the ashes' of what is left of the Welsh team (see also Krennmayr, 2011). This scattering serves as a final part of the extended fire-metaphor. The

extended metaphor thus describes three consecutive steps; it first describes the risks that the selectors took, then it describes the resulting consequences, and finally it describes a final stage in which nothing is left of Welsh rugby.[11]

Given the above analysis, the title of the article, 'Welsh horizon all turns black', may be analysed as a summary of the extended metaphor that is developed in the first part of the article. In the source-domain sense, the horizon turns black as a result of the fire, while in the target-domain sense, the future of Welsh rugby looks bad. The title of the article may also be seen as a playful allusion to the phrase 'light on the horizon'. This phrase has one conventional meaning in the dictionary: "something that makes you think that a difficult situation will improve" (*Macmillan*). By adjusting the phrase in such a way that the light becomes something dark, the title of this newspaper article already suggests that things may still become worse instead of improve for Welsh rugby.[12]

The analyses in (5) and (6) show a different role of co-text than the examples discussed in (3) and (4). That is, the metaphors in (3) and (4) can be identified as potentially deliberate in isolation because they display signalled comparisons between the target domain of the utterance and some explicitly mentioned source domain. By contrast, the metaphors in (5) and (6) are not identified as potentially deliberate metaphors when they are analysed in isolation. Thus, although the metaphors in isolation as presented in (5) and (6) can be identified as metaphors at the level of language and thought, additional information is needed to determine whether they also count as metaphors at the dimension of communication. Such additional information is provided by the co-text, which in both (5') and (6') showed to contain important information to identify the metaphors in question as potentially deliberate. In the case of (5), the co-text contains several other potentially deliberate metaphors that express the same source-target domain mapping. The co-text of (6) displays an extended metaphor with multiple metaphors expressing the same source-target domain; in this case in the form of a 'scenario' (Musolff, 2004; see Semino,

[11] Please note how context (information from outside the text) may contribute additional information for the analysis of this metaphor: 'the Ashes' refers to a series of three rugby matches that are played between Great Britain (note: not Wales) and Australia (note: not New Zealand; see Hickey, 2006, p. 13).

[12] Please note how context may also contribute to the analysis of the adjective 'black': The New Zealand rugby team are known as the 'All Blacks', referring to their entirely black outfit. 'Black' in the title of the article may thus metonymically stand for the New Zealanders. The nickname is referred to again in the final sentence in (6'), where the New Zealanders are said to arrive 'properly garbed in funereal black'.

2008) describing three stages of a fire. This shows how co-text can serve as an essential aspect in the *identification* of potentially deliberate metaphor in language use.

5.3.3 Recurrent metaphor as co-text in the analysis of potentially deliberate metaphor

The third and final case study in this paper is concerned with the role of co-text in the case of recurrent metaphors. Recurrent metaphor is defined as "the use of different expressions relating to the same broad source domain in different parts of a text" (Semino, 2008, p. 23; see also the notion of 'metaphor chains' in Koller, 2003b). In this case study, we discuss two examples from our corpus that contain recurrent metaphors. Similar to the previous two case studies, we first present the two examples in relative isolation (utterance level), followed by a detailed analysis of the examples and their co-text. Example (7) is taken from a newspaper article that describes the return of the western on television.

(7) the TV western is struggling[MRW-delib] back[MRW-delib] into[MRW-delib] the saddle[MRW-delib].

(VUAMC-A2D-05)

Example (8) is taken from a newspaper article about the establishment of a Palestinian state.

(8) First, it [i.e., an escalation of the Intifada] would consolidate[MRW] the structures[MRW-delib] of the developing[MRW] national authority

(VUAMC-A9J-01)

Both examples contain various conventional metaphors. In the remainder of this subsection, we focus on the cases that DMIP identifies as potentially deliberate metaphors.

Before we investigate the role of co-text in (7), let us first consider the utterance in isolation again. In this example, the verb 'to struggle', the adverb 'back', the preposition 'into', and the noun 'saddle' can be identified as metaphors at the dimensions of language and thought based on the presence of conventionalised target domain sense descriptions in the dictionary. Moreover,

the metaphors in this example can be identified as potentially deliberate without having to take additional co-text into account. The reason for this is that this example displays a case of topic-triggered metaphor in which the metaphors allude to the topic of the text (Koller, 2003a; Herrera Soler, White, Villacañas, & Amengual, 2006; see also Krennmayr, 2011). Specifically, these lexical units are used to describe the revival of the western on television in terms of a person trying to get back on a horse. Because of the direct link with the topic of the text – the return of the western on television – both the target and the source domain meaning of the words are present in the referential meaning of the utterance. As a result, these metaphors stand out *as* metaphors at the dimension of communication. The fact that the western takes the grammatical position of the agent – metonymically representing the cowboy who is trying to get back on his horse – only strengthens this view.

Although (7) can thus be identified as containing potentially deliberate metaphors when analysing the example in isolation, the surrounding co-text also contributes to the overall analysis. In fact, topic-triggered metaphors that all describe the come-back of the western on television in terms of typical 'western scenes' are spread throughout the entire text. (7') displays the key examples of this recurrent metaphor.

(7') [B]ut a revival of the western looms[MRW-delib] on[MRW-delib] the horizon[MRW-delib] (...) The TV western seemed to fade[MRW-delib] into[MRW-delib] the sunset[MRW-delib] some time in[MRW] the mid-1970s (...) There are encouraging signs[MRW], however, that the TV western is struggling[MRW-delib] back[MRW-delib] into[MRW-delib] the saddle[MRW-delib]. (...) Will the western ride[MRW-delib] again? (...) It is premature[MRW], then, to say that the western has galloped[MRW-delib] back[MRW-delib] to[MRW-delib] centre[MRW] screen. But there is a puff[MRW-delib] of dust[MRW-delib] on[MRW-delib] the horizon[MRW-delib]. (VUAMC-A2D-05)

These examples are spread throughout the text, but all express the same mapping between the development of the TV western and scenes that are typically displayed in westerns, making this a case of recurrent metaphor. The various 'western scenes' all have different connotations and are used in different parts of the article. The very first instance of this chain of metaphors (Semino, 2008; see Koller, 2003b) deserves particular attention. The verb 'to loom' has a conventionalised meaning in the dictionary that matches the target domain of the text. At the same time, it is revealing of the author's opinion about the

possible success of the revival of the western that he describes: "if something *unpleasant* or *difficult* looms, it seems likely to happen soon" (MM2; emphasis added). As this sense description points out, the agent that does the looming is typically something unpleasant or difficult – and in (7/7'), the western takes this position of agent. The author thus seems not fully confident that the come-back of the western is going to be a success (or, alternatively, that such come-back is desirable).

The analysis of (7') shows how the notion of 'co-text' can be stretched up to an entire text in the case of recurrent metaphor. The first manifestation ('a revival looms...') of the recurrent western-metaphor in the newspaper article is found at the very beginning of the text, while the last manifestation ('there is a puff of dust') can be found in the final sentence of the article. As Koller (2003b) indicates, beginnings and endings are key points in a text, so the use of potentially deliberate metaphor may serve specific functions there, such as to express a standpoint or opinion in order to persuade the audience. All the manifestations of the western metaphor in (7') can be identified as potentially deliberate metaphors when analysed in isolation. However, the addition of co-text reveals a recurrent pattern of the same metaphor that provides further insight into the meaning of the struggle than was described in isolation in (7).

Example (8) also contains several lexical units that can be identified as metaphors at the dimensions of language and thought based on the presence of conventionalised target domain sense descriptions in the dictionary ('consolidate', 'structures', 'developing'). In the remainder of this analysis, the focus is on the noun 'structures'. This noun conventionally describes the organisation of the Palestinian state in terms of a building. In terms of the analysis of the communicative status of the metaphor, no cues are present in (8) that suggest that 'structures' functions *as* a metaphor at the dimension of communication. Yet, DMIP *does* identify this noun as a potentially deliberate metaphor. To discuss why 'structures' in (8) is identified as a potentially deliberate metaphor by DMIP, we analyse the surrounding co-text, starting with the immediate co-text in (8') below.

(8') [An escalation] of the Intifada in[MRW] this[MRW] direction[MRW] would serve[MRW] two purposes at once. First, it would consolidate[MRW] the structures[MRW-delib] of the developing[MRW] national authority which is competing[MRW] to replace[MRW] the occupation authority. Second, it

would consolidate[MRW] the image[MRW] and essence[MRW] of the Intifada as a constructive, not a destructive, force[MRW].

(VUAMC-A9J-01)

Extract (8') contains several lexical units that are identified as metaphors at the dimensions of language and thought, among which 'in', 'direction', 'consolidate', and 'image'. However, none of these metaphors are identified as metaphors at the dimension of communication. No cues are present in this part of the co-text of (8) that suggest that the source domain meanings of these lexical units are part of the referential meaning of the utterances in which they are used. Although (8') thus contains a cluster of metaphors, in that it is rich in metaphors that express different mappings (Semino, 2008), these metaphors are not identified as potentially deliberate at the communicative dimension of metaphor.

As becomes clear from the analysis of (8'), it is not possible to identify the noun 'structures' in (8) as potentially deliberate based on its immediate co-text. This only becomes possible when taking into account even more co-text, which is presented in (8'') below. This extract displays part of the newspaper article that precedes (8).

(8'') The masses[MRW] are being engaged in[MRW] the craft[MRW-delib] of state-masonry[MRW-delib]. In[MRW] this[MRW] process of state building[MRW-delib], many stages[MRW] have been covered[MRW].

(VUAMC-A9J-01)

The extract in (8'') contains an extended metaphor that describes the contribution of the Palestinian people ('the masses') in the process of creating a Palestinian state in terms of skilfully building something that consists of bricks/stone. The novel compound 'state-masonry' in particular stands out *as* a metaphor because it combines a non-metaphorical target domain word (state) with a source domain word (masonry). Specifically, the noun 'masonry' contains a single sense description in the dictionary that is concerned with building/constructing: "the bricks or stones that make a building, wall, or other structure" (*Macmillan*). In (8''), this noun is used to describe the target domain of creating a state, as such providing a new perspective on the topic of the text. The potentially deliberate status of 'masonry' makes the building-related source domain meanings of two other metaphors – 'craft', and 'building' – in (8'')

prominent, too. This, in turn, leads to the identification of these metaphors as potentially deliberate.

Although (8'') is situated about ten lines before 'structures' in (8) in this newspaper article, we argue that it is because of the extended potentially deliberate metaphor earlier in the article that 'structures' in (8) can count as a potentially deliberate metaphor as well (see also Beger, 2011). In fact, the building-metaphor is repeated several times in the intermediate text. For instance, the nouns 'landmark' ("a famous building or object that you can see and recognize easily"; MM1) is used to describe the importance of the issuing of the Palestinian Declaration of Independence. The verb 'to build' ("to make a building or other large structure by putting its parts together"; MM1) is used (again) to describe the creation of the Palestinian state. It is because of this recurrent metaphor that 'structures' in (8) is identified as a potentially deliberate metaphor.

Thus, the analysis of (8) – (8''), shows how some metaphors can only be identified as potentially deliberate metaphors when larger stretches of co-text are taken into account. The recurrent 'building/construction metaphor' that constitutes a potentially deliberate (extended) metaphor in an earlier part of a text can promote the building source domain of metaphors that are used later on in the text. Example (8) is similar to examples (5) and (6) in that the co-text may be essential in the identification and further analysis of conventional metaphors as potentially deliberate. At the same time, (8) is different from the other two examples in that it illustrates how such conventional metaphors need not be part of an extended metaphor to be identified as potentially deliberate, but can also be part of a recurrent metaphor that is spread over larger parts of a text.

Compared to the analyses presented in the previous two case studies, the analysis of the role of co-text in (7) and (8) points out that potentially deliberate metaphors may be both *identified* and *further analysed* by taking into account an even broader co-text than the (semi-)independent clause (discussed in case study 1) or the immediate co-text (discussed in case study 2). In the third case study, we presented one example, (7), that can be identified as containing potentially deliberate metaphors when studied in isolation, and one example, (8), that cannot be identified as containing potentially deliberate metaphors when studied in isolation. The detailed analyses of the co-text surrounding these two examples showed how the recurrence of metaphor can either provide further insights into the ideas and opinions of an author (as in the western-example), or enable the

identification of potentially deliberate metaphor (as in the Palestine-example). These analyses again show how co-text contributes in important ways to the identification and analysis of potentially deliberate metaphor in discourse.

5.4 Conclusion and discussion

In this paper, we investigated the role of co-text in the identification and analysis of potentially deliberate metaphor in natural language. We took a semiotic approach to deliberate metaphor, studying language use on the basis of texts, and discussed a series of case studies from our annotated corpus of potentially deliberate metaphor. In these case studies, we showed how co-text can either be important in the *identification* and/or in the further *analysis* of potentially deliberate metaphor. Whereas lexical units may often be identified as metaphors at the dimensions of language and thought when they are presented in (relative) isolation – i.e., at utterance level – the analyses in this paper show that this is not always sufficient to account for the communicative dimension of metaphor. To analyse the status of metaphors *as* metaphors at the communicative dimension, analysts need to look beyond the utterance more frequently than when analysing metaphor at the other two dimensions. In fact, as the analyses in this paper have shown, in the most 'extreme' case potentially deliberate metaphors can only be identified as such when additional co-text is taken into account.

This is not to say, though, that the addition of co-text causes a shift in what counts as the unit of analysis in the application of DMIP – the method for the identification of potentially deliberate metaphor on which our analyses are based. Rather, it evokes a distinction that is well-known in the social sciences between two types of units that are part of every content analysis: the 'recording/coding unit' on the one hand, and the 'context unit' on the other (Krippendorff, 2013). The 'recording/coding unit' is defined as the unit that is used for separate coding and description, and thus constitutes the unit of analysis. Recording/coding units are "the smallest units that bear all the information needed in the analysis" (Krippendorff, 2013, p. 101). In the analyses discussed in the current paper, our recording/coding unit (i.e., the unit of analysis) is the lexical unit. Coding potentially deliberate metaphor at the level of the lexical unit provides the possibility to examine, for instance, the distribution of potentially deliberate versus non-deliberate metaphors in language use. 'Context units', by contrast, are defined as "units of textual matter that set limits on the information to be considered in the description of recording units"

(Krippendorff, 2013, p. 101). For the identification of metaphor at the dimensions of language and thought, the context unit may most often (but not always) be the utterance. However, for the analysis of metaphor at the communicative dimension, the utterance is often (but not always) too small to count as the context unit. In fact, as the analyses in this paper have shown, to determine whether a metaphor counts as a case of potentially deliberate metaphor at the dimension of communication, the context unit often needs to be extended beyond the utterance.

According to Krippendorff (2013), the ideal context unit is long enough to allow valid analyses, and short enough to yield reliable analyses. In the analysis of fiction, for instance, he suggests that the maximum length of the context unit may be the chapter. Along these lines, the maximum length of the context unit in the analysis of newspaper articles may be the entire article, for academic texts the entire chapter/paper, and for face-to-face conversations the entire conversation. The analyses discussed in the current paper fit with this definition, as the maximum amount of co-text that we have taken into account is an entire newspaper article. At the same time, however, our analyses have also shown that it is not always necessary for the identification of metaphors as potentially deliberate to take the entire text into account.

The case studies discussed in this paper illustrate the complexity of the analysis of metaphor in discourse, in particular when investigating the communicative dimension of metaphor. It is true that some of the armchair examples of metaphor studies, including Shakespeare's 'Juliet is the sun' and 'Shall I compare thee to a summer's day?', and Wordsworth's 'I wandered lonely as a cloud' can be identified *as* metaphors at the dimension of communication without taking additional co-text into account. However, as we have shown, the analysis of metaphor in communication can also be more complex, and potentially deliberate metaphors may even be overlooked if co-text is not taken into account. Moreover, investigating how co-text influences the identification of potentially deliberate metaphors provides more detailed insights into the way in which metaphors work *as* metaphor (as specific rhetorical devices) in communication.

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Chapter 6

How viruses and beasts affect our opinions (or not): The role of extendedness in metaphorical framing[1,2]

Abstract

Based on the assumption that extended metaphor constitutes a case of deliberate metaphor and therefore has the potential to influence people's opinions, this paper investigates whether extending a metaphorical frame in a text leads people to perceive policy measures that are in line with that frame as more effective for solving a crime problem than other policy measures. The metaphorical frames 'Crime is a virus' and 'Crime is a beast' were extended in one experiment each via a series of additional conventional metaphorical expressions having crime as the target domain and beasts/viruses as the source domain. Participants (N = 354, Experiment 1; N = 361, Experiment 2) were randomly assigned to one of five experimental conditions with increasing numbers of sentences containing metaphorical expressions, and rated the effectiveness of a set of policy measures to solve the crime problem described in the text. The data yield limited support for our hypothesis. When controlling for political affiliation, the ratings for frame-consistent measures trended in the hypothesised direction in Experiment 2. Experiment 1 yielded a trend for frame-

[1] A slightly different version of this chapter appeared as: Reijnierse, W.G., Burgers, C., Krennmayr, T., and Steen, G.J. (2015). How viruses and beasts affect our opinions (or not): The role of extendedness in metaphorical framing. *Metaphor and the Social World 5*(2), 245-263. doi:10.1075/msw.5.2.04rei

[2] The data and data-analytical procedures of the Experiments are publicly accessible on the Open Science Framework (OSF) at https://osf.io/63ym9/.

inconsistent measures. These results suggest that metaphorical framing effects may be more subtle than has been assumed.

6.1 Introduction

One of the most important theoretical claims about metaphor is that it can influence reasoning, for example via the process of highlighting and hiding: metaphorical source domain concepts can lead us to pay attention to specific aspects of a target concept while other aspects are left aside or hidden (Lakoff & Johnson, 1980). For instance, when talking about solving a crime problem, one can say that crime is a *virus* and that it should be prevented by making people *immune*, thereby highlighting the idea that reforming people's behaviour can solve the problem. Alternatively, one can say that crime is a *beast* and that it should be prevented by *trapping* criminals, thereby highlighting the idea that strict law enforcement can solve the problem (cf. Thibodeau & Boroditsky, 2011, 2013; Steen, Reijnierse, & Burgers, 2014). In the crime-as-a-virus approach, this idea of law enforcement is hidden, while in the crime-as-a-beast approach, the idea of reform is hidden.

The very fact that highlighting and hiding are at the core of metaphor may make it the framing device *par excellence,* as framing is defined as "[...] select[ing] some aspects of a perceived reality and mak[ing] it more salient in a communicating text, in such a way as to promote a particular problem definition, causal interpretation, moral evaluation, and/or treatment recommendation for the described item" (Entman, 1993, p. 52). The angle of how to think about a given issue may influence the way in which that issue is actually understood or evaluated by addressees (Scheufele & Tewksbury, 2007). From here, it is only a short step to argue that the choice of a metaphorical frame may have the potential to exert an effect on social-policy questions (Schön, 1979), and that politicians could use this to propagate their own views. For example, in the example about crime discussed above, left-wing politicians might prefer to solve a crime problem by focusing on reform and consequently frame it in terms of a virus. By contrast, right-wing politicians might prefer to approach the issue from an enforcement-oriented standpoint, and frame it in terms of a beast. By investigating the effect of different frames, we can learn more about the possible impact of political viewpoints (represented in the form of a metaphorical frame) on voters' opinions and behaviours.

Empirical studies investigating the effects of metaphorical framing show mixed results. Some studies (e.g., Robins & Mayer, 2000; Thibodeau & Boroditsky, 2011, 2013) have found that people prefer different policy measures when they read different metaphorical frames. Participants in Thibodeau and Boroditsky's (2011, 2013) studies read a text about a city's crime problem in which crime was either framed metaphorically as a beast or as a virus. Then, they were asked to indicate their preferred solution to the crime problem. Across experiments, Thibodeau and Boroditsky (2011, 2013) found that participants in the crime-as-a-beast condition were more likely to prefer enforcement-oriented, direct solutions to the problem, such as increasing street patrols and prison sentences, than those in the virus-condition. Participants in the crime-as-a-virus condition displayed a higher preference for reform-oriented solutions than those in the beast-condition, concentrating on prevention such as reforming education and expanding welfare programs.

This approach has been critiqued for the lack of a non-metaphorical control condition that could serve as a baseline (Hartman, 2012; Steen et al., 2014). Without such a control condition, it is not possible to determine whether the effect is due to the metaphoricity of the frame, or a general framing effect (see Lau & Schlesinger, 2005). Indeed, some studies comparing metaphorical with non-metaphorical frames found that the former have a bigger influence on people's opinions than the latter (e.g., Hartman, 2012; Kalmoe, 2014; Scherer, Scherer, & Fagerlin, 2015). Nay and Brunson (2013) investigated whether support for removing surplus conifers increased as a result of framing the conifer increase metaphorically as an invasion, compared with non-metaphorically as encroachment/expansion. Participants in the invasion-frame rated conifer removal as significantly more acceptable than participants in the expansion-frame. On the other hand, other studies found no difference between metaphorical and non-metaphorical frames (e.g., Steen et al., 2014).

These contrasting findings raise the question under which precise conditions a metaphorical framing effect may or may not take place (Steen et al., 2014). One essential variable to consider may be the number and type of metaphorical expressions used in the experimental texts. Tewksbury, Jones, Peske, Raymond, and Vig (2000) investigated extended non-metaphorical frames and found that increased presence of a frame within a single text made participants more likely to accept policy measures that were in line with (or suggested by) that frame. Conversely, in a meta-analysis on the persuasive effects of metaphor, Sopory and Dillard (2002) investigated the role of extendedness versus non-extendedness of metaphorical frames and did not find

statistically significant differences between extended and non-extended metaphorical frames. Steen et al. (2014, p. 20) also found no effect of what they call "metaphorical support": participants' preferences for solutions to a crime problem were not influenced by whether they read a single or multiple metaphorical expressions.

The absence of a metaphorical framing effect in Steen et al.'s (2014) studies could be caused by the fact that, in these studies, the metaphorical expressions extending the initial frame were ambiguous between both frames they investigated ('Crime is a beast' and 'Crime is a virus'). Their experimental texts included metaphorically-used words like 'vulnerabilities', 'weakened', and 'succumbed'[3], which can be interpreted both in terms of the crime-as-a-beast and the crime-as-a-virus frame.

Based on these diverging observations, we examine the influence of textual extendedness as a condition for the appearance of a metaphorical framing effect in the present paper. We do so under the assumption that extended metaphor constitutes a case of deliberate metaphor (Krennmayr, 2011; Steen, 2011, 2015) and that it therefore has the potential to draw the addressee's attention away from the target domain to the source domain (cf. Steen, 2008, 2011). This may consequently sway his preference for policy measures. We thus hypothesise that:

H1: Extending a metaphorical frame in a text by increasing the number of metaphorical sentences expressing it will lead participants to display higher ratings of perceived effectiveness of policy measures that are in line with that frame.

6.2 Method

To investigate our hypothesis, we report two experiments in which we separately extended the metaphorical frames 'Crime is a beast' and 'Crime is a virus' via a series of additional conventional metaphorical expressions having crime as the target domain and beasts/viruses as the source domain ("textual extension", Semino, 2008).

[3] It should be noted that Steen et al. (2014) used the experimental texts used by Thibodeau and Boroditsky (2011, 2013). However, Thibodeau and Boroditsky did not investigate metaphor extendedness as such.

6.2.1 Ethics statement

Data were collected in accordance with ethical guidelines of our institution.[4] Participants were asked to tick a box to provide informed consent on the first page of the survey, on which it was also indicated that their answers would be treated anonymously, that they could quit the survey at any moment, and that – by participating – they agreed that their data would be analysed for the purpose of our study.

6.2.2 Design and Materials

Both experiments used a single-factor, between-subjects design. The independent variable was the number of metaphorical sentences in the stimulus text, which varied between 1 to 4. We also included a non-metaphorical control condition.

The experimental materials were loosely based on those used by Thibodeau and Boroditsky (2011, 2013), and Steen et al. (2014), in the sense that they were based in the fictitious city of Addison, and used the same frames (metaphorical: 'Crime is a beast', 'Crime is a virus'; non-metaphorical: 'Crime is a problem' the latter only used by Steen et al., 2014). The texts resembled a short news report in which the Mayor of the city of Addison made an announcement about crime in his city. All metaphorical expressions were positioned in the Mayor's quote, which was preceded by two sentences forming a general introduction to provide some context to the text. Both experiments contained five different versions of the experimental text. In each experiment, the number of words was the same across conditions, which only differed in the number of sentences containing metaphorically-used expressions – from zero (in the non-metaphorical control condition), up to four.

Contrary to earlier studies that used these frames (Thibodeau & Boroditsky, 2011, 2013; Steen et al., 2014), the additional metaphorical expressions that we used could unambiguously be assigned to a single metaphorical frame. With the help of the *Macmillan* dictionary (Rundell, 2002) and MIPVU (Steen, Dorst, Herrmann, Kaal, Krennmayr, & Pasma, 2010), we selected metaphorical expressions having crime as the target domain and either

[4] See http://fsw.vu.nl/en/departments/communication-science/research/good-researchpractice-guidelines/index.asp.

viruses (Experiment 1) or beasts (Experiment 2) as the source domain. This yielded words like 'cure' and 'symptom' for Experiment 1, and 'predatory' and 'prey on' for Experiment 2. The noun 'plague', which has a meaning related to illness (*Macmillan* sense description 1; hereafter MM1 etc., where MM refers to Macmillan, and the number refers to the numbered sense descriptions in the online version of the dictionary), but also one related to animals (MM3), was discarded because it could be connected with both the virus and the beast frame. Table 6.1 gives an overview of the experimental texts.

We also controlled for conventionality, as the distinction between novel and conventional metaphor might interact with the emergence of a metaphorical framing effect (Sopory & Dillard, 2002; Steen, 2015; see also Krennmayr, Bowdle, Mulder, & Steen, 2014). In line with MIPVU (Steen et al., 2010) and Semino (2008), metaphors were considered novel if the metaphorical meaning is not (yet) present in the dictionary. Consequently, the noun 'diagnosis', which has only one sense description in *Macmillan* ("a statement about what disease someone has, based on examining them"), but could also be applied metaphorically to determine features of the crime problem, was not allowed in Experiment 1. In the same way, the verb 'domesticate' was discarded from Experiment 2 because it only has an animal-related sense description in the dictionary ("to train an animal to live with or work for humans") and was therefore considered a novel metaphor.

Finally, following a suggestion for further research in Steen et al. (2014), we presented the crime problem in Experiment 1 as a long-term problem, and in Experiment 2 as a short-term problem by adding a reference to time in the sentence introducing the announcement of Mayor Smith: crime was said to have increased *over the past 10 years* in Experiment 1, and *over the past year* in Experiment 2. In much the same way as the virus frame might lead to preference for reform-oriented policy measures, and the beast frame to enforcement-oriented policy measures to solve the crime problem, long-term problems may lead to a preference for reform-oriented, and short-term problems to a preference for enforcement-oriented measures.

6.2.3 Instrumentation

Dependent variables

Participants were asked to evaluate the effectiveness of a series of policy measures, again loosely based on Thibodeau and Boroditsky (2011, 2013). Two sets of measures were created, one in line with the crime-as-a-virus frame, focusing on reform, and the other in line with the crime-as-a-beast frame, focusing on enforcement (see Table 6.2).

Table 6.2

Enforcement-oriented and reform-oriented policy measures used as the dependent variables in Experiments 1 and 2.

Enforcement-oriented	**Reform-oriented**
Increase prison sentences	Reform education practices*
Increase street patrols	Create after school programs*
Punish criminals faster***	Expand economic welfare programs**
Set higher maximum penalties***	Create jobs**

Note. Measures marked with * and ** were combined in Thibodeau and Boroditsky (2011, 2013); measures marked with *** were added in the present study to create an even distribution of enforcement- and reform-oriented measures.

A pre-test was carried out to ensure that the eight policy measures formed two distinct groups of measures displaying reliable scales of reform- versus enforcement-orientedness. A valid total of 49 participants (M_{age} = 33.08, SD_{age} = 11.07, 38.8% female) rated the reform- and enforcement-orientedness of the policy measures on a 7-point Likert-scale (ranging from 1 = strongly disagree to 7 = strongly agree). The results of this pre-test showed that, on average, participants rated enforcement-oriented measures significantly higher than reform-oriented measures when rating their degree of enforcement, $t(48) = 5.09$, $p < .001$, $r = .59$. Reform-oriented measures scored significantly higher than enforcement-oriented measures when rated for their degree of reform, $t(48) = 7.70$, $p < .001$, $r = .74$. Also, enforcement-oriented measures were rated significantly higher in the enforcement-oriented than in the reform-oriented question, $t(48) = 7.87$, $p < .001$, $r = .75$, and reform-oriented measures were

Table 6.1

Overview of the experimental materials for Experiments 1 and 2.

General introduction		In his latest speech, Mayor Smith of the city of Addison announced that crime has steadily increased in his city over the past 10 years/year. Smith said:				
		Condition				
	Sentence	*Non-metaphorical control*	*1 sentence with metaphors*	*2 sentences with metaphors*	*3 sentences with metaphors*	*4 sentences with metaphors*
Exp. 1	1)	"Crime is a **problem**.	"Crime is a **virus**.	"Crime is a **virus**.	"Crime is a **virus**.	"Crime is a **virus**.
	2)	It is a **threat** we must prevent from **increasing**.	It is a **threat** we must prevent from **increasing**.	It is a **disease** we must prevent from **spreading**.	It is a **disease** we must prevent from **spreading**.	It is a **disease** we must prevent from **spreading**.
	3)	Even **safe** communities are showing **signs** of violence.	Even **safe** communities are showing **signs** of violence.	Even **safe** communities are showing **signs** of violence.	Even **healthy** communities are showing **symptoms** of violence.	Even **healthy** communities are showing **symptoms** of violence.
	4)	We need a new **policy** to make our city **secure** before the situation gets completely out of hand."	We need a new **policy** to make our city **secure** before the situation gets completely out of hand."	We need a new **policy** to make our city **secure** before the situation gets completely out of hand."	We need a new **policy** to make our city **secure** before the situation gets completely out of hand."	We need a new **cure** to make our city **immune** before the situation gets completely out of hand."

Table 6.1 (continued)

Overview of the experimental materials for Experiments 1 and 2.

Exp. 2	1)	"Crime is a **problem**.	"Crime is a **beast**.	"Crime is a **beast**.	"Crime is a **beast**.	"Crime is a **beast**.
	2)	It is a dangerous **issue taking over** many of the city's communities.	It is a dangerous **issue taking over** many of the city's communities.	It is a dangerous **animal preying on** many of the city's communities.	It is a dangerous **animal preying on** many of the city's communities.	It is a dangerous **animal preying on** many of the city's communities.
	3)	It is **unpredictable** and **serious**, going out of control.	It is **unpredictable** and **serious**, going out of control.	It is **unpredictable** and **serious**, going out of control.	It is **feral** and **predatory**, going out of control.	It is **feral** and **predatory**, going out of control.
	4)	We need to **stop** it before safe neighborhoods are **affected**, too."	We need to **stop** it before safe neighborhoods are **affected**, too."	We need to **stop** it before safe neighborhoods are **affected**, too."	We need to **stop** it before safe neighborhoods are **affected**, too."	We need to **trap** it before safe neighborhoods are **infested**, too."

Note. The first row of this table contains the general introduction to the text that was the same in all five conditions. Participants in Experiment 1 read that crime had increased over the past 10 years, whereas participants in Experiment 2 read that it had increased over the past year. Words printed in boldface indicate the manipulated elements. All illness-related terms are metaphorical extensions of the coordinating frame 'Crime is a virus'. All beast-related terms are metaphorical extensions of the coordinating frame 'Crime is a beast'. American English spelling conventions were used as the experiment was carried out in the United States.

rated significantly higher in the reform-oriented than in the enforcement-oriented question, $t(48) = 6.36$, $p < .001$, $r = .68$. We consequently concluded that we could use these two sets of measures in our main experiments.

Control variables

Metaphors have the ability to make texts more vivid and less complex (e.g., Ortony, 1975). To control for these aspects, we measured perceived complexity and perceived vividness of the experimental texts. Perceived complexity was measured with a scale developed by Burgers, de Graaf, and Callaars (2012). Participants were asked whether they found the text difficult to understand, comprehensible (reverse coded), and clear (reverse coded) on a 7-point Likert-scale (Experiment 1: Cronbach's $\alpha = .74$; Experiment 2: Cronbach's $\alpha = .72$). Perceived vividness of the text was also measured with a scale developed by Burgers et al. (2012). Participants indicated on a 7-point Likert-scale whether they found the text vivid and colourful (Experiment 1: Cronbach's $\alpha = .83$; Experiment 2: Cronbach's $\alpha = .89$).

6.2.4 Procedure

Data were collected online through Qualtrics (www.qualtrics.com). After an opening page, participants were first asked to read a text about crime in the city of Addison. They were randomly assigned to one of the five conditions. A hidden timer recorded the number of seconds they spent reading the text. Next, participants were asked to list three keywords of the text, in order to filter out those who had not read it. Then, they were asked to rate the two sets of policy measures (see Table 6.2) for their effectiveness, given the situation in Addison described in the text. Frame-consistent measures were presented first. In Experiment 1, participants thus first rated the set of reform-oriented solutions (Cronbach's $\alpha = .71$), followed, on a new page, by the enforcement-oriented solutions (Cronbach's $\alpha = .88$). In Experiment 2, participants first rated the enforcement-oriented measures (Cronbach's $\alpha = .80$), and then the reform-oriented (Cronbach's $\alpha = .80$) ones. We then collected ratings for the degree of complexity and vividness of the text, and asked participants to fill out a cloze

question in which they were asked to complete the first sentence of the quote of Addison's Mayor ('Crime is a _____').

Then participants were asked to indicate their age, gender, nationality, native language, level of education, and political affiliation. Finally, they were thanked for participating, informed that the text was fictional, and they received a confirmation code to collect their remuneration. On average, completing the survey took 6 minutes and 37 seconds for Experiment 1, and 7 minutes and 38 seconds for Experiment 2.

6.2.5 Participants

Participants in both experiments were collected and paid via Amazon's Mechanical Turk (www.mturk.com). To ensure high-quality work, the MTurk HIT approval rate was set to 95%. Only MTurk Workers located in the USA could participate. Turkers who had participated in any of our earlier studies on a similar topic could not take part.[5] Participants received $0.50 for completing the survey. Data were collected on 28 October (Experiment 1) and 13 November (Experiment 2) 2014.

We set our sampling criteria before collecting data. Using G*Power (Faul, Erdfelder, Lang, & Buchner, 2007), we calculated that 305 completed surveys were needed to be able to detect a medium effect (f = .25, Cohen, 1992) with a power of .80, and alpha set at .05. We aimed for 400 completed questionnaires per experiment, because we also set exclusion criteria: participants had to be over 17 years of age, have US nationality, and/or English as their first language, and they should be able to name at least one correct key word. Participants who spent < 5 or > 60 seconds on reading the text were also excluded. Demographic characteristics of the participants are displayed in Table 6.3.

Experiment 1 ('Virus')

A total of 400 participants completed the survey. Applying our exclusion criteria yielded a valid N of 354. Participants were equally distributed across the five

[5] Excluding Turkers was done by first directing them to a Qualtrics questionnaire that checked the Worker's MTurk ID; see Peer, Paolacci, Chandler, and Mueller (2012).

conditions regarding age ($F(4,349) < 1$), gender ($\chi^2(4) = 2.79$, $p = .59$), level of education ($\chi^2(8) = 13.06$, $p = .11$)[6], and political affiliation ($\chi^2(8) = 2.64$, $p = .96$).

Table 6.3

Demographic characteristics of the participants in Experiments 1 and 2.

	Experiment 1*		**Experiment 2****	
Age – years (*SD*; range)	32.71	(10.90; 18-65)	32.35	(11.12; 18-74)
Gender – % female (*N*)	40.4	(143)	56.6	(205)
Education – % (*N*)				
Elementary school	0.0	(0)	0.3	(1)
Middle school/Junior high school	0.6	(2)	0.0	(0)
(Senior) high school	33.9	(120)	33.2	(120)
Undergraduate study	54.2	(192)	52.4	(189)
Graduate study	11.3	(40)	14.1	(51)
Political affiliation – % (*N*)				
Republican	15.2	(54)	18.6	(67)
Democrat	42.1	(149)	38.2	(138)
Independent	42.7	(151)	43.2	(156)
Position of Independent participants – % (*N*)				
More conservative	17.2	(26)	14.1	(22)
More liberal	33.8	(51)	42.9	(67)
In between	49.0	(74)	42.9	(67)

Note. *Total valid *N* = 354 **Total valid *N* = 361.

Experiment 2 ('Beast')

A total of 397 participants completed the survey. Applying our exclusion criteria yielded a valid *N* of 361. Participants were equally distributed across the five conditions regarding age ($F(4,356) < 1$) and gender ($\chi^2(4) = 4.31$, $p = .37$), but

[6] Because only two participants completed Middle school/Junior high school, we collapsed these with participants who completed (Senior) high school.

not regarding level of education ($\chi^2(8) = 18.47$, $p = .02$, Cramer's $V = .02$).[7] Inspection of standardised residuals showed that relatively fewer participants had finished an undergraduate degree ($n = 31$) and relatively more participants had finished a graduate degree ($n = 21$) in the condition without metaphorical sentences. There was no effect of level of education on perceived effectiveness of enforcement-oriented ($F(2,358) < 1$) or reform-oriented measures ($F(2,358) < 1$). Level of education thus did not influence our overall findings.

Regarding political affiliation, participants were also not distributed evenly across conditions ($\chi^2(8) = 16.40$, $p = .04$, Cramer's $V = .04$). Inspection of standardised residuals showed that there were relatively fewer Democrats ($n = 17$) in the condition with two metaphorical sentences. There were also relatively fewer Republicans ($n = 6$) in the condition with three metaphorical sentences. Significant effects were found between political affiliation and perceived effectiveness of enforcement-oriented ($F(2,358) = 10.24$, $p < .001$, $\eta_p^2 = .05$), as well as reform-oriented measures ($F(2,358) = 17.44$, $p < .001$, $\eta_p^2 = .09$). Post-hoc tests with Bonferroni-corrections showed that Republicans rated the perceived effectiveness of enforcement-oriented measures significantly higher than both Democrats and Independents ($p < .001$), and that they rated the perceived effectiveness of reform-oriented measures significantly lower than both Democrats and Independents ($p < .001$). Given these results, political affiliation will be added to the main analysis as a factor.

6.3 Results

6.3.1 Control variables

Experiment 1 ('Virus')

There was a significant effect of the number of metaphorical sentences on perceived vividness of the text ($F(4,349) = 6.15$, $p < .001$, $\eta_p^2 = .07$) and complexity of the text ($F(4,349) = 2.50$, $p = .04$, $\eta_p^2 = .03$). Regarding vividness, post-hoc tests with Bonferroni-corrections showed that participants in the condition with four metaphorical sentences found the text more vivid than participants in the condition with zero ($p < .001$), one ($p = .01$), two ($p = .04$),

[7] Because only 1 participant completed Elementary school, this participant was collapsed with those who completed (Senior) high school.

and three metaphorical sentences (p = .03). Regarding complexity, Bonferroni-corrections showed two trends: participants in the condition with four metaphorical sentences found the text less complex than participants who read one (p = .08), and two (p = .06) metaphorical sentences. These findings are in line with our expectations.

Experiment 2 ('Beast')

There was a significant effect of the number of metaphorical sentences on the perceived vividness of the text ($F(4,356) = 12.82$, $p < .001$, $\eta_p^2 = .12$). Post-hoc tests with Bonferroni-corrections indicated that participants in the conditions with two, three, and four metaphorical sentences found the text more vivid than those in the condition without metaphors (at least p = .001). Moreover, participants who read three metaphorical sentences found the text more vivid than participants in the condition with one metaphorical sentence ($p < .001$). For participants in the condition with four metaphorical sentences, this was a trend (p = .06). These findings are in line with our expectations. We found no effect of the number of metaphorical sentences on the perceived complexity of the text ($F(4,356) = 1.58$, p = .18). Overall, average scores were low (less than 2 on a scale from 1–7 in all conditions), which may be because the crime-as-a-beast frame is rather familiar to participants. This was not problematic for our main analyses.

6.3.2 Hypothesis testing

Data were first analysed with a one-way independent ANOVA with number of metaphorical sentences as the independent variable and perceived effectiveness ratings as the dependent variable. Because previous analyses (see 6.2.5) had shown a significant influence of political affiliation on perceived effectiveness of enforcement- as well as reform-oriented measures in Experiment 2, political affiliation was added as a factor in the analyses of both experiments, and data were also analysed with a two-way independent ANOVA with number of metaphorical sentences and political affiliation as independent variables and perceived effectiveness ratings as the dependent variable. Table 6.4 shows descriptive statistics.

Please note that in Experiment 1 ('Virus'), the reform-oriented measures are considered frame-consistent, and that, in Experiment 2 ('Beast'), the enforcement-oriented measures are considered frame-consistent.

Table 6.4

Number of participants and mean scores (with standard deviations) of perceived effectiveness of reform- and enforcement-oriented policy measures for Experiments 1 and 2 as a factor of the number of sentences with metaphorical expressions in the experimental text.

	Exp. 1 – Crime is a virus Type of measures			**Exp. 2 – Crime is a beast Type of measures**		
No. of sentences with metaphors	*N*	Reform-oriented	Enforcement-oriented	*N*	Reform-oriented	Enforcement-oriented
No metaphors	72	5.25 (1.04)	4.57 (1.52)	76	5.60 (1.21)	4.69 (1.26)
1 sentence	75	5.18 (.86)	4.94 (1.48)	72	5.39 (1.13)	4.95 (1.36)
2 sentences	71	5.29 (1.02)	4.97 (1.45)	67	5.42 (1.07)	4.83 (1.25)
3 sentences	69	5.29 (1.21)	4.50 (1.57)	76	5.50 (.99)	5.13 (1.16)
4 sentences	67	5.52 (.94)	4.77 (1.49)	70	5.50 (1.06)	5.13 (1.23)
Total	354	5.30 (1.02)	4.75 (1.51)	361	5.48 (1.09)	4.95 (1.26)

Note. The perceived effectiveness of the measures was calculated by combining the average scores of all four reform-oriented and all four enforcement-oriented measures.

ANOVA without political affiliation as a fixed factor

Experiment 1 ('Virus')

The number of metaphorical sentences did not affect the perceived effectiveness of reform-oriented ($F(4,349) = 1.11$, $p = .35$) or enforcement-oriented ($F(4,349) = 1.43$, $p = .22$) policy measures. H1 is thus not supported by the data.

Experiment 2 ('Beast')

The number of metaphorical sentences did not affect the perceived effectiveness of enforcement-oriented ($F(4,356) = 1.77$, $p = .14$) or reform-oriented ($F(4,356) < 1$) policy measures. H1 is thus not supported by the data.

ANOVA with political affiliation as a fixed factor

Experiment 1 ('Virus')

No main effect was found for the number of metaphorical sentences on the perceived effectiveness of reform-oriented measures ($F(4,339) < 1$), but the main effect of the number of metaphorical sentences on the perceived effectiveness of enforcement-oriented measures was a trend ($F(4,339) = 2.22$, $p = .07$, $\eta_p^2 = .03$). Post-hoc tests with Bonferroni-corrections showed one trend. Participants in the condition with three metaphorical sentences rated the enforcement-oriented measures as less effective than participants in the conditions with two metaphorical sentences ($p = .09$). H1 is thus not supported by the data in the sense that frame-consistent measures do not show higher ratings when participants read more sentences with metaphors. For the frame-inconsistent measures, however, the data showed a trend: the more metaphorical sentences participants read, the less effective they found these measures to be.

There was a significant main effect of political affiliation on the perceived effectiveness of reform- ($F(2,339) = 16.15$, $p < .001$, $\eta_p^2 = .09$) as well as enforcement-oriented ($F(2,339) = 8.49$, $p < .001$, $\eta_p^2 = .05$) policy measures. Post-hoc tests with Bonferroni-corrections revealed that Republicans perceived the reform-oriented measures as significantly less effective than both Democrats ($p < .001$) and Independents ($p = .01$), and that Independents perceived them as significantly less effective than Democrats ($p < .01$). Republicans perceived the enforcement-oriented measures as significantly more effective than both Democrats ($p < .001$) and Independents ($p = .001$).

There was no interaction effect between political affiliation and number of metaphorical sentences on the perceived effectiveness of the reform-oriented measures ($F(8,339) = 1.32$, $p = .23$), indicating that there was no difference in how participants with different political affiliations were affected by the number of metaphors they read. For the enforcement-oriented measures, this interaction effect displayed a trend ($F(8,339) = 1.74$, $p = .09$, $\eta_p^2 = .04$). Post-hoc tests with Bonferroni-corrections showed that Democrats in the condition with three metaphorical sentences rated the enforcement-oriented measures as significantly less effective than Democrats in the condition with one sentence with metaphors ($p = .03$).

Experiment 2 ('Beast')

The main effect of metaphorical sentences on the perceived effectiveness of enforcement-oriented measures was a trend ($F(4,346) = 2.23$, $p = .07$, $\eta_p^2 = .03$). Post-hoc tests with Bonferroni-corrections yielded no significant results. However, post-hoc comparisons using the LSD test showed that participants in the condition with three metaphorical sentences rated the enforcement-oriented measures as significantly more effective than participants in the condition with zero ($p = .01$) and two ($p = .03$) metaphorical sentences. Participants in the condition with four metaphorical sentences rated the enforcement-oriented measures as significantly more effective than participants in the non-metaphorical control condition ($p = .05$). No main effect was found for the number of metaphorical sentences on the perceived effectiveness of reform-oriented measures ($F(4,346) < 1$). The data thus partially support H1, albeit that the results display a trend.

There was a significant main effect of political affiliation on the perceived effectiveness of enforcement- ($F(2,346) = 10.63$, $p < .001$, $\eta_p^2 = .06$) as well as reform-oriented ($F(2,346) = 15.77$, $p < .001$, $\eta_p^2 = .08$) policy measures. Post-hoc tests with Bonferroni-corrections revealed that Republicans perceived the enforcement-oriented measures as significantly more effective ($p < .001$), and the reform-oriented measures as significantly less effective ($p < .001$) than both Democrats and Independents. The difference between Democrats and Independents displayed a trend: Democrats perceived the reform-oriented measures as more effective ($p = .09$) than Independents.

There was no interaction effect between political affiliation and number of metaphorical sentences on the perceived effectiveness of the enforcement-oriented ($F(8,346) < 1$), or reform-oriented ($F(8,346) < 1$) measures, indicating that there was no difference in how participants with different political affiliations were affected by the number of metaphors they read.

6.4 Conclusion and discussion

This paper investigated whether extended metaphors influence the perceived effectiveness of policy measures. In Experiment 1, we extended the metaphorical frame 'Crime is a virus' via a series of additional conventional metaphorical expressions (crime as target domain; viruses as source domain). In Experiment 2 we did the same for the metaphorical frame 'Crime is a beast' (crime as target

domain; beasts as source domain). Overall, our data show limited support for the hypothesis that extended metaphors influence people's opinions. We found no support for our hypothesis that extended metaphors would show higher ratings of perceived effectiveness of frame-consistent policy measures without controlling for political affiliation. When controlling for political affiliation, we also found no support for our hypothesis in Experiment 1. However, we did find a trend in the opposite direction for frame-inconsistent policy measures: the more metaphorical sentences participants read, the less effective they rated the enforcement-oriented policy measures. Experiment 2 displayed a trend in the expected direction of H1. The more metaphorical sentences participants read, the more effective they found frame-consistent enforcement-oriented policy measures. No effect was found for frame-inconsistent measures in this experiment.

In both experiments, we found political affiliation to influence the perceived effectiveness of the policy measures. Republicans found the enforcement-oriented policy measures significantly more effective than Democrats and Independents. In Experiment 1, Independents also perceived the reform-oriented measures as significantly more effective than Republicans. Experiment 1 also yielded a trending interaction effect for the perceived effectiveness of frame-inconsistent policy measures, indicating that Democrats, Republicans, and Independents were affected differently by the number of metaphorical sentences they read. Specifically, Democrats in the condition with three metaphorical sentences rated the enforcement-oriented policy measures as significantly less effective than Democrats in the condition with one metaphorical sentence. In Experiment 2, no interaction effects were attested, indicating that there was no difference in how participants with different political affiliations were affected by the number of metaphors they read.

The literature on (metaphorical) framing suggests several issues that may have influenced our results. For example, there is the question of whether or not participants had existing knowledge about the topic of the experimental text (see the metaphor framing termination hypothesis in Robins & Mayer, 2000). Or there may be a role for degree of exposure to the topic (Goodall, Slater, & Myers, 2013), personal characteristics of the participants such as political sophistication (Hartman, 2012), and personality traits (Kalmoe, 2014).

We argue, however, that there are alternative explanations for our findings, which are related to other aspects of the studies. The fact that the data trended in the predicted direction in Experiment 2, but not in Experiment 1 may be caused by the fact that the distance between the crime problem described in

the text and the proposed policy measures is smaller in the crime-as-a-beast frame than in the crime-as-a-virus frame. If a wild animal has escaped, the first reaction of authorities is typically to try and catch it and prevent it from escaping again – solutions that can easily be connected to the enforcement-oriented policy measures participants were presented with. However, when a dangerous flu virus appears, authorities will try to prevent it from spreading. Yet none of the reform-oriented policy measures we used were directly related to putting a stop to the spread of violence; they were all focused on preventing future criminal acts from happening by reforming society. While these measures may help to make society more secure in the long run, they may not have been considered to be effective measures to reduce crime given the situation described in the text.

After all, crime remains an issue that requires immediate action, even if it is described as a long-term problem. The general theme of our experiments may therefore have been biased towards enforcement-oriented solutions. This bias may also have caused the trend in the opposite direction for frame-inconsistent policy measures in Experiment 1: participants may have considered the enforcement-oriented measures to be more clearly ineffective solutions in the crime-as-a-virus frame than they found the reform-oriented measures to be effective in it. Robins and Mayer (2000) noticed a similar problem in their studies, arguing that some metaphorical frames seem to favour certain solutions more than others – if participants read the metaphor TRADE IS WAR[8] this would naturally promote favouring trade tariffs, whereas this would not be the case for the metaphor TRADE IS A TWO-WAY STREET. It is thus essential for researchers to carefully consider this possible bias when constructing experimental materials and deciding about the metaphorical frames to be used.

A first step that we are planning to take in this respect in our Lab is to investigate whether crossing the configuration of metaphorical frames and long-term versus short-term crime problems yields different results. In the current study, we presented crime as a long-term problem in Experiment 1, and as a short-term problem in Experiment 2, because this configuration was thought to be consistent with the reform- and enforcement-oriented policy measures, respectively. In the near future, we will test what happens when we present the crime-as-a-beast frame as a long-term, rather than a short-term problem, and the crime-as-a-virus frame as a short-term, rather than a long-term problem.

[8] Small capitals are conventionally used in cognitive linguistics to indicate conceptual domains (see, e.g., Lakoff, 1993).

More importantly, however, the fact that our results show limited support for the influence of extended metaphor on people's opinions may also be attributed to the fact that we asked participants to rate the effectiveness of possible *solutions* to the crime problem. Our hypothesis tacitly assumed that, after reading a text of only five sentences, participants not only (unconsciously) accepted the metaphorical frame to accurately describe the situation, but that they were also able to use that frame when asked to think of a way to solve the problem. This is a rather big leap in the decision-making process. Consequently, the distance between the task of rating the effectiveness of a series of policy measures and our research question of investigating whether a metaphorical framing effect takes place might have been too big. This may have made it impossible to find out whether people actually reason by working out the entailments of the metaphorical frame they were presented with (see Robins & Mayer, 2000). If we want to know whether participants pick up a metaphorical frame, future experiments need to investigate earlier stages in the decision-making process and examine whether people already reason along the lines of the frame they read when they are asked to define the problem or identify its cause (see Hartman, 2012). The results of the two experiments reported in this paper at least show that the influence of metaphorical frames on people's opinions may be more subtle than we have been assuming.

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Chapter 7

Conclusion

7.1 Introduction

The main aim of this thesis is to contribute to the developing theoretical framework of deliberate metaphor. To attain this aim, a series of studies was conducted that focus on three key issues related to the three-dimensional model of metaphor in language, thought, and communication, that are in need of further clarification. The first is concerned with the reliable identification of deliberate metaphor. The second concerns the description of the manifestation of deliberate metaphor in language use. The third is concerned with the effects of deliberate metaphor on reasoning.

In this final chapter, the main findings of the studies are summarised. The chapter also discusses implications of the research reported in this thesis – both for metaphor studies in general, and for the further development of Deliberate Metaphor Theory (DMT; Steen, 2008, 2011, 2015) in particular. Finally, a number of limitations as well as suggestions for further research are discussed.

7.2 Main findings

7.2.1 Deliberate metaphor identification

The first part of the thesis is concerned with the reliable identification of deliberate metaphor. Steen's (2015) theoretical definition of deliberate metaphor as metaphor that requires attention to its source domain meaning in the situation model of an utterance or text, has been used in both semiotic and behavioural analyses. Because these two types of analysis are fundamentally different from each other, it is important to formulate operational definitions of

deliberate metaphor that explicitly focus on either of the two. One of the problems in the developing theory of deliberate metaphor is that no uniform operational definition of deliberate metaphor (neither for semiotic nor for behavioural analysis) has been available. As a result, studies investigating deliberate metaphor regularly conflate the two perspectives, making claims about processing based on the analysis of text alone (e.g., Beger, 2016; Ng & Koller, 2013; Perrez & Reuchamps, 2014). Moreover, due to the lack of a uniform operational definition, studies apply their own interpretation of the theoretical definition of deliberate metaphor to determine when metaphor is deliberate or not. It is therefore unclear which criteria are used to identify deliberate metaphors. As a result, it is difficult to assess empirical as well as theoretical claims about deliberate metaphor in discourse.

To resolve this issue, **Chapter 2** set out to establish a reliable identification procedure for deliberate metaphor. The theoretical definition of deliberate metaphor as requiring attention to the source domain in the situation model of a metaphorical utterance (Steen, 2015) was taken as a starting point in this endeavour. For the establishment of the operational definition of deliberate metaphor on the basis of this theoretical definition, three aspects have been taken into account. First, it was specified that the current procedure operationalises deliberate metaphor for the purpose of semiotic analysis, which needs to be differentiated from behavioural analysis. Because semiotic analysis only investigates language use on the basis of texts and transcripts of talk, this type of analysis cannot draw conclusions about whether or not certain metaphors are processed *as* metaphors in language users' minds. For this reason, the identification procedure for deliberate metaphor developed in this thesis identifies *potentially* deliberate metaphors. Second, semiotic analysis cannot draw conclusions about whether or not actual language users attend to the source domain of a metaphor. Attention to the source domain was therefore operationalised as 'presence of a source-domain referent in the state of affairs designated by the utterance'. Third, it was specified that such presence of the source domain in the referential meaning of an utterance can be observed by looking for cues that indicate that the metaphor is used *as* metaphor. Taking these aspects into account yielded the following operational definition of deliberate metaphor: "A metaphor is potentially deliberate when the source domain of the metaphor is part of the referential meaning of the utterance in which it is used".

The operational definition of deliberate metaphor was used to develop the Deliberate Metaphor Identification Procedure (DMIP). The identification

procedure comprises six consecutive steps that analysts have to go through in order to determine whether a word constitutes a case of potentially deliberate metaphor (or not). The first of these steps requires analysts to establish a general understanding of what the text under analysis is about. Then, all lexical units in the text need to be coded for metaphor by means of the MIPVU procedure (Steen, Dorst, Herrmann, Kaal, Krennmayr, & Pasma, 2010b). The crucial step in DMIP is when, for each of the metaphors that MIPVU identifies, the analyst needs to determine whether the source domain of that metaphor is part of the referential meaning of the utterance in which it is used. If this is the case, the metaphor is considered potentially deliberate. If not, then the metaphor is considered a case of non-deliberate metaphor. In a subsequent step, DMIP requires analysts to describe *how* the source domain is part of the referential meaning of the utterance. This step is important because it allows informed discussions between analysts about potentially deliberate metaphor, in particular in cases where coders disagree. The final step of DMIP simply instructs analysts to look at the next metaphor and apply the procedure to that metaphor.

The reliability of the newly established identification procedure was successfully assessed in a series of inter-rater reliability tests. Two analysts independently applied DMIP to a set of metaphors, and displayed "substantial agreement" (Landis & Koch, 1977, p. 165) about the classification of those metaphors as potentially deliberate or non-deliberate. This indicated that DMIP can be used to reliably identify potentially deliberate metaphor in discourse.

Chapter 2 thus presents a new, systematic, procedure for the identification of potentially deliberate metaphor in discourse. This procedure can now be used as a tool for deliberate metaphor identification by other researchers as well.

7.2.2 The use of deliberate metaphor in natural language

The second part of this thesis is concerned with the description of the use of potentially deliberate metaphor in discourse. Due to the absence of a reliable identification procedure, empirical studies investigating the use of deliberate metaphor yield diverging results, both regarding the distribution of deliberate metaphor, and regarding the specific manifestations of deliberate metaphor in discourse (see, for instance, Cameron, 2003; Charteris-Black & Musolff, 2003; Perrez & Reuchamps, 2014). Chapters 3-5 aimed to clarify this issue by applying the identification procedure developed in Chapter 2 to all 24,762

metaphor-related words in the VU Amsterdam Metaphor Corpus (VUAMC), and conducting further quantitative and qualitative studies based on these annotations.

Chapter 3 presented a first systematic, reliable, cross-register and cross-word class comparison of the distribution of deliberate versus non-deliberate metaphor in natural language use. Results of this analysis demonstrated that 4.36% of all metaphor-related words are identified as potentially deliberate. This suggests that only a relatively small part of metaphors at the dimensions of language and thought also count *as* metaphors in communication between language users.

The results furthermore demonstrated that potentially deliberate metaphors are not distributed equally across registers. News texts and fiction contain significantly more potentially deliberate metaphors than expected by chance. Conversely, academic texts and face-to-face conversations contain significantly fewer potentially deliberate metaphors than expected. Potentially deliberate metaphors are also not distributed equally across word class. Metaphorical nouns and adjectives are significantly more often used as potentially deliberate metaphors than expected by chance, while adverbs, verbs, prepositions, and metaphors in the 'remainder' category (including conjunctions, determiners, pronouns, and so on) are significantly less often used as potentially deliberate metaphors. Moreover, a three-way interaction was found between potentially deliberate metaphor, register, and word class, indicating that the distribution of deliberate versus non-deliberate across register and word class also interacts with the distribution of word class across each of the registers. Specifically, metaphor-related nouns, verbs, and prepositions were more often used as potentially deliberate metaphors in news texts and fiction, and less frequently as potentially deliberate metaphors in academic texts and face-to-face conversations. Potentially deliberate adjectives and items in the remainder category were used more frequently than expected in fiction, and less frequently in academic texts. Potentially deliberate items in the remainder category were also less frequently used in conversations. Finally, potentially deliberate adverbs were used more frequently than expected in news texts.

These findings yield important new insights into the manifestation of deliberate metaphor in language use by providing (further) empirical evidence for earlier claims about the nature of deliberate metaphor. Specifically, the results in Chapter 3 further specify earlier findings about the frequency of deliberate metaphor use as well as its distribution across register and word

class. Furthermore, by also investigating the three-way interaction between deliberate metaphor, register, and word class, the analysis provides an explanation for the general idea that some registers are more metaphorical than others (e.g., Dorst, 2015; Semino & Steen, 2008).

Apart from the quantitative analysis of potentially deliberate metaphor in discourse, this thesis also contains two studies that approached the analysis of potentially deliberate metaphor from a qualitative perspective. These analyses are based on further analysis of the corpus that was annotated for potentially deliberate versus non-deliberate metaphor by means of DMIP in Chapter 3. **Chapter 4** provided a detailed analysis of a specific group of metaphors that, in the literature, are seen as prototypical instances of deliberate metaphor, namely metaphorical domain constructions (e.g., Nacey, 2013; Steen, 2016; cf. Goatly, 1997). Metaphorical domain constructions consist of a non-metaphorical attributive adjective modifying a metaphorical noun. Examples are 'fiscal thicket', 'economic mess', and 'political dynamite'. Metaphorical domain constructions are seen as typical instances of deliberate metaphor because the adjective explicitly points out the intended target domain meaning of the metaphorical noun it modifies. These domain adjectives are therefore considered signals of metaphor (e.g. Goatly, 1997), as a consequence of which the metaphorical nouns they signal are considered deliberate metaphors.

To investigate to what extent metaphorical domain constructions count as potentially deliberate metaphors *by definition* (i.e., by means of top-down analysis), a qualitative analysis examined the role of domain adjectives in all 187 metaphorical domain constructions from the VUAMC. The analysis revealed three different functions of domain adjectives in metaphorical domain constructions. First, domain adjectives can function as a signal of potentially deliberate novel metaphor, pointing out a new target domain meaning of the metaphorical noun (e.g., 'fiscal thicket'). Second, domain adjectives can serve as domain differentiators to either disambiguate or specify the target domain of a non-deliberate conventional metaphor (e.g., 'economic mess'). Third, domain adjectives can be used to signal potentially deliberate conventional metaphors (e.g., 'political dynamite'). Results of this study indicate that only 8.5% of all metaphorical domain constructions in the VUAMC count as potentially deliberate. Chapter 4 thus demonstrated that the noun in metaphorical domain constructions cannot *by definition* be identified as potentially deliberate. As such, the results presented in this chapter pointed out the importance of taking a bottom-up, rather than top-down approach when identifying and analysing potentially deliberate metaphors in discourse.

A second qualitative study examining the use of metaphor in natural language was presented in **Chapter 5**, which focused on the complexity of identifying and analysing potentially deliberate metaphor in natural language use. By means of the detailed analysis of a series of examples from the VUAMC, this chapter specifically investigated the role of co-text in both the identification and the further analysis of potentially deliberate metaphor. Results of the analyses demonstrate that metaphors can, in some cases, be identified as potentially deliberate metaphor based on a relatively limited amount of surrounding text (co-text), for instance when an explicit metaphorical comparison is made in the form of a simile. Yet, results of the analyses also show that some potentially deliberate metaphors can only be identified when additional co-text (e.g., textual information beyond the utterance) is taken into consideration, for instance when a metaphor is part of a (potentially deliberate) extended metaphor. Furthermore, co-text may not only be needed to identify metaphors as potentially deliberate, it may also play an important role in the further analysis of cases of potentially deliberate metaphor. In fact, the interplay with other metaphors, whether deliberate or not, can provide important insights into the status of metaphor *as* metaphor at the dimension of communication. As such, Chapter 5 also illustrated the importance of bottom-up, rather than top-down analysis in the identification and analysis of potentially deliberate metaphor. Specifically, this chapter demonstrated the need to look beyond the lexical unit and the immediate co-text (e.g., the utterance) in order to avoid overlooking potentially deliberate metaphors.

7.2.3 Effects of deliberate metaphor

The third part of the thesis dealt with the effects of deliberate metaphor on reasoning. While the literature on deliberate metaphor may at first sight seem to discuss the effects of deliberate metaphor, these studies are often based on interpretations of texts and transcripts of talk alone. In fact, to date only a few studies have investigated the effects of deliberate metaphor on reasoning (Gibbs, 2015a; Krennmayr et al., 2014; Thibodeau, in press). These are generally based on idiosyncratic interpretations of DMT, yielding results that are difficult to compare and to evaluate. The literature therefore calls for further research investigating the effects of deliberate metaphor on reasoning (e.g., Steen, 2011; Thibodeau, in press). However, it is of vital importance that studies that investigate deliberate metaphor processing formulate precise hypotheses, particularly when they aim to test (verify, falsify) theoretical claims about

deliberate metaphor. Along these lines, it is also important that such studies carefully craft their experimental materials, preferably based on insights from the analysis of actual language use, rather than on 'presumed' cases of potentially deliberate metaphor (see Roncero et al., 2016; Steen, 2015).

In order to address this aspect of the debate on deliberate metaphor, **Chapter 6** reported the results of two experiments that investigated the effects of deliberate metaphor on reasoning. Building on previous research that examined the role of metaphor in reasoning, these experiments investigated to what extent extended metaphor can influence people's opinions about solving a crime problem. The potentially deliberate metaphors 'crime is a beast' and 'crime is a virus' served as the basis for the creation of the stimulus texts in these two experiments. That is, these two metaphors were extended with additional metaphors expressing the same mapping between the target domain of crime and the source domain of beasts and between the target domain of crime and the source domain of viruses, respectively.

The experiments investigated whether reading more metaphorical expressions pertaining to the same metaphor would lead to increased effectiveness ratings for solutions to the crime problem that were in line with that metaphor. Results of both experiments show limited support for the hypothesis that extended metaphor influences reasoning. Reading a larger number of metaphorical sentences (increased degree of textual extension of the metaphor) did not lead to increased perceived effectiveness of solutions to the crime problem that were in line with the metaphor. However, when controlling for political affiliation of participants, two trends were found. In the 'Crime is a beast' experiment, a trend was found in the expected direction. Policy measures that were in line with the metaphor were perceived as more effective when the stimulus text contained more sentences with 'beast' metaphors. This means that the more metaphors participants read that described crime in terms of a beast, the higher they rated solutions to the crime problem that focused on enforcement (e.g., increasing prison sentences, setting higher maximum penalties, etc.). In the 'Crime is a virus' experiment, a trend was found for frame-inconsistent measures: enforcement-oriented policy measures were perceived as less effective when the stimulus text contained more sentences with 'virus' metaphors. This means that the more metaphors participants read that described crime in terms of a virus, the lower they rated solutions to the crime problem such as increasing prison sentences, setting higher maximum penalties, and so on.

The findings reported in Chapter 6 suggest that the effects of potentially deliberate metaphor may be less pronounced than suggested in other studies (e.g., Thibodeau & Boroditsky, 2011, 2013). These results can be used in future studies investigating the effects of deliberate metaphor to further specify hypotheses.

7.3 Implications of the studies

Based on the application of a newly developed systematic and reliable identification procedure, it was shown that deliberate metaphor is distributed differently from non-deliberate metaphor across register and word class. Additional qualitative studies furthermore provided insight into the complexities of deliberate metaphor analysis. Based on these insights, two experiments investigated the possible effects of deliberate metaphor. Together, these studies add to the growing body of research on deliberate metaphor, and their results have methodological, empirical, and theoretical implications for research into deliberate metaphor.

7.3.1 Methodological implications

Formulating an operational definition of deliberate metaphor and subsequently establishing a reliable identification procedure (DMIP) has two important implications for research into deliberate metaphor. Previous analyses of the manifestation of deliberate metaphor in discourse often conflated semiotic and behavioural aspects of metaphor use (e.g., Beger, 2016; Ng & Koller, 2013; Perrez & Reuchamps, 2014), making claims about the way in which (deliberate) metaphors are processed (in reception, production, or interaction) based on the analysis of textual evidence alone. As was argued throughout this thesis and elsewhere in the literature (see, e.g., Nacey, 2013; Krennmayr, 2011; Steen, 2007), it is of crucial importance to separate these two perspectives because they focus on essentially different, albeit related, aspects of metaphor use. In fact, one cannot make claims about how metaphor is processed by language users based on the analysis of text (either written text or transcripts of talk). Formulating an operational definition based on the theoretical definition of deliberate metaphor is therefore a first requirement for the systematic analysis of deliberate metaphor. The operational definition of deliberate metaphor put

forward in this thesis focuses on the semiotic analysis of metaphor in discourse, providing a precise criterion for the identification of deliberate metaphor which is based on the analysis of the referential meaning of metaphorical utterances.

This semiotic definition of deliberate metaphor constitutes the central part of the identification procedure for potentially deliberate metaphor (DMIP) that was introduced in the first part of this thesis. The main methodological implication of the establishment of this procedure is that the step-by-step method allows research on deliberate metaphor to move away from analysts' intuitions about what counts as a case of (non-)deliberate metaphor, towards systematic, transparent, replicable analysis. By making the steps in the process of deliberate metaphor identification explicit, DMIP provides a base for discussion when analysts disagree about whether a given metaphor counts a potentially deliberate or not. By making the decision process of determining what counts as a case of potentially deliberate metaphor explicit, DMIP can be compared to other identification procedures for figurative language use that have been developed over the past decade, including those for metaphor in general (MIP; Pragglejaz Group, 2007; MIPVU; Steen, et al., 2010b), verbal irony (VIP; Burgers, van Mulken, & Schellens, 2011), and hyperbole (HIP; Burgers, Brugman, Renardel de Lavalette, & Steen, 2016).

Eventually, DMIP may also be extended to allow the systematic, transparent identification of deliberate metaphor in modalities other than language (see also Ng & Koller, 2013). In this respect, DMIP can be connected to two other, newly established, identification procedures: the method for the identification and analysis of visual metaphor (VISMIP; Šorm & Steen, under review), and that for the identification and analysis of moving images (FILMIP; Bort-Mir, 2015).

7.3.2 Empirical implications

The results of the empirical studies carried out in this thesis have implications for both research into the use as well as into the effects of deliberate metaphor. Regarding the description of the use of deliberate metaphor, the extensive quantitative and qualitative corpus analyses provided insight into the manifestation of the phenomenon in natural discourse.

Specifically, the *quantitative* analyses yielded reliable analyses of the frequency and distribution of potentially deliberate metaphor. In terms of frequency, it was shown that only a limited number (4.36%) of the lexical units that count as related to metaphor at the dimensions of language and thought

also count *as* metaphorical at the dimension of communication. Although deliberate metaphor thus stands out in communication *as* metaphor, and consequently is more easily noticeable than most other cases of metaphor, deliberate metaphor is a relatively infrequent phenomenon. That is not to say, though, that the results of the analyses presented in the current thesis should be taken to suggest that deliberate metaphor is an insignificant phenomenon. In fact, the opposite is true. In terms of distribution, for instance, this thesis has shown that different registers and different word classes display different patterns of potentially deliberate metaphor use. These findings provide empirical support for common intuitions about the 'special' use of metaphor in some registers (see, e.g., Dorst, 2015; Semino & Steen, 2008). Specifically, the analyses in this thesis can explain why fiction and news texts may 'feel more metaphorical' than, for instance, academic texts and face-to-face conversations. The former two registers contain significantly more potentially deliberate metaphors, while academic texts and face-to-face conversations contain significantly fewer potentially deliberate metaphors than expected (see also Steen, Dorst, Herrmann, Kaal, & Krennmayr, 2010a[1]).

The findings reported in the current thesis also provide further empirical support for earlier findings about the specific manifestation of deliberate metaphor across word class. In particular, it was confirmed that potentially deliberate metaphors are typically nouns, and that non-deliberate metaphors are typically verbs (see Cameron, 2003). Yet, the quantitative analyses also further specified these findings by demonstrating that adjectives are also frequently used as deliberate metaphors, while adverbs, prepositions, and metaphors in the remainder category (including pronouns, determiners, etc.) are frequently used as non-deliberate metaphors. Moreover, it was found that the distribution of potentially deliberate metaphor across register and word class also interacts with the distribution of word class across register. For instance, while fiction contains fewer metaphor-related nouns than expected when looking at the distribution of all metaphor-related nouns across the four registers, fiction contains more potentially deliberate metaphorical nouns than expected. Conversely, while academic texts contain more metaphor-related nouns than expected when looking at the distribution of all metaphor-related nouns across the four registers, this register contains fewer potentially deliberate metaphorical nouns than expected. Overall, then, the fact that potentially

[1] For reasons of readability, this publication is referred to as Steen et al. (2010a), even though one of the co-authors in Steen et al. (2010b), Pasma, is not a co-author in Steen et al. (2010a).

deliberate metaphor is more frequent in some registers and in some word classes than in others may be explained by taking into account the overall functions of those registers, including 'pleasure reading' for fiction, and providing information for academic texts (see Biber, Johansson, Leech, Conrad, & Finegan, 1999).

Precisely because potentially deliberate metaphors (in contrast to non-deliberate metaphors) count as metaphors in the referential meaning of the utterance in which they are used, these metaphors stand out in communication. As a result, they can be used to fulfil specific communicative (rhetorical) functions such as to justify certain (political) decisions (see Example 1 in Chapter 1 of this thesis), to entertain people, or to explain difficult concepts. The precise and systematic quantitative results reported in this thesis can serve as a starting point to further investigate how (e.g., in which register, by means of which word classes) deliberate metaphor exerts these specific (rhetorical) functions in natural discourse.

The results of the *qualitative* analyses also have implications for the analysis of deliberate metaphor in natural language use. Specifically, the study investigating the analysis of domain adjectives in metaphorical domain constructions showed the importance of bottom-up analyses. While metaphorical domain constructions are considered a typical manifestation of deliberate metaphor in the literature (e.g., Nacey, 2013; Steen, 2016), detailed analyses investigating whether this is indeed the case were hitherto lacking. The analysis of metaphorical domain constructions in this thesis demonstrated that the metaphorical nouns in this type of construction cannot by definition be considered cases of potentially deliberate metaphor. In fact, the bulk of the metaphors in metaphorical domain constructions were identified as non-deliberate. These findings serve as a case in point to illustrate that taking a top-down approach to data may yield varying degrees of 'false positives'. Therefore, taking a bottom-up approach should be the standard when investigating the manifestation of potentially deliberate metaphor in discourse.

The point about top-down versus bottom-up analysis was further emphasised in a second qualitative study, investigating the role of co-text in the analysis of potentially deliberate metaphor in discourse. Based on the examples of potentially deliberate metaphor that are used in the literature to demonstrate what deliberate metaphor looks like, analysts might be inclined to think that the analysis of potentially deliberate metaphor in discourse is rather straightforward. This may be true for some manifestations of deliberate metaphor, in particular for explicit metaphorical comparisons containing metaphor signals such as 'like'

or 'metaphorically speaking' (see also Cameron & Deignan, 2003). Yet, this study demonstrated that the analysis of deliberate metaphor in natural language use is often more complex, and that potentially deliberate metaphors may be overlooked when deliberate metaphor identification is carried out in a top-down fashion. In fact, it was shown that co-text can play a crucial role in the identification of metaphorical lexical units as potentially deliberate.

The analyses in this thesis consequently demonstrated the importance of the 'context unit' (Krippendorff, 2013) in the identification and further analysis of potentially deliberate metaphor. While DMIP codes individual lexical units for deliberateness (the 'coding unit'; Krippendorff, 2013), additional textual information (the 'context unit') are often needed to determine whether a metaphor is in fact potentially deliberate or not. Although co-text also plays a role in the identification of metaphor at the dimensions of language and thought, it was found that larger context units (including more co-text) is often needed to analyse the communicative dimension of metaphor.

In addition to the abovementioned implications for the description of the use of potentially deliberate metaphor, this thesis has laid the foundations for further behavioural analysis of deliberate metaphor by showing how results of semiotic analyses can be used to formulate and subsequently test hypotheses about the effects of deliberate metaphor. In this way, this study constitutes a first concrete example of the type of connection between semiotic and behavioural analyses that have been recommended in the literature (e.g., Gibbs, 2015b; Thibodeau, in press). By taking semiotic analyses of potentially deliberate metaphor in discourse as the basis for formulating precise hypotheses about metaphor processing, it can be investigated, for instance, whether the metaphors that are identified as potentially deliberate by means of DMIP in fact influence reasoning. The results of such behavioural studies may help to obtain a fuller understanding of the role and functions of deliberate metaphor, and also feed back into further semiotic analysis.

As the results of the two experiments reported in Chapter 6 have shown, effects of deliberate metaphor may be subtle. It is therefore important to carefully craft experimental materials that aim to test whether potentially deliberate metaphors are indeed psychologically real for actual language users, either in production, in reception, or in interaction.

7.3.3 Theoretical implications

Although the research conducted in this thesis was concerned with empirical, rather than theoretical issues pertaining to the phenomenon of deliberate metaphor, the conclusions from the various studies move the theoretical development of DMT forward. Some scholars (e.g., Gibbs, 2011) seem to believe that DMT rejects the cognitive-linguistic, two-dimensional view of metaphor as a matter of language and thought. Contrary to this view, however, DMT has been presented (see, e.g., Steen, 2015) as a further refinement of Conceptual Metaphor Theory (CMT; Lakoff & Johnson, 1980). In fact, as the analyses in this thesis have also shown, DMT can be seen as an extension of CMT, rather than a rejection of it (see Steen, 2011). DMT addresses important aspects of metaphor that are not addressed in CMT, in particular with respect to the question to what extent metaphors in language and thought also count *as* metaphors in communication between language users. Whereas the focus in CMT is primarily on the linguistic and conceptual dimension of metaphor, DMT is concerned with the special use of metaphor *as* metaphor at the dimension of communication.

The results of the five studies reported in this thesis constitute a proof of concept of deliberate metaphor, providing empirical support for the theoretical (and developing empirical) claims put forward in DMT (and earlier studies that implemented DMT). By operationalising deliberate metaphor for semiotic analysis and subsequently investigating the manifestation of potentially deliberate metaphor in natural language use, this thesis has shown the validity of the theoretical proposal that metaphors are not only a matter of language and thought, but also of communication. In fact, the addition of the third dimension to the model of metaphor yields an explanation for the idea that some registers, such as fiction and news texts, are felt to be 'more metaphorical' than others: the analysis in this thesis has shown that these registers contain relatively more potentially deliberate metaphors compared to non-deliberate metaphors. By relating these semiotic findings to concrete hypotheses about metaphor processing, this thesis has furthermore provided a first step towards the verification of theoretical claims about the difference in processing between deliberate and non-deliberate metaphors suggested by DMT. According to DMT, deliberate metaphors may have different communicative effects because they are processed *as* metaphors, while non-deliberate metaphors are processed by means of categorisation or lexical disambiguation. Although the experimental study in this thesis did not investigate these two types of processing, the results of this study suggest that claims about the effects of deliberate metaphors on reasoning may need to be made more precise.

Approaching the matter of deliberate metaphor from an empirical perspective thus made it possible to assess theoretical claims about the nature of deliberate metaphor, and to shed new light onto the use and nature of deliberate metaphor in natural language use. These new insights into the use and effects of potentially deliberate versus non-deliberate metaphor are also relevant to CMT. Specifically, the results address issues that did not (or barely) receive attention in the two-dimensional model of metaphor, in particular with respect to the special role that metaphor can have in communication between language users. Furthermore, the empirical insights about deliberate metaphor gained from this thesis may eventually be used to find common ground between DMT and other recently developed theoretical (and empirical) proposals that argue for the incorporation of communicative aspects into a model of metaphor (e.g., Bowdle & Gentner, 2005; Cameron, 2010; Cameron, Maslen, Todd, Maule, Stratton, & Stanley, 2009; Charteris-Black & Musolff, 2003; Goatly, 1997; Müller, 2008, 2016; Musolff, 2016a, 2016b).

7.4 Limitations and suggestions for future research

The research reported in this thesis provides important new insights into the identification, use, and effects of potentially deliberate metaphor in discourse. At the same time, the results open up a myriad of opportunities for further research. This section discusses the most important limitations of the current thesis, and provides concrete suggestions for resolving these issues in future research.

First, the analyses in Chapters 3-5 are all based on the application of DMIP to all 24,762 metaphors from the VUAMC. On the one hand, this thesis has benefited greatly from the fact that this corpus had previously been coded for all metaphor with MIPVU. This allowed the systematic comparison of the distribution of potentially deliberate versus non-deliberate metaphor across different registers and word classes. On the other hand, however, using the VUAMC also limited the scope of the analysis because the corpus contains data from four different registers only (academic texts, news texts, fiction, and face-to-face conversations). Other registers – including, for instance classroom discourse (see, e.g., Cameron, 2003; Beger, 2011, 2016), political discourse (see e.g., Charteris-Black, 2013; Musolff, 2016b), and health communication (see, e.g., Van den Heerik, van Hooijdonk, Burgers, & Steen, 2017; Tay, 2013), to name just a few – may contain (relatively) more (or fewer, or different)

potentially deliberate metaphors because they have different communicative purposes, and are aimed at different audiences. Examining the distribution of potentially deliberate versus non-deliberate in these registers may consequently yield a better and more comprehensive understanding of the communicative dimension of metaphor.

Second, this thesis has emphasised the need for a strict separation of semiotic and behavioural approaches to metaphor analysis. In analysing the VUAMC, a semiotic approach was adopted, which implied that only *potentially* deliberate metaphors could be identified. To warrant the reliability of the analyses, DMIP identifies potentially deliberate metaphors based on the assumption of an idealised contemporary speaker of English. In line with previous research (see Steen et al., 2010b), this idealised native speaker's knowledge of word meanings is assumed to be represented in a corpus-based contemporary dictionary (in this thesis: the *Macmillan English dictionary*). Thus, when a meaning is present in the dictionary, it is taken to be available to the idealised speaker. This makes DMIP heavily dependent on the information in the dictionary, while it is clear that, in the real world, speakers differ in their knowledge of word meanings. Moreover, specific word meanings may or may not be shared between language users, possibly rendering certain metaphors deliberate or non-deliberate. It might therefore be very informative to investigate actual language users' word knowledge (and world knowledge, for that matter) when analysing their deliberate versus non-deliberate use of metaphor. This can be done, for instance, by means of qualitative research methods such as think-aloud protocols, or by means of interviews, in which language users are asked to reflect on their (deliberate) use of metaphor. As long as analysts are aware of the limitations of the use of dictionaries for deliberate metaphor analysis, however, the advantages of using a dictionary – in particular with respect to the systematic, transparent, and reliable analysis of language use – largely outweigh the disadvantages (see also Krennmayr, 2008).

Third, the studies reported in this thesis primarily investigated the use of potentially deliberate metaphor in terms of their distribution across registers and word class. It was also shown how co-text can play an important role in the identification and further analysis of potentially deliberate metaphor. The examples discussed in the various chapters showed a variety of manifestations of potentially deliberate metaphor, including novel metaphor, signalled metaphor, extended metaphor, direct metaphor, and recurrent metaphor. What was not studied, however, was the relative frequency of these different forms of potentially deliberate metaphor, and the way in which these features may be

combined, yielding, for instance, cases of novel potentially deliberate metaphor that are also signalled and part of an extended metaphor. Future studies may take this factor into account to provide an even more detailed view of the use of potentially deliberate metaphor in discourse.

Another additional layer of analysis that may be added in future research is concerned with the functions that metaphors fulfil in communication. Various studies have investigated the functions of metaphor in general (e.g., Deignan, 2005; Goatly, 1997; Koller, 2003), but the functions of deliberate metaphor have as yet not been empirically studied, except, to some extent, in Beger's (2011) analysis of US college lectures. In this thesis, only brief mention was made of the possible functions that potentially deliberate metaphors fulfil, including modelling, reconceptualising, expressing emotions, humour, and so on (see Goatly, 1997, for an extensive overview). This point is also closely related to another aspect of deliberate metaphor use that has not been addressed systematically in this thesis, namely the role of context, or information from outside the text such as world knowledge of the language user(s) and the specific situation in which a text is used. As was suggested previously by, among others, Cameron (2003), Semino (2008), and Müller (2008), context may play an important role in the communicative status of metaphor *as* metaphor in discourse.

Fifth, the response-elicited data reported in the two experiments that were carried out as part of this thesis investigated the effects of extended metaphor on reasoning. They did not, however, investigate directly whether this extended metaphor was indeed interpreted *as* a metaphor by the participants. The experiments also did not directly investigate to what extent participants understood or appreciated these metaphors, nor to what extent such interpretation, comprehension, or appreciation affected the outcomes of the experiments. To gain further insights into the way in which deliberate metaphors are processed, as well as into the effects that deliberate metaphors may have on reasoning processes, future studies investigating the effects of deliberate metaphor may take these issues further into account (see Musolff, 2016a).

Finally, because the notion of 'attention' is at the core of DMT, the debate about deliberate metaphor has ineluctably been linked to theoretical and philosophical questions about related concepts such as intentions, (sub)consciousness, awareness, and activation (e.g., Gibbs, 2011, 2015a; Steen, 2011, 2013; Stover, 2011, Müller, 2008, 2011). Although these questions lie outside the scope of the present thesis, the empirical findings reported in this thesis yield ample opportunities for further theoretical as well as empirical

deliberation about the role of such issues in order to establish a more precise understanding of the role of metaphor *as* metaphor in communication. In fact, because the research reported in this thesis provides a more detailed picture of the role of deliberate metaphor in communication, it can be seen as a starting point for addressing the above issues in an attempt at finding common ground between DMT and other approaches to deliberate metaphor (see also Müller, 2016).

7.5 The value of deliberate metaphor

The renewed interest in the use of metaphor *as* metaphor in communication, the subsequent proposal to add a third dimension to the cognitive-linguistic model of metaphor, and, in particular, the debate about deliberate metaphor that resulted from these developments, constituted the core motivation for conducting the research reported in this thesis. The main objective of this undertaking was to contribute to the further development of the three-dimensional framework of metaphor by addressing three core issues that were in need of further clarification. The six studies presented in this thesis provided such clarification, and it is hoped that the results of these studies will serve as a basis for further research investigating the value of deliberate metaphor.

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Summary

The value of deliberate metaphor

Over the past thirty years, metaphor has predominantly been studied within the theoretical framework of Conceptual Metaphor Theory (CMT). In this framework, metaphor is seen as a linguistic expression of underlying conceptual structures in thought. Recently, however, metaphor scholars from various subdisciplines in linguistics (including discourse analysis, pragmatics, and (discourse) dynamic approaches) have observed that this two-dimensional view of metaphor in language and thought does not (sufficiently) accommodate the role of metaphor in communication. They therefore argue for a rehabilitation of more rhetorically-oriented approaches to metaphor. As a result of these developments, the role of metaphor *as* metaphor in communication between language users is now back at centre stage in metaphor studies.

This thesis investigates the communicative dimension of metaphor within the developing theoretical framework of Deliberate Metaphor Theory (DMT). To accommodate the communicative function of metaphor, DMT extends the two-dimensional cognitive-linguistic model of metaphor in language and thought with a dimension of communication. In this third dimension, a distinction is made between 'deliberate' and 'non-deliberate' metaphors. The difference between these two types of metaphor hinges on the question whether the source domain meaning of a metaphor is part of the situation model of a metaphorical utterance (or not). Since DMT was first introduced, the framework has been controversial. On the one hand, it has been met with considerable criticism about what it means for a metaphor to be called 'deliberate'. On the other hand, empirical studies increasingly adopt DMT and investigate the manifestation of deliberate metaphor in language use. However, various aspects of DMT remain as yet underdeveloped, yielding varied interpretations and operationalisations of key concepts in the framework.

The main goal of this thesis is to contribute to the further development of the three-dimensional model of metaphor by addressing three key issues

concerning the role of metaphor in communication that are currently in need of clarification. To realise this goal, three subgoals are formulated that each address one of the key issues that need to be resolved. The first subgoal is of a methodological nature, and establishes an operational definition and a reliable procedure for the identification of deliberate metaphor in language use. The second and third subgoals are of an empirical nature and relate to the description of the distribution and functions of deliberate metaphor in natural language use, and its effects on reasoning, respectively.

The methodological issue that underlies the first subgoal is concerned with the lack of a generally accepted operational definition and identification procedure for deliberate metaphor. Earlier studies typically use their own interpretation of the theoretical definition of deliberate metaphor when analysing data, without specifying when a metaphor counts as deliberate and when not. In particular, because the theoretical definition of deliberate metaphor encompasses both semiotic and behavioural aspects of deliberate metaphor, studies applying this definition regularly conflate these two perspectives in their analyses. However, semiotic and behavioural approaches to deliberate metaphor investigate two distinct aspects of deliberate metaphor – the former is concerned with how deliberate metaphor can be analysed in texts and transcripts of talk, while the latter focuses on how individual language users process (in production, reception, or interaction) deliberate metaphor. It is therefore important to formulate a precise operational definition of deliberate metaphor that spells out how deliberate metaphor can be observed – either in texts or in processing. Closely connected to such formulation of an operational definition of deliberate metaphor is the formulation of concrete criteria that can be used to identify deliberate metaphor in language use. Because no reliable identification procedure for deliberate metaphor has been available, analyses of deliberate metaphor in language use remain rather idiosyncratic. This, in turn, makes it difficult to evaluate the validity of the analyses, and to assess in what way they contribute insights into the communicative dimension of metaphor.

To resolve this methodological issue, first a precise operational definition of deliberate metaphor is formulated that allows the semiotic analysis of deliberate metaphor. According to this operational definition, *a metaphor is potentially deliberate when the source domain of the metaphor is part of the referential meaning of the utterance in which it is used*. This definition is based on three important observations. First, because semiotic analyses do not investigate whether metaphors are processed *as* metaphors by individual language users, only *potentially* deliberate metaphors can be identified. Second, the presence of

the source domain in the situation model of an utterance can be established by examining the referential meaning of the utterance. Third, the presence of source domain referents can be traced by looking for cues that indicate that the metaphor is used *as* metaphor.

As a second step in resolving the methodological issue regarding deliberate metaphor, the operational definition of deliberate metaphor is used to establish a transparent and reliable, identification procedure. The resulting Deliberate Metaphor Identification Procedure (DMIP) comprises a series of steps that analysts have to apply in order to identify potentially deliberate metaphors in language use. Because the various steps in the process of determining whether a metaphor counts as potentially deliberate are made explicit in this procedure, analysts have a base for discussion whenever they disagree about the potentially deliberate or non-deliberate status of any given metaphor. The establishment of an operational definition of deliberate metaphor and of a step-by-step identification procedure together allow for the reliable and systematic analysis of the communicative dimension of metaphor.

The empirical issue that underlies the second subgoal of this thesis is concerned with the diverging outcomes of studies investigating the manifestation of deliberate metaphor in language use. Due to the absence of a systematic procedure for the identification of potentially deliberate metaphor, the analysis of deliberate metaphor in language use has often been carried out by searching data for a set list of predetermined candidates for deliberate metaphor. Such top-down analyses may lead to the erroneous identification of certain metaphors as potentially deliberate ('false positives'), and the other way around: top-down analyses may also overlook certain cases of potentially deliberate metaphor, erroneously identifying them as non-deliberate. As a consequence of the lack of a bottom-up identification procedure and the top-down approach being used instead, it is difficult to assess the value of empirical analyses investigating the use of deliberate metaphor in natural language.

This empirical issue is resolved by means of three studies that investigate the manifestation of potentially deliberate in language use. In the first study, DMIP is applied to all 24,762 metaphors in the VU Amsterdam Metaphor Corpus (VUAMC). The corpus contains texts and transcripts of talk from four different registers: academic texts, fiction, news texts, and face-to-face conversations. This quantitative cross-register, cross-word class comparison yields a first systematic, bottom-up, analysis of the frequency and distribution of deliberate metaphor in language use. Results demonstrate that only 4.36% of all words that can be identified as metaphors at the dimensions of language and

thought also count as metaphorical at the dimension of communication. This relatively limited occurrence of potentially deliberate metaphor in language use, however, provides important insights into the distribution of potentially deliberate metaphors across register and word class. First, potentially deliberate metaphor is not distributed equally across registers. Fiction and news contain significantly more potentially deliberate metaphors than expected, while academic texts and face-to-face conversations contain significantly fewer cases. Second, potentially deliberate metaphor is also not equally distributed across word class. Metaphorical adjectives and nouns are significantly more frequently potentially deliberate (compared to non-deliberate), while adverbs, verbs, prepositions, and metaphors in a remainder category (including pronouns, conjunctions, and so on) are significantly less frequently potentially deliberate. In addition, there is a three-way interaction between potentially deliberate metaphor, register, and word class. This means that the distribution of potentially deliberate metaphor across register differs per word class. For instance, fiction contains fewer metaphor-related nouns than expected when examining the distribution of all metaphors, but when examining the distribution of potentially deliberate metaphors, potentially deliberate metaphorical nouns are more frequent than expected. In academic texts, the opposite picture is found: relatively more metaphor-related nouns than expected by chance when looking at the distribution of all metaphor-related words, but fewer potentially deliberate metaphors.

In the second empirical study, one specific metaphorical construction is analysed in order to investigate to what extent this construction counts as potentially deliberate *by definition*. Specifically, all metaphorical domain constructions (MDCs) from the VUAMC are analysed. MDCs consist of a metaphorical noun that is modified by a non-metaphorical adjective that points out the target domain of the noun (e.g., 'budgetary anorexia'). In the literature, this domain adjective is considered a metaphor signal, making the noun it modifies deliberate by definition. However, the analysis in this study demonstrates that only a limited number of domain adjectives function as signals at the communicative dimension of metaphor. In fact, in the majority of cases, metaphorical domain constructions do not count as potentially deliberate. That is, the domain adjectives in these MDCs point out the target domain of the metaphorical noun they modify at the dimension of language and thought, but they do not serve as metaphor signals at the dimension of communication (e.g., 'economic growth'). In a similar way, the nouns in these MDCs can be identified as metaphors at the dimensions of language and thought, but they do not count

as metaphorical at the dimension of communication. These results consequently point out the importance of bottom-up (versus top-down) analysis to avoid identifying 'false positives'.

In the third empirical study, a further qualitative analysis of deliberate metaphor use is carried out that also stresses the importance of bottom-up (versus top-down) analysis. In particular, this study demonstrates the importance of taking co-text into account when analysing deliberate metaphor use. By means of a series of in-depth analyses, the complexity of the analysis of the communicative dimension of metaphor is investigated. Results demonstrate that, in some cases, potentially deliberate metaphor can be identified (and further analysed) in relative isolation – i.e., at utterance level. Results also show, however, that in many other cases it is essential to take into account additional textual information (co-text) that goes beyond the utterance in which a metaphor is used in order to be able to identify and/or further analyse potentially deliberate metaphor use. For instance, a metaphor may only be identified as metaphorical at the dimension of communication when its metaphorical use is revitalised because of the presence of other potentially deliberate metaphors in the co-text that stretches beyond the utterance in which the metaphor is used. When analysed in (relative) isolation, such cases would only be identified as metaphors at the dimensions of language and thought, not communication. In this way, taking additional co-text into consideration thus illustrates how bottom-up analysis can prevent potentially deliberate metaphors from being overlooked.

The empirical issue that underlies the third subgoal of this thesis is concerned with the effects of deliberate metaphor on reasoning, and the fact that the limited number of studies that have thus far investigated this question yield mixed results. Further clarification is needed for this aspect because hypotheses about the effects of deliberate metaphor in reasoning are currently often based on idiosyncratic interpretations of the three-dimensional model of metaphor. Moreover, experimental materials are not (always) based on results of (extensive) semiotic analyses of deliberate metaphor in language use. These observations raise questions about the validity of the findings. As a result, experiments that claim to test DMT may in fact test hypotheses that DMT would not predict, yielding results that are difficult to evaluate.

To resolve this empirical issue, the final part of this thesis investigates the effects of deliberate metaphor on reasoning about a crime problem. Results from the semiotic analyses investigating the use of deliberate metaphor in natural language are used to formulate precise hypotheses about deliberate

metaphor processing. Specifically, it is hypothesised that reading an increased number of sentences with metaphors that express the same mapping between the target domain of crime and the source domain of viruses (Experiment 1) or the source domain of beasts (Experiment 2) leads to increased ratings for the perceived effectiveness of policy measures that are in line with the metaphorical frame. Policy measures that are in line with the virus frame in Experiment 1 focus on reform, such as to create after school programs and to expand economic welfare programs. Policy measures that are in line with the beast frame in Experiment 2 focus on enforcement, such as to increase street patrols and to punish criminals faster.

Results of both experiments yield limited support for this hypothesis. That is, overall, extending the metaphor does not result in increased perceived effectiveness ratings for solutions that are in line with the metaphor. Thus, reading more virus-related metaphors does not lead to higher scores for the perceived effectiveness of reform-oriented policy measures. In a similar way, reading more beast-related metaphors does not lead to higher scores for the perceived effectiveness of enforcement-oriented policy measures. When controlling for political affiliation, however, some trends are found. Reading more sentences with virus-metaphors leads to decreased perceived effectiveness of enforcement-oriented policy measures – i.e., measures that are *not* in line with the virus frame. Still no effect is found for frame-consistent reform-oriented measures. When controlling for political affiliation, reading more sentences with beast-metaphors leads to increased perceived effectiveness of enforcement-oriented policy measures – i.e., measures that are in line with the beast frame. These experiments demonstrate how precise hypotheses can be formulated on the basis of preceding semiotic analysis. At the same time, the fact that these hypotheses could not be confirmed suggests that additional research is needed to investigate deliberate metaphor processing.

This thesis contributes to the further development of the three-dimensional model of metaphor in language, thought, and communication by resolving three key issues related to this model that are in need of clarification. First, the identification of potentially deliberate metaphor in language use can now be carried out by means of a reliable identification procedure: DMIP. Second, more important details have been discovered regarding the use of deliberate metaphor in natural language. And third, a first set of experiments based on informed hypotheses about deliberate metaphor has provided insights into the effects of deliberate metaphor on reasoning. In all, the results of the

studies carried out in this thesis demonstrate the value of metaphor *as* metaphor in communication.

Samenvatting in het Nederlands

De waarde van opzettelijke metaforiek

In de afgelopen dertig jaar zijn metaforen voornamelijk bestudeerd vanuit het theoretisch raamwerk van Conceptual Metaphor Theory (CMT). Binnen dit raamwerk worden metaforen gezien als talige uitdrukkingen ('metaforen in taal') van onderliggende conceptuele structuren ('metaforen in denken'). Recentelijk hebben metafooronderzoekers uit verschillende subdisciplines van de taalwetenschap (waaronder discoursanalyse, pragmatiek en discours-dynamische benaderingen) echter opgemerkt dat dit tweedimensionale model van metaforen in taal en denken niet (voldoende) ruimte biedt voor de rol van metaforen in communicatie. Zij pleiten daarom voor hernieuwde aandacht voor de meer retorisch georiënteerde benadering van metaforiek. Ten gevolge van deze ontwikkelingen staat de rol van het gebruik van metaforen *als* metaforen in communicatie tussen taalgebruikers momenteel in het middelpunt van de belangstelling in metafoorstudies.

Dit proefschrift gaat in op de communicatieve dimensie van metaforen binnen het nieuwe theoretische raamwerk van Deliberate Metaphor Theory (DMT). Om plaats te bieden aan de communicatieve functie van metaforen wordt in DMT het tweedimensionale cognitief-taalkundige model van metaforen in taal en denken uitgebreid met een dimensie van metaforen in communicatie. In deze derde dimensie wordt onderscheid gemaakt tussen 'opzettelijke' en 'niet-opzettelijke' metaforen. Het verschil tussen deze twee typen metaforen wordt bepaald door de vraag of de brondomeinbetekenis van een metafoor al dan niet onderdeel is van het situatiemodel van een metaforische uiting. Sinds de introductie van DMT is dit raamwerk controversieel gebleken. Enerzijds heeft het te maken gekregen met stevige kritiek, bijvoorbeeld met betrekking tot de vraag wat het precies betekent als een metafoor als 'opzettelijk' wordt aangemerkt. Anderzijds wordt in steeds meer empirische studies het onderscheid tussen opzettelijke en niet-opzettelijke metaforen toegepast en wordt onderzocht hoe beide soorten metaforen zich in natuurlijk taalgebruik

manifesteren. Echter, verschillende aspecten van DMT zijn nog in onvoldoende mate ontwikkeld, wat ertoe heeft geleid dat er momenteel in de literatuur verschillende interpretaties en operationaliseringen van kernbegrippen gehanteerd worden.

Het doel van dit proefschrift is om een bijdrage te leveren aan de verdere ontwikkeling van het driedimensionale metafoormodel door drie belangrijke kwesties met betrekking tot de rol van metaforen in communicatie die momenteel verheldering behoeven aan de orde te stellen. Teneinde dit doel te bereiken zijn drie subdoelen geformuleerd die elk één van de drie kwesties behandelen. Het eerste subdoel is methodologisch van aard en voorziet in de ontwikkeling van een operationele definitie en een betrouwbare procedure voor de identificatie van opzettelijke metaforen in taalgebruik. De twee andere subdoelen zijn van empirische aard en hebben betrekking op het beschrijven van de distributie en functies van opzettelijke metaforen in natuurlijk taalgebruik (subdoel 2) en de effecten van opzettelijke metaforen op redeneerprocessen (subdoel 3).

De methodologische kwestie die ten grondslag ligt aan het eerste subdoel heeft betrekking op het ontbreken van een algemeen geaccepteerde operationele definitie en van een identificatieprocedure voor opzettelijke metaforen. In eerder onderzoek wordt vaak een interpretatie van de theoretische definitie van opzettelijke metaforiek gehanteerd zonder dat daarbij expliciet wordt gemaakt wanneer een metafoor als opzettelijk telt en wanneer niet. Omdat de theoretische definitie van opzettelijke metaforen zowel semiotische als gedragsgerelateerde aspecten omvat worden deze twee aspecten in onderzoek naar opzettelijke metaforen regelmatig tegelijkertijd of door elkaar heen gebruikt. Semiotische benaderingen hebben namelijk betrekking op de vraag hoe opzettelijke metaforen kunnen worden geanalyseerd in teksten en (transcripties van) gesprekken, terwijl gedragsgerelateerde benaderingen zich bezighouden met de vraag hoe individuele taalgebruikers opzettelijke metaforen verwerken (in productie, receptie of interactie). Semiotische en gedragsgerelateerde benaderingen van opzettelijke metaforiek dienen echter strikt van elkaar onderscheiden te worden. Vanwege dit onderscheid is het belangrijk om een operationele definitie van opzettelijke metaforiek te formuleren die nauwkeurig omschrijft hoe opzettelijke metaforen kunnen worden waargenomen – in teksten of in verwerkingsprocessen. Het formuleren van concrete criteria die kunnen worden gebruikt bij de identificatie van opzettelijke metaforen is nauw verwant aan het opstellen van dergelijke operationele definities. Omdat tot op heden geen betrouwbare

identificatieprocedure voor opzettelijke metaforen beschikbaar was, zijn analyses van opzettelijke metaforiek in taalgebruik doorgaans gebaseerd op de eigen interpretaties van metafooronderzoekers. Als gevolg hiervan is het ingewikkeld om de validiteit van dit soort analyses te beoordelen. Daarnaast is het ingewikkeld om te bepalen hoe deze analyses een bijdrage kunnen leveren aan nieuwe inzichten in de communicatieve dimensie van metaforen.

Om deze methodologische kwestie op te lossen wordt eerst een nauwkeurige operationele definitie van opzettelijke metaforiek opgesteld die het mogelijk maakt om opzettelijke metaforen vanuit semiotisch perspectief te onderzoeken. Deze operationele definitie luidt als volgt: *een metafoor is potentieel opzettelijk als het brondomein van de metafoor onderdeel is van de referentiële betekenis van de uiting waarin die metafoor wordt gebruikt*. Deze definitie is gestoeld op drie belangrijke inzichten. Ten eerste kunnen in semiotische analyses alleen *potentieel* opzettelijke metaforen worden geïdentificeerd. Immers, in semiotische analyses wordt niet onderzocht hoe taalgebruikers bepaalde metaforen daadwerkelijk verwerken. Ten tweede kan de aanwezigheid van het brondomein in het situatiemodel van een uiting (zie de theoretische definitie van opzettelijke metaforiek) worden vastgesteld door de referentiële betekenis van die uiting te bekijken. Ten derde kan de aanwezigheid van referenten uit het brondomein van de metafoor worden getraceerd door te zoeken naar signalen die erop wijzen dat de metafoor *als* metafoor is gebruikt.

In een tweede stap in het oplossen van de methodologische kwestie wordt de operationele definitie van opzettelijke metaforen gebruikt om een transparante en betrouwbare identificatieprocedure op te stellen. De hieruit voortvloeiende Deliberate Metaphor Identification Procedure (DMIP) omvat een serie stappen die analisten dienen te doorlopen teneinde potentieel opzettelijke metaforen in taalgebruik te identificeren. Doordat de verschillende stappen in dit identificatieproces in DMIP expliciet worden gemaakt hebben analisten een basis voor verder discussie in het geval zij het met elkaar oneens zijn over de identificatie van een of meerdere metaforen als potentieel opzettelijk. De combinatie van het formuleren van een operationele definitie en het opstellen van een stap voor stap identificatieprocedure maakt de betrouwbare en systematische analyse van de communicatieve dimensie van metaforen mogelijk.

De empirische kwestie die ten grondslag ligt aan het tweede subdoel van dit proefschrift heeft betrekking op de uiteenlopende resultaten van studies die de verschijning van opzettelijke metaforen in taalgebruik onderzoeken. Vanwege het ontbreken van een identificatieprocedure werd de analyse van

opzettelijke metaforen in taalgebruik vaak uitgevoerd op basis van een vooraf vastgestelde lijst met kandidaten voor opzettelijke metaforiek. Dergelijke top-down analyses kunnen ertoe leiden dat metaforen onterecht als opzettelijk worden geïdentificeerd (zogenaamde 'valse positieven'). Ook kunnen zij ertoe leiden dat potentieel opzettelijke metaforen over het hoofd worden gezien en ten onrechte als niet-opzettelijk worden geïdentificeerd. Doordat, vanwege het ontbreken van een bottom-up identificatieprocedure, top-down analyses worden toegepast is het ingewikkeld om in te schatten wat precies de waarde is van empirische analyses die onderzoek doen naar opzettelijke metaforiek.

Om deze empirische kwestie op te lossen worden drie studies uitgevoerd over het gebruik van potentieel opzettelijke metaforen in taalgebruik. In de eerste studie wordt DMIP toegepast op alle 24.762 metaforen in het VU Amsterdam Metaphor Corpus (VUAMC). Dit corpus bestaat uit teksten uit vier verschillende registers: academische teksten, fictie, nieuwsteksten en persoonlijke gesprekken. De kwantitatieve analyse die wordt uitgevoerd leidt tot een eerste systematische, bottom-up analyse van de frequentie en distributie van potentieel opzettelijke metaforen in verschillende registers en in verschillende woordsoorten. De resultaten van deze analyse tonen aan dat slechts 4,36% van alle woorden die op de dimensies van taal en denken als metafoor kunnen worden geïdentificeerd ook als metafoor tellen in de communicatieve dimensie (i.e., als potentieel opzettelijk worden geïdentificeerd). Ondanks het relatief beperkte voorkomen van potentieel opzettelijke metaforiek in taalgebruik, biedt deze analyse belangrijke inzichten in de distributie van potentieel opzettelijke metaforen in verschillende registers en woordsoorten. Ten eerste is opzettelijke metaforiek niet gelijkmatig verdeeld over de verschillende registers. Fictie en nieuwsteksten bevatten significant meer potentieel opzettelijke metaforen (versus niet-opzettelijke metaforen), terwijl in academische teksten en persoonlijke gesprekken minder potentieel opzettelijke metaforen (versus niet-opzettelijke metaforen) voorkomen. Ten tweede is opzettelijke metaforiek ook niet gelijkmatig verdeeld over de verschillende woordsoorten. Metaforische bijvoeglijk naamwoorden en metaforische zelfstandig naamwoorden worden significant vaker potentieel opzettelijk gebruikt, terwijl bijwoorden, werkwoorden, voorzetsels en metaforen in de categorie 'overig' (met daarin onder andere voornaamwoorden en voegwoorden) juist significant minder vaak als potentieel opzettelijk worden gebruikt. Bovendien is er een driewegsinteractie tussen potentieel opzettelijke metaforen, register en woordsoort. Fictie bevat bijvoorbeeld minder metaforische zelfstandig naamwoorden dan verwacht indien wordt gekeken naar alle

metaforen (dus zonder onderscheid tussen opzettelijk/niet-opzettelijk gebruik), terwijl in dit register potentieel opzettelijk gebruikte metaforische zelfstandig naamwoorden juist significant vaker voorkomen. Het omgekeerde is het geval in academische teksten. Daarin zijn relatief meer metaforisch gebruikte zelfstandig naamwoorden indien wordt gekeken naar alle metaforen, terwijl er juist relatief minder potentieel opzettelijke metaforische zelfstandig naamwoorden voorkomen in dit register. Dit betekent dat de distributie van potentieel opzettelijke metaforen in verschillende registers per woordsoort verschillend is.

In de tweede empirische studie wordt een analyse uitgevoerd van een specifieke metaforische constructie teneinde te onderzoek in welke mate die constructie *per definitie* als potentieel opzettelijk kan worden beschouwd. In deze studie worden alle metaforische domeinconstructies (MDCs) uit het VUAMC geanalyseerd. MDCs bestaan uit een metaforisch gebruikt zelfstandig naamwoord dat vooraf wordt gegaan door een niet-metaforisch gebruikt bijvoeglijk naamwoord dat het doeldomein van het zelfstandig naamwoord uitdrukt, zoals 'budgettaire anorexia'. In de literatuur worden deze bijvoeglijke naamwoorden (ook wel: domeinadjectieven) als metafoorsignalen gezien. Als gevolg hiervan worden zelfstandig naamwoorden in deze constructies *per definitie* als gevallen van potentieel opzettelijke metaforiek gezien. Echter, de analyses in de huidige studie tonen aan dat slechts een beperkt aantal domein adjectieven inderdaad als metafoorsignaal fungeren in de communicatieve dimensie van metaforiek. Dat wil zeggen, in de meerderheid van de gevallen worden metaforische domein constructies niet als potentieel opzettelijk geïdentificeerd. De bijvoeglijk naamwoorden in deze constructies benoemen wel het doeldomein van het zelfstandig naamwoord waaraan zij voorafgaan in de dimensies van taal en denken, maar ze werken niet door als metafoorsignaal in de communicatieve dimensie (bijv. 'economische groei'). Op een vergelijkbare manier kunnen de zelfstandig naamwoorden in deze constructies als metaforen worden geïdentificeerd op het niveau van taal en denken, maar niet op het niveau van communicatie. Deze resultaten tonen dus het belang van bottom-up (in vergelijking met top-down) analyses aan om de identificatie van vals positieven te vermijden.

In de derde empirische studie wordt eveneens het belang van bottom-up analyse benadrukt. In deze studie wordt ingegaan op de rol van co-tekst in de analyse van opzettelijke metaforiek. Door middel van een serie diepgaande analyses wordt de complexiteit van de analyse van de communicatieve dimensie van metaforen onderzocht. Uitkomsten van deze studie tonen aan dat potentieel opzettelijke metaforen in sommige gevallen in relatieve isolatie (i.e., op het

niveau van de uiting) kunnen worden geïdentificeerd en geanalyseerd. Echter, de uitkomsten tonen ook aan dat het in veel andere gevallen noodzakelijk is om tekstuele informatie (co-tekst) van buiten de uiting in ogenschouw te nemen om een metafoor als potentieel opzettelijk te kunnen identificeren en analyseren.

Zo is het mogelijk dat een metafoor alleen als metafoor in de communicatieve dimensie kan worden geïdentificeerd als het metaforische gebruik wordt gerevitaliseerd door de aanwezigheid van andere potentieel opzettelijke metaforen in de co-tekst die zich verder uitstrekt dan de uiting waarin de metafoor is gebruikt. Analyse van een dergelijke metafoor in (relatieve) isolatie zou wel leiden tot de identificatie van de metafoor in de dimensies van taal en denken, maar niet in de dimensie van communicatie. Dit analyse illustreert hoe het meenemen van aanvullende co-tekst ervoor kan zorgen dat potentieel opzettelijke metaforen niet over het hoofd worden gezien.

De empirische kwestie die ten grondslag ligt aan het derde subdoel van dit proefschrift heeft te maken met de effecten van opzettelijke metaforen op redeneerprocessen en het feit dat het beperkte aantal experimentele studies dat tot op heden rond deze vraag is uitgevoerd tot gemengde resultaten heeft geleid. Deze kwestie behoeft opheldering omdat hypothesen over de effecten van opzettelijke metaforen op redeneerprocessen momenteel vaak gebaseerd zijn op idiosyncratische interpretaties van het driedimensionale metafoormodel. Daarnaast is experimenteel materiaal niet (altijd) gebaseerd op de resultaten van (uitgebreide) semiotische analyses van potentieel opzettelijke metaforiek in taalgebruik. Hierdoor rijzen vragen over de validiteit van de bevindingen. Experimenten die beweren DMT te testen zouden immers hypothesen kunnen toetsen die DMT eigenlijk niet zou voorspellen, waardoor resultaten worden verkregen die lastig te beoordelen zijn.

Om deze empirische kwestie op te lossen wordt in het laatste deel van dit proefschrift onderzocht wat de effecten van opzettelijke metaforen zijn op redeneerprocessen over een criminaliteitsprobleem. Hierbij wordt gebruikgemaakt van resultaten van de semiotische analyse van opzettelijke metaforiek in taalgebruik om hypothesen te formuleren over de verwerking van opzettelijke metaforen. Specifiek wordt verwacht dat het lezen van een toenemend aantal zinnen met metaforen die steeds dezelfde vergelijking tussen het doeldomein van criminaliteit en het brondomein van virussen (Experiment 1) of het brondomein van beesten (Experiment 2) uitdrukken leiden tot hogere scores voor waargenomen effectiviteit van beleidsmaatregelen die in overeenstemming zijn met het metaforische frame. Beleidsmaatregelen die in overeenstemming zijn met het virusframe in Experiment 1 hebben betrekking

op hervormingen, zoals het opzetten van naschoolse programma's en het uitbreiden van sociale zekerheid. Beleidsmaatregelen die in overeenstemming zijn met het beestframe in Experiment 2 hebben betrekking op handhaving, zoals het uitbreiden van patrouilles op straat en het sneller straffen van criminelen.

De resultaten van beide experimenten leveren beperkte ondersteuning op voor de hypothese. In algemene zin zorgt het uitbreiden van de metafoor niet voor toenemende waargenomen effectiviteit van maatregelen die in overeenstemming zijn met de metafoor. Het lezen van een grotere hoeveelheid virus-gerelateerde metaforen zorgt er dus niet voor dat hervormingsmaatregelen als effectiever worden gezien. Op dezelfde manier zorgt het lezen van meer beest-gerelateerde metaforen er niet voor dat handhavingsmaatregelen als effectiever worden gezien. Indien rekening wordt gehouden met de politieke voorkeur van de respondenten worden echter enkele trends gevonden. Zo leidt het lezen van meer virus-gerelateerde metaforen tot lagere waargenomen effectiviteit van handhavingsmaatregelen – maatregelen die dus niet in overeenstemming zijn met het virusframe. Voor de frameconsistente hervormingsmaatregelen wordt echter nog steeds geen effect gevonden. Indien rekening wordt gehouden met politieke voorkeur leidt het lezen van meer zinnen met beestmetaforen ertoe dat respondenten de handhavingsmaatregelen – die in dit geval in overeenstemming zijn met het frame – als effectiever beschouwen. Deze experimenten laten zien hoe nauwkeurige hypothesen kunnen worden opgesteld op basis van voorafgaand semiotisch onderzoek. Tegelijkertijd suggereert het feit dat de hypothese niet kon worden bevestigd ervoor dat aanvullend onderzoek noodzakelijk is om de verwerkingsprocessen van opzettelijke metaforen te bestuderen.

Dit proefschrift draagt bij aan de verdere ontwikkeling van het driedimensionale model van metaforen in taal, denken en communicatie door drie belangrijke kwesties rondom het model op te lossen. In de eerste plaats kan de identificatie van potentieel opzettelijke metaforen nu worden uitgevoerd met behulp van een betrouwbare identificatieprocedure: DMIP. In de tweede plaats zijn belangrijke details blootgelegd met betrekking tot de frequentie en distributie van potentieel opzettelijke metaforen in natuurlijk taalgebruik. Tot slot is een eerste set experimenten uitgevoerd die gebaseerd zijn op weloverwogen hypothesen over opzettelijke metaforiek waardoor inzicht in de effecten van opzettelijke metaforen op redeneerprocessen is verkregen. Als zodanig tonen de resultaten van de studies in dit proefschrift de waarde van het gebruik van metaforen *als* metaforen in communicatie tussen taalgebruikers.

Curriculum Vitae

Gudrun Reijnierse (Vlissingen, 1985) obtained a BA degree in French Language and Culture (cum laude), as well as a BA degree in Dutch Language and Culture (cum laude) from the Vrije Universiteit Amsterdam. During her Bachelor studies, she spent one semester at the Université Paris–Sorbonne (Paris-IV). In 2011, she received her research Master's degree in Linguistics (cum laude) from the Vrije Universiteit Amsterdam. In her MA thesis, she investigated the influence of dictionaries on metaphor identification in French.

In 2011, Gudrun started the PhD project "The value of deliberate metaphor" at the Vrije Universiteit Amsterdam. This project was supervised by Gerard Steen, Christian Burgers, and Tina Krennmayr. During the PhD she taught several courses on academic skills, French semantics, and genre analysis. In 2015, Gudrun moved to the University of Amsterdam for the final 1,5 years of the PhD project. In 2015, she also spent three months as a visiting PhD student at Lancaster University (UK), where she was supervised by Elena Semino.

Gudrun currently works as an Assistant Professor at the departments of Dutch Language and Culture and Communication and Information Studies at Radboud University Nijmegen.