SUMMARY IN ENGLISH
Metaphor in conversation

This thesis has addressed the use of metaphor in a corpus of authentic casual conversations compared to three other registers (news, fiction and academic texts). Its main aim has been to provide a comprehensive description of the manifestation of metaphor in the symbolic structure of casual conversation from a linguistic, conceptual and communicative perspective by focusing on the distribution, form, variation and function of metaphorical expressions, and to relate these to the register-specific characteristics of conversation. In addition, it has explored metaphor in casual conversation from a behavioural perspective, studying the influence of tone of voice on metaphor understanding and interpretation. Both the symbolic and psychological approaches were guided by the presumed effect of characteristic elements of the conversation register on the form, function and interpretation of metaphor.

This final chapter summarizes and brings together the main findings presented in this thesis. It describes its main contributions to the field of metaphor research, namely (1) a register-variation perspective on metaphor along the lines of Biber (1988, 1989) and (2) the explication of a reliable method for metaphor identification in conversation, against the background of a three-dimensional model (Steen 2011) that combines analyses at the level of language, thought and communication considered from the perspectives of symbolic structure and psychological processing. It sums up the main results of the linguistic and conceptual analysis of the conversational data as well as the experimental study and discusses its limitations. Finally, suggestions are made for further development.

8.1 Results of the symbolic analysis

8.1.1 A cross-register variation approach to metaphor in discourse

The Introduction and Chapter 1 discussed the changes in the field of metaphor research that have marked the development of metaphor theory over the past thirty years. Whereas for a long time metaphor was viewed as a dispensable and deviant feature that mostly belonged to artistic and rhetorical language use, the 'cognitive turn' changed this perspective and metaphor came to be considered as a fundamental feature of abstract thought, as outlined clearly in Lakoff and Johnson's (1980) *Metaphors we live by*. Conceptual Metaphor Theory proposed that instead of just talking about one thing in terms of another, our ability to perform cross-domain mappings governs our thoughts and actions. As a result, metaphor theory moved from a preoccupation with novel and creative metaphorical language to a focus on the conventional patterns of metaphorical language that were argued to reflect conceptual metaphors in people's minds. Cognitive and applied linguists have, on the one hand, embraced this cognitive approach as a promising alternative to the restricted view of metaphor as a purely linguistic phenomenon. At the same time, researchers from behavioural and discourse analytical disciplines have criticized CMT on various grounds. Psychologists question the cognitive reality of conceptual metaphors that is implied by CMT and argue that only experimental and neurological studies of individual language processing can reveal whether mappings actually take place (Gibbs 1994, 1996, 1999, 2006; Keysar et al. 2000; Murphy 1996, 1997; Steen 1994, 2007; Tomasello 1999, 2003). Discourse analysts and applied linguists object to the disregard of CMT for specific instances of metaphorical language in social contexts in its attempt to generalize towards conceptual metaphors in a complete language system. They rather advocate the in-depth analysis of the stylistic forms, functions and patterns of metaphor usage in authentic and specific usage contexts, such as discourse domains, in order to unravel the true nature of metaphor in contextualized everyday discourse (see Cameron & Low 1999; Gibbs 2008; Low et al. 2010; Semino 2008; Zinken & Musolff 2009).

In response, discourse analysts and applied linguists have embarked on precise descriptions of the linguistic forms, conceptual structures and communicative functions of metaphor in everyday discourse, including conversation (e.g. Cameron 2007a, 2008a, 2008b; Carter 2004). Previous studies of metaphor in conversation have revealed both creative (Carter 2004) and conventionalized (e.g., Cameron 2008a) uses of metaphor. They have shown how the density of metaphor differs per conversational context, possibly as a result of the topic and aim of a text (Cameron 2008a). In terms of metaphor form and type, Cameron (2008a) reports on the tendency to place metaphor in the verb and to express metaphors indirectly. Carter (2004), on the other hand, describes a preference in conversation for the use of simile, an example of direct metaphor. Moreover, metaphors may be accompanied by typical co-textual features referred to as 'tuning devices'. Such devices seem to alert listeners to the 'unexpectedness' of metaphorical comparisons and are therefore argued to mark a more 'deliberate' use of metaphor (Cameron 2008a; Cameron & Deignan 2003) or a 'metalingual awareness' in the speaker (Carter 2004). In terms of communicative functions, these studies report a broad range of ideational, affective and textual functions including the alignment of ideas, softening or strengthening of a message, to add humour, or to structure the discourse event. Finally, throughout a conversation, metaphors may become re-deployed, developed and literalized (Cameron 2007a, 2008b).

Although the above description provides a rich picture of metaphor use in conversation, it also raises questions about the truly register-specific nature of these features. Studies sometimes report contrary results. This may be due to the different nature of the conversations that were studied. Cameron's reconciliation conversations (2007a), for example, have a much more specific nature than the range of transactional, professional and intimate conversations studied by Carter (2004). More importantly, different annotation methods or even an absence of one (Carter 2004) inhibits comparison; without comparison to other registers it is difficult to establish whether particular metaphor usage is characteristic of conversation, of metaphor use in general, or of register-specific language use.

Following Biber and Conrad (2001: 176), the basic rationale of this thesis holds that only in comparison to other registers can we "understand the linguistic characteristics of any individual register". The goal of this thesis has been to present a first account of metaphor in conversation that is based on a cross-register perspective and to discuss metaphor use in conversation in terms of distribution, lexico-grammar (word class and directness), and conceptual domains in comparison to three written registers: fiction, news and academic texts. Its innovative contribution is an analysis of a corpus of 190,000 words, of which approximately 48,000 come from 24 casual conversation texts, that includes all cases of metaphor in conversation, instead of focusing on qualitative analyses alone, and that compares forms and functions across registers, instead of in one specific type of discourse.

8.1.2 An explicit and reliable method for linguistic metaphor identification in discourse

A crucial feature of the analyses in this thesis is the attention paid to an explicit, reliable method for metaphor identification in the symbolic structure of texts, which forms the basis for the systematic description of metaphor use in casual conversation described above. Such a bottom-up, inductive method has been absent from the few previous studies that have embarked on a comparative approach to metaphor in discourse (Charteris-Black 2004; Goatly 1997; Kövecses 2005, 2009; Skorczynska & Deignan 2006). These studies either lack clear methods for metaphor identification or rely on preselected items and generally cannot account for the reliability of their analyses. Reliability, however, is becoming increasingly important if corpus-linguistic research is to be regarded as converging evidence across disciplines (cf. Deignan 2005). Moreover, these studies have focused on the identification of conceptual metaphor, rather than linguistic expressions of metaphor, which in itself presents a range of difficulties because of its ambiguous nature (see Deignan 2005; Jackendoff & Aaron 1991; Ritchie 2003, 2004; Semino et al. 2004; Steen 2007; Vervaeke & Kennedy 1996, 2004; Wallington 2010).

For the analysis of our data set, we used the Metaphor Identification Procedure (MIP) developed by the Praggejaz Group (2007) as a starting point, which focuses on the identification of indirect metaphor at a linguistic level and has been positively tested for its reliability. MIP was developed into MIPVU to be able to cater to discourse-specific issues encountered in our data set.

Guidelines concerning the demarcation of lexical units and the identification of basic and contextual senses were specified. This included the use of two corpus-based dictionaries (Macmillan and Longman) to establish distinct basic and contextual senses of lexical units. In addition to indirect metaphor, MIPVU also analysed direct metaphor (such as similes) and implicit metaphor, and so-called Mflags, words that signal metaphor (such as *like*). This enabled a more informed picture of different types of metaphor use across registers. To mark the extension of the category of metaphor to include non-metaphorically used language (such as simile and direct metaphor), instances of different metaphor types were referred to as 'metaphor-related word' (MRW). Moreover, a separate category of borderline cases ('WIDLII', When In Doubt Leave It In) was added for truly unclear cases that could not be solved after group discussion. Chapter 3 presented the manual containing the resulting instructions for metaphor identification.

Similar to MIP, MIPVU has consistently produced positive reliability results through a range of reliability tests. It should, however, be noted that metaphor identification proved hardest for casual conversation, due to the lack of contextual features that were rendered in the transcripts. Challenges to MIPVU were described in Chapter 4 and include difficulties in understanding the contextual meaning of a lexical unit, as happens in the case of unclear or unfinished utterances. Dependent on its context, MIPVU either codes these as ambiguous cases ('WIDLII') or discards them for metaphor analysis ('DFMA'). Another problem is the difficulty in distinguishing between metaphor and metonymy. Problematic cases that led to differences in analyst opinion were, however, always resolved in a separate discussion round before the data were finalized. Moreover, a round of troubleshooting checked the consistency of our annotation and corrected the files where necessary. In practice, the DFMA code was adopted for less than 1% of the lexical units in conversation. In the cross-register analysis, the WIDLII code did not prove to be specific to any of the registers. As such, MIPVU provides an empirical basis for the corpus-linguistic analysis at the heart of this thesis and may serve as an explicit and practical method for metaphor identification in future studies.

8.1.3 A three-dimensional approach to metaphor: connecting symbolic and behavioural research

The Introduction and Chapter 1 introduced Steen's (2008, 2011) three-dimensional model of metaphor in language, thought and communication as the background against which this thesis was written. This model results from the interaction between discourse-based studies of metaphor form and function and psychological studies of metaphor processing. In response to CMT, an increasing amount of psycholinguistic research has been devoted to the manner in which metaphor is processed (Bowdle & Gentner 2005; Gentner & Bowdle 2008; Giora 2003, 2008). The main conclusion from these studies is that metaphor is not by definition processed as metaphor (via comparison), but rather through categorization or lexical disambiguation. More specifically, Bowdle and Gentner concluded in their Career of Metaphor Theory that conventional metaphors were typically processed through categorization, whereas novel metaphors were processed through comparison. Moreover, similes were processed through comparison, whereas metaphors were processed through categorization. The implication that metaphor processing depends on conventionality and form is an interesting one in light of the different forms of metaphor found in authentic discourse, since it offers some clues about the effect of a metaphor's manifestation on the cognitive reality of cross-domain mappings. Different discourse-based theories have started to connect formal characteristics of metaphor in language to hypotheses about processing, introducing notions of 'deliberate' metaphor (Cameron 2003; Semino 2008; Steen 2008, 2011) and 'waking' metaphor (Müller 2008). Steen (2008, 2011) specifically has begun to explain this connection as dependent on the way a metaphor is communicated, either deliberately as a cross-domain mapping or non-deliberately. In addition to studying metaphor in terms of its formal features in language and its potential cognitive representations in thought, the symbolic analysis of metaphor should therefore pay attention to its communicative properties in order to be able to connect findings to psycholinguistic research through hypotheses of metaphor processing.

The distinction between three dimensions of metaphor analysis has provided a practical structure for the analyses conducted in this thesis. Firstly, the MIPVU procedure expressly focuses on the identification of metaphor in language, collecting metaphor-related words without assuming

specific underlying conceptual structures. The linguistic data collected formed the basis for the subsequent corpus-linguistic analysis, again without focusing on the possible conceptual structures. A perspective of metaphor in thought was adopted by using a domain perspective available in the semantic annotation tool Wmatrix. This tool helped to find patterns of semantic organization based on the data itself, providing one way of reaching potential conceptual structures from authentic instances of metaphor. A perspective of metaphor in communication was adopted by focusing on the communicative properties of metaphor that seem to point to deliberate use of metaphor as a cross-domain mapping. This was most specifically relevant in the analysis of types of metaphor, which included cases of direct metaphor. It should be noted that none of the three dimensions involves claims about actual processing. A processing study was conducted separately in a behavioural experiment.

Advances in the field of metaphor theory have resulted in the study of many different dimensions of metaphor, approached from different disciplinary perspectives (see Steen 2007, 2011). Along with the development of metaphor theory has come an increased awareness of the need to first tease these dimensions and disciplines apart before insights can be exchanged to build multidisciplinary frameworks. In practice, such clear demarcations help determine the possible implications and limitations of a study. The three-dimensional model has provided a framework to study metaphor in conversation from a lexico-grammatical, conceptual as well as rhetorical point of view and has aimed to provide a transparent structure.

8.1.4 Results of the linguistic analysis

The quantitative cross-register comparison between metaphor in conversation, fiction, news and academic texts was guided by one main question: which linguistic forms of metaphor (in terms of word class, relation to metaphor and metaphor type) are used in which discourse situations and for which purpose in the symbolic structure of conversational discourse, and are truly characteristic of conversation in relation to other discourse registers? Their comparison resulted in both general patterns of metaphor use as well as specific patterns of different metaphor types for each separate register. Resulting scales of metaphor use were related to Biber's (1988) communicative dimensions, which guided the identification of the overall function of metaphor types. Secondly, lexico-grammatical patterns of metaphor use were interpreted in terms of register-specific uses of word class. As a result, metaphor-related language was added to the linguistic features included in the approach to register variation advocated by Biber (1988, 1989) and colleagues (Biber & Conrad 2001; Biber et al. 1999).

In general, results showed that 13.7% of all data from the combined registers were metaphor-related. Most of these were indirect and clear metaphors. Conversation contains a total of 7.7% metaphor-related lexical units (6.8% clear MRW, 0.9% unclear MRW) and manifests the smallest use of metaphor-related words. This finding repeats itself in the subcategories of metaphor type and relation: conversation contains the lowest number of indirect metaphor, direct metaphor, implicit metaphor and Mflags in comparison to the other registers. This result suggests that we rather seem to write than speak by metaphors in everyday discourse.

In terms of Biber's (1988) communicative dimensions, metaphor appears to be more characteristic of informational rather than involved registers. The relative absence of metaphor converges with the situated nature of conversations: much of its content concerns the immediate context. This is especially relevant to the type of conversation studied in our data set, which typically involves instances of talk in action, instead of discussions of more abstract topics (e.g., Cameron 2007a). The influence of topic on metaphor use can already be noticed in the texts in our conversation corpus. Metaphor use ranges between 2.9% and 10.1% and seems influenced by the fact that some are more focused on the action at hand whereas others involve more interactional and involved purposes.

However, in-depth analysis showed that the picture is more complex when specific word classes are considered. Within each register, metaphors are relatively often expressed as verbs and prepositions. Some metaphorical uses of word classes are, however, more typical of specific registers. An example is the metaphorical use of determiners, which is the only word class that stands out as typically related to metaphor in conversation. Conversation requires speech partners to comment and elaborate on what was previously said and mostly invites them to talk about their immediate context,

both in space and time. The metaphorical use of demonstrative pronoun *that* allows speakers to quickly summarize a previous sentence or longer stretches of text as one 'tangible' topic and to immediately indicate thoughts and feelings about this topic (e.g. "*That*'s terrible!"). This pattern may be ascribed to the on-line interactive nature of conversation.

Metaphorical use of the remaining word classes appeared more typical of other registers. A close examination of the behaviour of metaphor in each word class revealed examples of metaphor-related words that are typical of conversation alone, but also showed that many of the metaphor-related words in conversation are shared by the written registers; they simply are adapted to fit the informational, narrative and involved concerns of each register. For example, adjectives include impolite, informal adjectives and evaluative adjectives that mostly occur in constructions that are highly typical of conversation because of their colloquial nature (e.g. '*Bloody* hell, '*Fine*, thank you' and '*Fair* enough'). With their affective and interpersonal nature, they contribute to the involved and situated nature of the conversation register. The metaphorical use of prepositions is generally used to refer to time and manner ('*on* Wednesday' and '*in* a big way') in conversation, whereas the expository writing of news and academic texts includes the introduction of topics (e.g. '*In* discussing the boundaries of murder…'). Prepositions conform to situated concerns in conversation, but are also used to structure text in the informational registers. Moreover, metaphor-related verbs usually consist of low content verbs (such as delexicalized verbs *have, make, take, and give*) in conversation, whereas they are more specific in the academic register. This has been related to the constraint placed upon language users to produce language in an on-line setting; low-content verbs are generally easy to process (cf. Chafe 1994). These are just some examples provided in Chapter 5 of the way specific metaphor-related words are used to function in line with the specific communicative concerns of the four registers.

The close analysis of metaphor-related words in each word class revealed two more general patterns that characterize metaphor in conversation. Firstly, inspection of type-token ratios of content words generally showed least variation in metaphor use in conversation, whereas fiction included most variation in metaphor use. In other words, conversations more often include the same metaphors, whereas fiction, news and academic texts show a more diverse style. This concurs with the difference in diversity between conversation and the expository registers observed by Biber et al. (1999). Secondly, conversation, and to a lesser extent fiction, shows a more equal distribution between non-metaphorical and metaphorical usage for most of the metaphorical lexical units than news and academic texts metaphor, where metaphor-related words are more often found in their metaphorical sense. In other words, lexical units that are related to metaphor in conversation are also more often not related to metaphor in conversation. This pattern seems due to the situated nature of conversation and the need for speech partners to comment on their direct environment. It, however, implies that metaphorical and non-metaphorical uses of words frequently alternate in conversation, a phenomenon that Cameron refers to as the "borderlands of metaphor, metonymy and the literal" (2010: 351).

In addition to some of the word classes, distinct metaphor types also manifested register-specific usage that seemed to move beyond the general distinction of metaphor use in informational versus involved texts. Direct metaphor and Mflags proved more typical for news and fiction texts than for academic texts and conversation. A closer inspection revealed that the use of direct metaphor was typically signalled in all registers. Conversation differs from the written registers in that the direct comparisons are typically short and signalled by *like*. Moreover, they are highly conventionalized. By contrast, the written registers make less conventionalized use of direct metaphor. Signals are more varied and direct metaphors are more elaborate or extended across utterances, especially in news and conversation texts. Moreover, they seem to be applied for more rhetorical purposes, such as to make a reader understand a topic (academic and news texts), but also to be persuaded by an argument, either because of humorous or effective comparisons (news texts) and for descriptive and imaginative purposes (fiction texts). An example from conversation is the expression "He looked at me *hard as nails*". By contrast, an example from fiction is the sentence "He strokes its side which is white and marked with round patches of black *like islands on a naively drawn map."* These results suggest that direct metaphor and simile are typical of more creative, narrative texts in which writers invite readers to make comparisons for several rhetorical purposes.

Within the framework of this thesis, the discussion of direct metaphor and metaphor signalling has been related to notions of deliberateness and metaphor in communication. The instances of

metaphorical expressions that have been reported in this work have generally concerned non-deliberate, conventional metaphors. They are common expressions that are used without drawing particular attention to their cross-domain mapping in the symbolic structure of the text and which differ from more striking examples, such as those illustrated by Carter's (2004) 'demotic creativity' (e.g., the humorous extension of idiomatic expressions). On the one hand, this is a logical, concomitant result of the quantitative corpus-linguistic approach to our data set, which includes all instances of metaphorical manifestations of metaphor (including, for example, prepositions, delexicalized verbs, demonstratives) and focuses on the description of the most common and typical instances of metaphor. At the same time, the qualitative analyses of the conversational data in the linguistic and conceptual chapters, did not reveal many patterns of creative application in conversation, whereas this was more often found in news and fiction texts. The distribution of direct metaphor and metaphor signals across registers provides the clearest example of this register difference. In terms of deliberate metaphor use, it seems unlikely that metaphor in casual conversation as studied here is processed as a cross-domain mapping. However, this is hard to establish from transcripts alone and should be explored in experimental studies.

The cross-register variation approach to metaphor analysis provides a new method for analysing the manifestation and function of metaphor in different types of discourse that puts previous research into perspective. The above results were based on an exhaustive account of the characteristics of metaphor in conversation, relative to three other registers and with a specific focus on word class and metaphor type. Based on the present data set, it clearly shows that metaphor is least often metaphorically used in casual conversation. In terms of lexico-grammatical form, it supports Cameron's (2008a) suggestion that English speakers put metaphor in the verb in that in all registers verbs and prepositions are most often related to metaphor. In terms of different manifestations of conceptual structure, it questions Carter's (2004) intuition that similes are more frequent than metaphor in everyday speech, since most metaphor-related words are indirect and direct metaphor is least typical of conversation. In terms of deliberateness, or metaphor in communication, metaphor-related words are generally conventional, without drawing attention to its cross-domain mapping in the language structure. It therefore seems likely that metaphor-related words in conversation are not actually processed as cross-domain mappings, although experimental studies should further develop this hypothesis.

8.1.5 Results of the conceptual analysis

Much previous metaphor research in discourse has focused on metaphor at a conceptual level. Domain mappings may reveal systematic patterns that offer a view of the way people and communities approach abstract notions such as life and life's experiences (e.g. Gwyn 1999 on illness). Similar generalizations across different texts from one and the same register may also lead to an understanding of the systematic patterns underlying domains of discourse. However, establishing a connection between metaphor-related words and their supposed conceptual structures has become a notoriously problematic endeavour (see Deignan 2005; Jackendoff & Aaron 1991; Ritchie 2003, 2004; Semino et al. 2004; Steen 2007; Vervaeke & Kennedy 1996, 2004; Wallington 2010). One of the main challenges is to get rid of the subjective nature of connecting metaphor in language to relevant domains that make up a mapping. Some researchers have started to address this problem through the development of explicit procedures, such as metaphor-led discourse analysis (Cameron & Maslen 2010) and Steen's five-step method (1999, 2007, 2009). One recent addition has been the semantic annotation tool Wmatrix (Rayson 2008), which has been introduced to serve as a tool for the identification of expressions of metaphor (Koller et al. 2007; Semino et al. 2009) on the basis of a tagging system that automatically assigns relevant domains to lexical units. Chapter 6 has explored its possible applications for the identification of metaphor from a domain perspective, investigating its potential for a more automated bottom-up approach to metaphor identification than MIPVU, as well as a more automated top-down approach to metaphor identification than adopted in, for example, Koller (2004). Moreover, it described its additional value for a cross-register variation description of casual conversation. It has thus added a conceptual level to the analyses conducted in this thesis.

A comparison of the identification of metaphor through MIPVU and through Wmatrix concluded that Wmatrix was generally able to provide grounds for cross-domain mappings of strong content words, but does not provide distinct domains for common function words and delexicalized verbs. Moreover, the generalizing nature of semantic domains sometimes lead to the conflation of domains that are more subtly distinct, such as those based in personification, extension and hyperbole. As such, the identification of metaphor through Wmatrix is less appropriate for an exhaustive approach to metaphor in conversation. Moreover, its possible aid in arriving at conceptual structures is limited, given the general nature of the domains. Its potential for speeding up the process of metaphor identification is therefore questionable. Nevertheless, the potential of the semantic domain tagger for automated metaphor identification seems promising with the right adjustments.

Previous studies (e.g. Semino et al. 2009) have demonstrated the merit of Wmatrix for identifying metaphor-related words by comparing the semantic domains emerging from a text or discourse to those of a reference corpus, resulting in a list of key domains that determine a text or discourse type. These domains are based on the first domain tag assigned to each lexical unit. From this list, potential source domains for metaphor are selected on the basis of incongruity, after which the words belonging to these domains are inspected for their relation to metaphor. Typically incongruous are those domains that deviate from the topic of the text. In informational written texts these are often more concrete and human. Such case studies therefore often single out concrete and unexpected domains as potential source domains for metaphor. The difficulty of such an approach to identifying metaphor in conversation lies in the conventional nature of its metaphors, because of which the target domain often ends up in first position. Because of the concrete nature of most conversation topics, those concrete source domains that do end up first will not stand out as unexpected or distinct. Such an approach is therefore not as straightforward as it may seem and does not necessarily speed up the annotation process.

Finally, domain saliency was used as a starting point to describe the role of metaphor-related words within one semantic domain that is typical for conversation in comparison to written registers, 'Location and direction'. Conversation clearly differed from the written registers in terms of number, variation and type of metaphor-related words, repeating the results obtained in the lexico-grammatical approach albeit from a broader domain perspective. In effect, conversation contained the lowest number of metaphors and the least variation in metaphorical lemmas. Moreover, the domain was more often non-metaphorically than metaphorically used. The opposite was true for the informational written registers. The written registers also showed more abstract and creative use of metaphor. These results reflected the involved, situated and on-line nature of conversation identified in our previous findings and the informational, abstract, off-line nature of written registers. Moreover, the narrative concerns of fiction and news were highlighted. This final analysis thus approached metaphor in casual conversation from a semantic domain perspective, thereby adding to Biber's (1988) lexico-grammatical approach to register variation.

The Wmatrix analyses conducted in this thesis have shown that the tool's merit for casual conversation mostly lies in its ability to collect words that share the same underlying domain and to explore these for metaphor use across registers. It provides one way of approaching the data set from a conceptual angle and of dealing with the difficult task to link a metaphor-related word to its underlying source domain.

8.2 Results of the behavioural research: the addition of multimodality in an experiment on the effect of tone of voice on metaphor understanding

Within the Metaphor in Discourse project, casual conversation is the only register that originally consists of spoken data. In order to offer these materials as part of the BNC corpus, the recorded conversations have been reduced to transcriptions that (for obvious reasons) largely ignore paralinguistic elements such as gesture and tone of voice. As a result, this thesis has presented a close examination of expressions of metaphor in the linguistic component of a message. However, it was observed throughout the thesis that linguistic components form only part of an utterance, a fact which has made the reliable identification of metaphor slightly more difficult in conversation than in the

written registers. Conversation scores a mean kappa of 0.78, whereas the written registers score an average of 0.87.

Chapter 1 reported on how experimental studies of metaphor processing have focused on the influence of different characteristics of metaphor on metaphor processing, such as conventionality, form and aptness (see Bowdle & Gentner 2005; Glucksberg 2003), cotext (Ortony et al. 1978) and characteristics of individual language users (e.g. recipients' level of expertise; Steen 1994). In line with its multidimensional interdisciplinary framework, Chapter 7 of this thesis has explored the effect of an additional characteristic, that of tone of voice, on metaphor understanding. Different experimental studies have shown that in spoken language, it not only matters what is said, but also how it is said. The experiment is included to draw attention to the multimodal context of metaphor in conversation that is almost absent from the transcripts of the BNC Baby that were used for the text analyses.

The study combined previous insights on the effect of conventionality on metaphor processing (Career of Metaphor Theory, Bowdle & Gentner 2005) with the disambiguating potential of tone of voice established by Nygaard and Lunders (2002). In effect, tone of voice was introduced to disambiguate or steer metaphor comprehension and interpretation (i.e. which sense is meant?) in order to test the influence of tone of voice on metaphor processing. An experiment was conducted in which listeners were presented with similes in congruent, incongruent or biasing, and neutral tone of voice with respect to their affective connotation. Moreover, familiarity was added as an independent variable: the similes consisted of high-familiar, medium-familiar and low-familiar items. Subsequently, the effect of tone of voice on metaphor comprehension was measured by observing reaction times to spoken similes. Moreover, the effect of tone of voice on metaphor interpretation was measured by considering the semantic valence of participants' requested paraphrases.

The results suggest that emotional tone of voice can subtly influence speed of comprehension of figurative language and is indeed immediately integrated during simile processing. Tone of voice slows down comprehension speed when similes with negative semantic valence (e.g. "That desk is like a junkyard") are combined with positive, incongruous tone of voice. This was related to studies of irony (Attardo 2000), which argue that positive irony (as in the above example) is much less common than negative irony (i.e. positive statements with negative tone of voice). In this case, the unexpectedness of tone of voice led to an effect on comprehension speed. However, there is a more apparent influence of tone of voice on metaphor interpretation. In-between and low-familiar items seem more flexible in interpretation than high-familiar similes since they receive more negative interpretations when uttered in a negative tone of voice. This agrees with predictions based on the Career of Metaphor Theory, which expects conventional or familiar meanings to be more ingrained in people's system than less familiar or novel ones.

The study thus concluded that there was some influence of tone of voice on metaphor comprehension and interpretation. The results imply that negative valence seems to be the marked case and listeners seem more drawn towards both negative semantic and voice valence. This effect was explained by the so-called *negativity bias*, which argues that people are generally biased towards negative information as opposed to positive information (Baumeister et al. 2001). Tone of voice therefore is one of the additional constraints on the understanding of figurative language, which is highly specific for spoken language as opposed to written discourse genres.

8.3 Final remarks and suggestions

It is hoped that this thesis has illustrated that a quantitative, corpus-linguistic, cross-register variation approach to metaphor is worthwhile, especially since the annotation of large corpora in a reliable fashion requires a lot of time, effort and cooperation between analysts. The result has been an exhaustive description of examples of metaphor-related words in casual conversation that look much less creative or humorous than the examples of 'demotic creativity' (Carter 2004) that this thesis started out with. This can be explained as a result of our quantitative approach, which focuses on common uses of metaphor in conversation. Gripping or funny examples arrived at through qualitative analysis apparently form the exception, rather than the rule. Moreover, it is simply characteristic of the specific data that were collected. Although the title of this thesis is 'Metaphor in conversation', the

data set in our corpus contained casual conversations that often concerned themselves with specific actions (talk-in-action). The results in this thesis obviously cannot be generalized beyond these selected texts. Based on the different number of metaphors found in each of the 24 texts it was suggested that the topic of conversations might influence the distribution and type of metaphors used. For future research, it therefore seems worthwhile to include other types of conversation and talk in similar studies of metaphor variation, such as, for example, business meetings or interviews, which contain their own specific communicative purposes. The present data set in the discourse project was designed to match the main types of discourse discussed by Biber et al. (1999). However, with three types of written registers and only one spoken, the latter mode seems underrepresented.

Not everyone will agree with all of the annotation decisions adopted in this thesis. As Chapter 1 has shown, metaphor research has become a field that incorporates many different disciplines and dimensions and there are many ways to approach metaphor in discourse and many stones left unturned. One disputable feature of MIPVU, for example, is its decision not to move beyond word class when establishing the basic and contextual sense of a metaphor-related word. As a result, metaphorical derivations that move beyond word class, such as verbs like *to dog* or *to hound*, are not included. This may influence the number of metaphors, although such discrepancies have not occurred much in conversation. Moreover, it may be argued that the use of Macmillan and Longman to establish the distinct basic and contextual senses for each metaphor invariably suffers from the structure, aims and concerns faced by its authors. Its counterargument would be that any decision is subjective. Using corpus-based dictionaries is simply a means to make it less so. Finally, this thesis has not presented analyses of the development of metaphor in stretches of text, a type of analysis that is quite common in conversation analysis. The reason for this is twofold. On the one hand, the metaphor-related words found in the data are generally 'local' manifestations of metaphor. At the same time, the extracts used are never complete conversations, starting at different places in the conversation.

Although dealing with a multimodal form of communication, this study of metaphor in conversation was limited to the analysis of linguistic material only. A separate experiment was included to raise awareness of the possible effect of tone of voice on metaphor processing. For reasons of time, the study included similes as stimuli material. Our corpus has, however, clearly shown a relative absence of this type of metaphor, especially in casual conversation. The annotated corpus that has been the result of the quantitative analysis presented in this thesis may perhaps form the basis of stimuli acquired from authentic examples in future experiments.

Finally, the four types of discourse were compared on the basis of linguistic expressions. In view of the growing evidence of metaphor in other modes of expression, such as gesture (e.g. Müller & Cienki 2009), it may be argued that the cross-register comparison presents an unfair picture. Ideally, an exhaustive analysis of metaphor in conversation includes all metaphorical gestures, or gestures that combine with language into metaphor. A similar case can be made for intonation, although evidence of metaphor in this mode is still underdeveloped (but see Johanssen Falck et al. 2010). At present, such a multimodal analysis goes beyond the possible scope of this research. Methods for identification of (metaphorical) gestures are under development (see the *Togog* project by Müller and colleagues, Cienki 2010, and Korotkov 2011) and the study of metaphor in prosody has only begun to scratch the surface. However, the absence of both modes in an account of metaphor in conversation should be born in mind when conversation is argued to contain the lowest number of metaphors. Clearly, this result is founded on verbal analysis alone. In a similar vein, the identification of deliberate metaphor in communication does not yield many likely candidates in the present data set. However, it may well be that more potential cases of deliberate metaphor are found in the interaction between metaphor-related words and, for example, intonation.

To conclude, it is hoped that this thesis inspires other corpus-based cross-register comparisons of metaphor use in different types of discourse and adds new insights to the existing picture of the forms and functions of metaphor in casual conversation. In terms of spoken discourse, the study of many other types of conversation and talk, as well as modes of expression, will need to be addressed to come to a complete picture of metaphor in conversation. Metaphor researchers are up for an exciting journey.