

# 3.1 The Cognitive-Linguistic Revolution in Metaphor Studies

*Gerard Steen*

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## 1 Introduction

Cognitive Linguistics was partly founded on Lakoff and Johnson's Conceptual Metaphor Theory (Lakoff and Johnson, 1980, 1999). In their view, metaphor is not just a matter of language but first and foremost a matter of thought: metaphor involves understanding one thing in terms of something else, such as time as motion, ideas as food, arguments as war or organizations as plants. Our concepts of time, ideas, arguments, or organizations are partly structured by metaphorical projections, or 'mappings', from the knowledge we have about motion, food, war or plants: time can fly, ideas need to be digested, arguments can be won or lost and organizations can grow or need to be pruned. The explanation of this pervasive and systematic presence of metaphor in thought is that the former, 'target', concepts are typically abstract, less well-understood and hard to delineate in comparison with the latter, 'source', concepts, which are typically more concrete, better understood and easier to specify. Since humans have a need for many such less concrete concepts, many parts of our conceptual

systems are partly metaphorical. Cognitive linguists consequently claim that metaphor is not the deviant language of poets, politicians, and patients, as was the dominant view for more than two millennia, but one basic building block of a lot of language, thought and communication.

What is essential for Cognitive Linguistics is that the ubiquitous presence of metaphor in thought is reflected in the polysemous nature of many of the corresponding lexical units in language: the above examples *fly*, *digest*, *win*, *lose*, *grow* and *prune* all display conventionalized metaphorical senses that can be looked up in a dictionary of English. Moreover, these patterns in language structure are not just limited to the semantics of lexical units but have been revealed in other lexico-grammatical constructions as well (Panther, Thornburg and Barcelona, 2009). Thus, the relation between *Bill gave me an apple* and *Bill gave me a headache* has been analysed as involving more than just the lexical semantics of *give*, raising questions about the syntactic, semantic and pragmatic properties of entire constructions that are used metaphorically. Conceptual metaphors also work across most languages and cultures, suggesting that metaphor in thought and language may involve general anthropological and cultural processes of conceptualization and expression, which considerably broadens the agenda as well as appeal of the cognitive-linguistic approach (e.g. Kövecses, 2005). For instance, happiness is expressed with lexis suggesting that HAPPINESS IS UP, HAPPINESS IS LIGHT OR HAPPINESS IS A FLUID IN A CONTAINER in completely unrelated languages like English, Chinese, Hungarian. The expression of metaphor in thought by some semiotic system is finally not limited to language but may also be found in gesture, visuals, rituals and so on (e.g. Cienki and Müller, 2008; Forceville and Urios-Aparisi, 2009). One visual advertisement, for instance, juxtaposes an image of the mushroom cloud of a nuclear explosion on the left to an image on the right of a Gibson guitar placed in an analogous position to the shape of the cloud. The point of this metaphorical visual is obvious. These variations on the study of metaphor have therefore both deepened and broadened the conceptual dimension of language research that is characteristic of Cognitive Linguistics.

It is the aim of this chapter to chart some of the most exciting developments triggered by the cognitive-linguistic approach to metaphor. In Section 2, I will discuss the most important conceptual aspects of metaphor as theorized via the novel cognitive-linguistic notions of (a) conceptual metaphor and (b) complex versus primary metaphor. In Section 3 I will then continue with a discussion of the most important aspects of the use of metaphor in discourse, (a) connecting its use with frames, scenarios and other aspects of discourse; (b) and discussing the most recent issues that have arisen from this work, the notions of discourse metaphor and deliberate metaphor use. Section 4 will then address issues of reliability and validity in cognitive-linguistic metaphor theory and

research, centring on what counts as metaphor in thought. This will lead to a brief concluding comment that looks forward into the future.

## 2 Conceptual Aspects of Metaphor: The Model

### 2.1 Conceptual Metaphors

The cognitive-linguistic approach to metaphor launched by Lakoff and Johnson (1980) revolutionized the study of metaphor because until then dominant traditional views held that metaphor was an isolated, seldom occurring poetic or rhetorical quirk. Lakoff and Johnson reconceptualized metaphor in language as the systematic and frequently visible tips of lots of icebergs of massive underlying conceptual structures of metaphor in thought. They claimed that metaphor is not a deviant phenomenon in language but a fundamental cornerstone in cognition. Their evidence came from numerous examples in language such as the following (Kövecses, 2010: 6):

THEORIES ARE BUILDINGS

Is that the *foundation* for your theory?

The theory needs more *support*.

We need to *construct* a *strong* argument for that.

We need to *buttress* the theory with *solid* arguments.

The theory will *stand or fall* on the *strength* of that argument.

So far we have *put together* only the *framework* of the theory.

What psychologists have called the ‘linguistic structure’ of these examples (e.g. Gibbs, 2006: 90, 119) suggests that there is a systematic correspondence between our knowledge of theories and our knowledge of buildings and that we exploit our knowledge of buildings to think and talk about aspects of theories. The general explanation of this type of correspondence holds that we have more direct experience with buildings than with theories which enables us to utilize the resulting knowledge for conceptualizing theories along the same lines. This phenomenon occurs across many semantic fields, giving rise to postulated conceptual metaphors like LIFE IS A JOURNEY, LOVE IS A JOURNEY, UNDERSTANDING IS SEEING, ORGANIZATIONS ARE PLANTS and so on. By way of critical comment, however, it has been pointed out that a marked feature of this early cognitive-linguistic work was a reliance on intuition and on specially selected invented examples; only more recently has the focus shifted to authentic, discourse data, revealing less neat, more messy relations between metaphor in thought and language (e.g. Deignan, 2005).

Our knowledge of buildings is said to function as a conceptual 'source' domain from which correspondences are mapped onto our knowledge of theories, the conceptual 'target' domain. Thus, when theories are buildings, we know they must have foundations, which must be solid and strong; if the foundations of a theory are not solid and strong enough, it may need buttressing by other kinds of support; and so on. Each of these aspects of buildings are systematically organized in a conceptual domain that displays their mutual relations, including relations that are manifested in language as synonymy, antonymy and hyponymy. Thus, *foundation* can be replaced by *base* (synonymy), a theory can *stand* or *fall* (antonymy), and a building is a solid *structure* (superordinate concept, hypernym in language *structure*) which can manifest itself as a *house*, *palace*, *factory* and so on (subordinate concepts, hyponyms in language). This would predict the possibility of for instance a *ramshackle theory*, which is attested by a brief search on the internet: '... Pavlov spent the last thirty years of a long life *erecting a ramshackle theory* of "higher nervous activity" upon conditional reflexes' (Davenport, 2001: 273).

All of this knowledge may be recruited when thinking and talking about theories, in order to indicate, for instance, the quality of the arguments in a theory, or the way they are related to each other in a coherent theoretical whole. A useful overview of many of these conceptual metaphors and detailed examinations of their structure, as well as their main function as a device for reasoning, may be found in Kövecses (2010). A computational model of the lexical semantics expressing the elements, relations and levels of these conceptual structures is now available through WordNet, which is best approached through the webpage <http://wordnet.princeton.edu>. WordNet presents the semantic relations between the four main word classes of English in conceptually justified ways, and is now expanded into a Global WordNet for many other languages in the world. It can in principle be used to examine many of the assumptions and conclusions put forward by cognitive linguists about the linguistic and conceptual structures of the two domains involved in all metaphor, but this is an opportunity that remains to be explored in empirical detail in the near future.

A particularly attractive feature of the cognitive-linguistic revolution was its ability to include the more spectacular, superficially deviant cases of metaphor as exploitations of the postulated conventional metaphors in thought. Thus, Bob Dylan's 'Time is a jet plane, it moves too fast' is clearly a novel linguistic expression of the conventional metaphorical idea that time can move, regularly expressed in language by words like *pass*, *go by*, *crawl by*, and *fly* that display systematic, metaphorically motivated polysemy between motion and time. A more upscale illustration would be Andrew Marvell's 'But at my back I always hear/ Time's winged chariot hurrying near.' Specially poetic and rhetorical uses of metaphor, which used to be the focus of pre-cognitive linguistic metaphor research, can therefore be accounted for as special cases of the more general

approach to metaphor in all language and thought as involving conventionally established ways of understanding of one thing in terms of something else.

One crucial issue about Conceptual Metaphor Theory (from now on, 'CMT') is the question what is precisely meant by 'metaphor in thought'? Do the metaphorical structures in language function as evidence that people also construct or retrieve metaphorical conceptual structures in language processing, when speaking, writing, reading or listening? In other words, do people activate and access knowledge about buildings to construct mappings to knowledge about theories in order to comprehend conventionally metaphorical utterances about theories? This was the original, strong CMT claim proposed in Lakoff and Johnson (1980), but it has since been criticized by psychologists as amounting to a structure-process fallacy (e.g. Gibbs, 2006; McGlone, 2007). It is now generally held that cognitive-linguistic conclusions about the way metaphor works in on-going language and thought processes should be tested independently by psychological research of language processing (psycholinguistics) and metaphorical cognition in general (cognitive psychology). The overall picture is that it is not quite clear yet when metaphor in language is in fact processed metaphorically in people's individual minds, that is, by activation of two distinct conceptual domains that are then connected to each other by some cross-domain mapping.

Another crucial issue about CMT is how a particular conceptual domain happened to get selected and become conventionalized as a source domain for a particular target domain. For even though it may in retrospect look sensible for the domain of buildings to serve as a source domain to think and talk about theories as a target domain, why buildings, and not, for instance, organisms like trees and plants, or conversations? Thus, how did speakers of English get to use buildings to think and talk about theories, and what does the assumption mean that they have easier access to knowledge about buildings than about theories? Answering these questions about the motivation of conceptual metaphor inevitably leads to the more recent distinction between complex metaphor and primary metaphor, to which we will now turn.

## 2.2 New Challenges: Complex and Primary Metaphor

THEORIES ARE BUILDINGS was subjected to further scrutiny in Grady (1997), with tremendous impact on the field. Grady showed that THEORIES ARE BUILDINGS is in fact a 'complex' metaphor, comprising two 'primary' metaphors: ORGANIZATION IS PHYSICAL STRUCTURE and PERSISTING IS REMAINING ERECT. The two primary metaphors can be combined to produce a more specific and complex conceptual metaphor, THEORIES ARE ERECT PHYSICAL STRUCTURES. This account explains why some linguistic expressions of the THEORIES ARE BUILDINGS metaphor are

conventionally available, for instance that it has *foundations*, whereas others are not, for instance that it might have *walls*: the latter is not included in the combination of the two primary metaphors, *THEORIES ARE ERECT PHYSICAL STRUCTURES*, argues Grady, whereas the former is. This account also explains how an alternative metaphorical conceptualization of theories, *THEORIES ARE FABRICS*, is different from *THEORIES ARE BUILDINGS*: it shares some of the same metaphorical structure, namely the primary metaphor *ORGANIZATION IS PHYSICAL STRUCTURE*, but not all of it, including *PERSISTING IS REMAINING ERECT*. Instead, *THEORIES ARE FABRICS* accounts for other things we can say about a theory, for instance that it has holes in it, that it can be tightly knit, can fray at the edges and that you can try to stitch it up. It will be clear that these aspects of theories do not require the primary metaphor *PERSISTING IS REMAINING ERECT*.

The most important advantage of Grady's proposal is that all primary metaphors can be directly related to experience (which is not the case for all complex metaphors, including *THEORIES ARE BUILDINGS*). Complex physical objects also display functional, organizational architecture between their parts, which we know because we interact with them; things that stay alive or continue to exist typically remain standing, which, again, is a fact from individually lived experience. The correlation between source and target domains in the real life of individuals is crucial to what was called the experiential motivation of metaphors in CMT, a corner stone in the theory (Lakoff and Johnson, 1980). Grady showed that this is based in experiential correlations in primary metaphors such as *ORGANIZATION IS PHYSICAL STRUCTURE* and *PERSISTING IS REMAINING ERECT*, which have to be distinguished from complex metaphors *THEORIES ARE BUILDINGS* or *THEORIES ARE FABRICS*, which are built from them.

Lakoff and Johnson (1999) elaborated on Grady's proposal: 'From a conceptual point of view, primary metaphors are cross-domain mappings, from a *source domain* (the sensorimotor domain) to a *target domain* (the domain of subjective experience), preserving inference and sometimes preserving lexical representation' (1999: 58). Lakoff and Johnson presented an illustrative list in which 24 primary metaphors (including *ORGANIZATION IS PHYSICAL STRUCTURE*) were explained as combining the domains of sensorimotor experience and subjective judgement, giving rise to an established linguistic manifestation, while all being related to an encompassing so-called primary experience:

*Affection Is Warmth*

Subjective Judgement: Affection

Sensorimotor Domain: Temperature

Example: 'They greeted me *warmly*'

Primary Experience: Feeling warm while being held affectionately

### *Time Is Motion*

Subjective Judgement: The passage of time

Sensorimotor Domain: Motion

Example: 'Time *flies*'

Primary Experience: Experiencing the passage of time as one moves or observes motion

### *Purposes Are Destinations*

Subjective Judgement: Achieving a purpose

Sensorimotor Experience: Reaching a destination

Example: 'He'll ultimately be successful, but he isn't *there yet*'

Primary Experience: Reaching destinations throughout everyday life and thereby achieving purposes (e.g. if you want a drink, you have to go to the water cooler)

The list is typical in its invented nature and meant to illustrate 'hundreds of primary metaphors' (1999: 59). The important point is that all primary metaphors are assumed to arise from our individual experience from our early days, becoming neurally entrenched in our brains as correlations between distinct conceptual domains. The conclusion is drawn that metaphorical cognition, like all cognition, is embodied.

This is also because the sensorimotor parts of the primary metaphors discussed above are all based in so-called image schemas, including 'Physical Structure of Entities', 'Remaining Erect', 'Warmth', 'Motion', 'Arriving at a Destination/Goal' (Johnson, 1987; Lakoff, 1987). Image schemas are knowledge units based in direct sensory perception and motor experience, displaying imagistic qualities (such as part-whole relations) turning them into cognitive gestalts. The relation between these image schemas and primary metaphor, and their grounding in embodied cognition, has not only led to ground-breaking cognitive-linguistic theory and research (Hampe, 2005) but also contributed to further-reaching debates in cognitive science (Gibbs, 2006).

Psychological evidence for primary metaphors and their basis in image schemas has been collected by psychologists Casasanto (2009), Pecher et al. (2011) and others. These studies expressly examined the conceptual nature of primary metaphors in tasks that had nothing to do with language, in order to establish the psychological, language-independent existence and functioning of primary metaphors. Developmental psychologist Jean Mandler (2004) has used primary metaphor theory as a basic building block in her new theory and research programme of cognitive development in infancy, mapping the interaction between perception, concept development and language acquisition. During early language acquisition, the above correlations may indeed be acquired by metaphorical mapping processes going from sensorimotor experience to subjective experience, getting reflected in associated language

structures. This research shows that the primary metaphor correlations between sensorimotor concepts and subjective experience appear to be valid. What is not clear, however, is whether these correlations would in fact keep driving the production and processing of related metaphorical expressions in linguistic utterances in adult language use: it is perfectly possible that words like *warmly*, *flies* and *there* in the illustrations from Lakoff and Johnson above are directly used in their metaphorical sense after a process of lexical disambiguation has simply discarded the irrelevant non-metaphorical, more basic sensorimotor sense (cf. Giora, 2008). Future research will have to home in on this rather critical question.

One deep question about primary metaphors is whether they are indeed metaphors. Since primary metaphors are based in correlations between sensorimotor experience and subjective judgements of encompassing primary experiences, they are based on association. Such correlations do not necessarily involve two conceptual domains that are analogous to each other, affording the mapping of a set of correspondences based in some form of perceived similarity, whether created or pre-existing. Even though it is probably always possible to detect at least one or two parameters that are similar between the two domains, such as the scalar or gradable quality of both 'more' and 'up', this does not mean that the basic mechanism of understanding quantity is grounded in the conceptual structure of height: a more plausible argument may be made that the two are instead related via correlation and association. The problem is, however, that this is very close to the notion of contiguity, which is the traditional structuralist criterion for metonymy.

Discussions of this issue have also emerged in Cognitive Linguistics (cf. Barcelona, 2000; Dirven and Pörings, 2003; Panther and Thornburg, 2003). Grady (2005: 48–9) has adopted the most sophisticated position about the alleged metaphorical nature of the mappings in primary metaphors: he accepts that not all mappings in primary metaphors are metaphoric, but notes that 'the patterns that can be identified as metaphoric involve a more specific mapping' (footnote 12). He subsequently suggests that this might just be 'a terminological question' (p. 49), but this seriously underestimates the importance of the issue: the terminological decision that all of these patterns are called 'primary metaphors' entails that a particular kind of conceptual mapping between the sensorimotor and subjective domains is involved, namely a metaphorical one. Yet not all primary metaphors are in fact metaphorical – as Grady acknowledges, and as is entirely accepted by Gibbs (2006: 96):

This discussion of image schemas and metaphor runs contrary to the popular view that there is some abstract similarity existing between literal and metaphorical concepts, such as our understanding of difficulty in terms of heavy physical weights (Murphy, 1996). There is not an objectively similar



set of attributes for concepts such as difficulty and physical weight, nor are there similar features that connect 'sunny dispositions,' 'bright words,' and 'radiant smiles.' Conceptual metaphor theory demonstrates, alternatively, that concepts from different domains are related to one another by virtue of how people are physically constituted, their cognitive abilities, and their interactions with the world.

This alternative view would therefore boil down to the conclusion that the patterns involved in primary metaphors are not based in some general notion of similarity but in correlation (association, contiguity), in which case primary metaphors are in fact primary metonymies (cf. Steen, 2007).

What happens, therefore, if we reconceptualize primary metaphors as primary metonymies, which only occasionally display metaphorical qualities? Some cognitive linguists have gone down this road and explored its implications in deeply probing theoretical reflections (see contributions in Dirven and Pörings, 2003), with John Barnden radically questioning the possibility of making the distinction between metaphor and metonymy in a useful way in the first place (Barnden, 2010). What should be noted here is that reconceptualizing primary metaphors as primary metonymies also raises new questions about the presumable motivation of complex metaphors, the original issue that led to the discovery of primary metaphors. If complex metaphors cannot be seen as compounds of primary metaphors (supposing that primary metaphors are not metaphorical but metonymic), the motivation of complex metaphor needs to be addressed anew.

Whatever the answer to the metonymic issue of primary metaphors, there is another problem that needs to be addressed. *Primary* metaphor may be motivated by correlations in experience that may have led to neural entrenchment of cognitive correlations, yet this does not explain why specific *complex* metaphors have the particular source and target domains they do. Even if it were granted that primary metaphors are metaphorical, how does the availability of ORGANIZATION IS PHYSICAL STRUCTURE and PERSISTING IS REMAINING ERECT lead to an established complex metaphor THEORIES ARE BUILDINGS? The distinct primary metaphors do not explain or motivate the complex metaphor; they simply constrain it. This is also true of their combination in THEORIES ARE ERECT PHYSICAL STRUCTURES, which again does not explain or motivate THEORIES ARE BUILDINGS. A comparable example is why we talk about ARGUMENT IS WAR, and not ARGUMENT IS FIGHTING OR VIOLENCE? There are clearly different knowledge components in all three of these source domain categories, with different experiential bases, but the way they can be distinguished and evaluated as most adequate, motivated by underlying combinations of primary metaphors, has not been addressed yet. Moreover, most people have more personal experience with argument than with war, so that the question of motivation becomes even

more convoluted. The question of the experiential motivation of complex metaphor remains a 'difficult' matter (cf. Kövecses, 2010: 95).

Lakoff (2008: 26) seems to have formulated the problem in its most acute form: 'By best fit, different cultural frames will combine with those primary metaphors and give rise to different metaphor systems. The Love Is a Journey metaphor is a good example.' But how 'by best fit' works, and what it really means, is not explained. The motivation of complex metaphor, which constituted a sensational new discovery of Conceptual Metaphor Theory in 1980, has therefore not been resolved by the proposal of primary metaphor, although it is true that the nature of the motivation problem has been identified more precisely, as occupying some middle ground between experientially motivated primary metaphors (or primary metonymies) on the one hand and non-figurative cultural frames on the other.

It is at this point that we have to make the transition from a conceptual consideration of metaphor to the way it is used in discourse. For Lakoff's individually entrenched primary metaphors on the one hand and eligible cultural frames that display different degrees of fit on the other are only brought together in complex metaphor in actual events of discourse. Lakoff's own work on metaphor in politics has shown as much (e.g. 2002), but it should be seen in the context of a large field of discourse-analytical work on metaphor that has been inspired by the cognitive-linguistic approach. It should moreover be noted that this inspiration also came from the noted absence of attested examples in early CL studies of metaphor. It is the aim of the next section to sketch the most important developments in that field in their relationship to the cognitive-linguistic approach to metaphor.

### 3 Discourse Aspects of Metaphor

#### 3.1 Metaphor in Discourse

We have seen that the conceptual analysis of metaphor has led to an increasingly detailed structural model: conceptual metaphors like *THEORIES ARE BUILDINGS* are complex conceptual structures comprising distinct primary metaphors that in turn are based in image schemas and their correlations with subjective judgements in primary experiences. It is moreover claimed by many cognitive linguists that both these image schemas and their roles in primary metaphors are neurally entrenched, which would ground metaphor in embodied cognition. The way these structures and processes of grounded cognition in primary metaphor are to be related to the original proposal of conceptual metaphors, however, remains unclear and difficult. This has raised new questions about the processing of metaphor in discourse.

Gibbs (2006: 121; 2011a: 550) has suggested that primary metaphors may be processed metaphorically because of their neural entrenchment whereas complex metaphors may arise as a result of metaphor processing in discourse, instead of as a cause. A careful reading of Lakoff suggests that he even doubts whether all primary metaphors are always processed metaphorically:

Does *up* in *Prices went up* always activate the *More is up*? It depends. In our neural systems, the *More is up* metaphor is always present in the neural system, always physically linked to the concept of greater quantity – connected and ready to be activated. But it is possible for the metaphorical mapping to be inhibited and for *up* to be directly activated. (2008: 35)

Cognitive linguists are beginning to realize that these questions pose a serious threat to the strong version of CMT, which depends on the presumed cognitive drive of complex conceptual metaphors in language use. It is possible that automatic cross-domain inferences are only used at the level of primary metaphor processing, perhaps in a metonymic rather than metaphoric fashion, and it is possible that they are not necessarily used at the level of complex metaphor processing, and it is even possible that the ubiquitous activation of primary metaphors as figures is a matter of specific conditions. Further research will have to show how the distinctions and interactions between primary and complex metaphor in processing can be made in empirically testable ways. But the alleged conceptual power of metaphor may be more limited than originally claimed.

Partly as a result of these questions about the relation between complex and primary metaphor, a new picture about metaphor in language and thought is now emerging. This development has also been stimulated by relatively independent work on metaphor in discourse analysis that has been inspired by CMT. Thus, around the turn of the millennium, authentic examples of complex conceptual metaphors were analysed in the linguistic and conceptual structures and functions of discourse by many discourse analysts, as extensively discussed in Semino (2008). Some of these researchers, like Don and Margaret Freeman examining the role of conceptual metaphor in Shakespearean drama and the poetry of Emily Dickinson, assume that their textual analyses of the role of conceptual metaphor have cognitive validity (cf. Semino and Steen, 2008). More often, however, researchers avoid making empirical claims about the cognitive validity of conceptual metaphors at the level of individual discourse processing. Many discourse-analytical researchers explicitly go on record that they have been inspired by the cognitive-linguistic approach but do not necessarily underwrite its psychological tenets about the role of complex conceptual metaphor in language processing (e.g. Charteris-Black, 2004). Their most important reason is that they do not want to commit the structure-process

fallacy mentioned above. Although this is mostly independent of the distinction between primary and complex metaphor discussed above, the tendency converges on the same question: whether and how the still sensational proposal of complex conceptual metaphors in Lakoff and Johnson (1980, 1999) is a psychological reality in individual language users' minds.

Gibbs (2011a) has reviewed the psychological evidence for CMT. He concludes that there is ample evidence suggesting that conceptual metaphors do affect online processing of verbal metaphor. For instance, when verbal metaphors in a text come from different conceptual metaphors they are understood more slowly than when they come from the same underlying conceptual metaphor. Gibbs engages with publications by sceptical psychologists and argues that their criticism is ill-directed or unfounded.

Complementary to this development, Cameron (2007) and others have promoted a social view of metaphor. This is to be distinguished from the psychological view supporting much of cognitive-linguistic theorizing (as in Gibbs, 2011a) and the structural-functional semiotic approach characterizing the discourse-analytical work applying the cognitive-linguistic view (as in Semino, 2008). The social approach focuses on metaphor use in face-to-face conversation, examining the ways in which metaphors are introduced, taken up, developed and altered between language users. Cameron promotes a form of 'metaphor-led discourse analysis' which looks at patterns of metaphor use across a discourse event, 'without assuming the existence of conceptual metaphors in the minds of individual discourse participants' (2007: 130). The bottom line of this approach involves the detection of how metaphors are shared between language users involved in the same discourse event, which is why it is a social as opposed to psychological and semiotic approach.

A fourth approach that has emerged focuses on the use of metaphor between discourse events rather than within them. One well-known example developing this line of research is Musolff's work on conceptual metaphors and scenarios in political discourse. In one study, Musolff (2004a) showed how a familiar conceptual metaphor in Western culture, *A POLITICAL ENTITY IS A (HUMAN) BODY*, was applied in a debate about European politics in such a way as to reveal its dependence on two distinct if related scenarios. In the first scenario, it gives rise to the more specific metaphor *THE CENTRE OF POLITICS IS THE HEART OF THE BODY*, so that it was natural for the British Government to make statements like the following (Musolff, 2004a: 65):

John Major last night signaled a decisive break with the Thatcherite era, pledging to a delighted German audience *that Britain would work 'at the very heart of Europe'* with its partners in forging an integrated European community. (*The Guardian*, 12 March 1991)

When the political climate deteriorated, however, another scenario emerged, in which THE CENTRE OF BAD POLITICS IS A DYSFUNCTIONAL HEART IN THE BODY. This time, the conceptual metaphor could give rise to a sentence in the media like the following:

[. . .] if Mr Major wanted to be *at the heart of Europe*, it was, presumably, as a *blood clot*. (*The Independent*, 11 September 1994)

What becomes particularly clear from this work is the fact that, in discourse, there is an inevitable interaction between the conceptual structures of conceptual metaphor and the conceptual structures of broader cultural frames or knowledge of scenarios. Moreover, these content issues also interact with considerations of contextual knowledge such as the positive or negative political climate, which can even favour one scenario as opposed to another within one domain. Furthermore, these content issues also interact with aspects of text type, where argumentation and narration impose encompassing constraints on the use of conceptual metaphor in text, facilitating humorous exploitation of possible argumentative structures ('if you want to be at the heart of Europe, then as a blood clot'). Text types like argumentation and narration hence typically exhibit discourse functions like persuasion and information or entertainment, which all display specific properties in different domains of discourse, like the media versus for instance literature or science. These typically go together with rhetorical exploitations of language potential, as in the deliberately humorous development of the heart metaphor above. If cognitive linguists have typically zoomed in on the conceptual and embodied qualities of primary metaphor that are generally recognized in cognitive science, discourse analysts are typically zooming out from the conceptual characteristics of complex metaphor to its inevitable interaction with other aspects of discourse in text and talk that are generally distinguished in discourse analysis.

In sum, no fewer than four distinct approaches to the use of metaphor in discourse have arisen since the turn of the millennium:

1. The semiotic approach focuses on the linguistic and conceptual structures and functions of metaphor in text and talk (Semino, 2008)
2. The psychological approach examines the mental processes and products of metaphor use in, typically, text comprehension (Gibbs, 2011a)
3. The social approach studies metaphor patterns in, typically, face-to-face interaction in order to examine the way metaphors are shared between language users (Cameron, 2007)
4. The historical approach addresses metaphor patterns across distinct discourse events in order to trace the evolution of metaphor over time (Musolf, 2004a).

This variegated discourse-analytical research has shown that the same complex metaphor such as *LIFE IS A JOURNEY*, *BUSINESS IS WAR* or *THEORIES ARE BUILDINGS* typically occurs in many diverging structures and functions across a wide range of usage situations in discourse. This differentiation has contributed to the above-mentioned hesitation about the validity of the notion of conceptual metaphor as a cognitively stable and real phenomenon in language users' individual minds. The typical discourse-analytical emphasis on metaphor's situated structure and function, often the result of the on-going dynamics of discourse, has promoted a sceptical attitude to the value of all conceptual metaphors as genuinely operative conceptual structures in discourse.

This has also had methodological consequences for doing research on metaphor in discourse, in that not all researchers set out from the prior existence of conceptual metaphors anymore. One cogent alternative view starts out from the linguistic data, where metaphorical expressions in the structures of language are first identified in order to then inductively infer conceptual generalizations that may or may not remind us of classic conceptual metaphors (Cameron and Maslen, 2010). This so-called complex systems approach has been endorsed by Gibbs (2011a) in his positive evaluation of CMT, signalling the need for alternative or at least complementary approaches to conceptual metaphor analysis than the cognitive-linguistic deductive one which posits the existence of conceptual metaphors in order to then check for evidence that supports this tenet.

This radically situated and dynamic view of metaphor in typically spoken discourse works in a bottom-up way that is influenced by Conversation Analysis. It needs to be contrasted with another, more top-down approach, which does allow room for an empirical investigation of the role of conceptual metaphors, as for instance illustrated by the work by Musolff. Such a top-down approach holds that the use of frames and scenarios involving conceptual metaphors is a decently testable hypothesis that requires analysis from a wide range of discourse parameters. These can be ordered by adopting a genre-analytical approach to discourse (Steen, 2002, 2011a), which assumes that all discourse events can be described with reference to a limited set of genre variables, including context variables (participants, domains, settings, medium), text variables (content, type, form, structure), and code variables (language, register, style and rhetoric). A discourse event like reading a news report on European politics sets up these variables in such a genre-specific way that it constrains the language structures and functions that are used, including metaphorical language structures and functions. We saw above that the Musolff example of conceptual metaphor use does indeed involve the genre variables of text content (scenario of heart as centre vs heart as malfunctioning organ), text type (argument), discourse domain (politics in media), discourse goal (persuasion) and rhetoric (deliberately humorous metaphor talking about blood clots in the heart). This is an illustration of the way in which conceptual metaphor use in

discourse may be explained by 'top-down' assumptions about the type of genre event in which it is studied, assumptions which can be tested in performing hypothetic-deductive research on metaphor in discourse. This makes it possible for discourse-analytical researchers of metaphor to remain close collaborators of cognitive-linguistic researchers of metaphor and keep contributing to the debate about Conceptual Metaphor Theory.

### 3.2 New Challenges: Discourse Metaphor and Deliberateness

When Musolff (2004a) discussed the relation between conceptual metaphor and scenarios for Western politics, he framed his discussion as a question about the evolution of conceptual metaphors. His question was whether variation of conceptual metaphors across discourse events and over time could be seen as a matter of evolution. Which conceptual metaphors rise and fall, which ones do not rise or do not fall, and why? This question goes back to the question we posed in the first section of this overview, bearing on the motivation of conceptual metaphor as a useful link between a selected source domain and target domain to enable us to categorize and reason about more 'difficult' phenomena in human experience.

Musolff's work has contributed to the rise of the notion of 'discourse metaphor', theoretically expounded in for instance Zinken (2007), Zinken, Hellsten and Nerlich (2008), and Hellsten (2009). Discourse metaphors are relatively stable conceptual metaphors over time that are part of metaphorical frames and scenarios used in discourse events such as we have seen illustrated by the debate about European politics. Discourse metaphors are characterized by popular expressions and phrases, such as the *heart of European politics* in our above example, which in turn enable further conceptual developments in discourse such as the positive and negative exploitations of the heart image in the media also reported above. Such discourse exploitations are guided by contextual, sociocultural forces and constrained by genre-specific expectations, as we have also seen, and they eventually lead to the conventionalization of some specific metaphorical expressions (but not others) that can be related to the central conceptual metaphor.

Discourse metaphors therefore seem to be based in conceptual metaphors such as originally proposed in CMT, but seem to have a slightly different theoretical value. They approach the status of relatively negotiable shared metaphorical models that are elaborated to a greater degree in explicit terms by language users in a particular linguistic community, as, again, with the *heart of European politics* metaphor. A more recent example is the fiscal cliff metaphor that plagued American politics around 2012/2013. In US media, discussion took place as to whether it was not more appropriate to speak of a 'fiscal slope'

or a 'fiscal hill', while in Dutch media the term was occasionally translated as a *belastingafgrond* ('tax abyss'). The conceptual adequacy and aptness of these discourse metaphors seem to be explored for a while by language users in different versions and entailments of the underlying conceptual metaphor, both seriously and in jest. One outcome may be a final version that is accepted as 'the' conceptual metaphor that will be conventionally used for a while until other versions or models challenge it. The description and explanation of all of these aspects of discourse metaphor, and their relation to conceptual metaphor, including its division into complex and primary metaphors, is one of the most exciting challenges for future research.

What is also interesting about this account is that discourse metaphor seems to display a degree of deliberate metaphor use, or even exploitation (Steen, 2008; cf. Musolff, 2011b). The perspective of the source domain in the metaphor is deliberately exploited as an alien perspective to generate new information or expressions about the target domain, for a wide range of genre-specific discourse purposes. An example from Musolff's data is the following:

The pound's *shotgun separation* from the exchange rate mechanism is proving painful for both Britain and the rest of Europe. *The two-year marriage itself was unhappy* [ . . . ]. *As in most marriage break-downs, there have been faults on both sides.* Sterling and the German mark – both big internationally traded currencies – were always going to be *uneasy bedfellows* [ . . . ]. (Musolff, 2004b: 27)

These are metaphors that are deliberately used *as* metaphors to serve specific communicative goals, in contrast with the bulk of metaphor which does not have such a special rhetorical status. In deliberate metaphor use, metaphors do seem to require online cross-domain mapping, the linguistic structures inviting or forcing language users to attend to both source and target domain in order to adopt a different perspective as they are processing the sentences of the text. Non-deliberate metaphor use may not work in this way as it may make do with lexical disambiguation. Thus, when people talk about *the heart of politics* while not intending to use the metaphor *as* a metaphor, they may simply and directly access the 'inner central part' sense of the word; but when they read the above *blood clot* example, they need to access and use the 'organ' sense of the word *heart* in order to build a coherent representation of the sentence.

This raises the question when we really do see and understand one thing in terms of something else. Does metaphor always cause an individual language user to access one conceptual domain to understand another? Or do they only do so when metaphors are used deliberately *as* metaphors, that is, as perspective changers in communication? These questions have prompted the formulation of a three-dimensional model for metaphor, in which metaphor is not



just a matter of language and thought, but also of communication (Steen, 2008, 2011b). Thus, linguistic properties of metaphors have to do with, for instance, their expression as metaphors or similes – which appears to affect their processing (Bowdle and Gentner, 2005). Conceptual properties of metaphors have to do with, for instance, the conventional or novel nature of the cross-domain mapping, which also appears to affect their processing (Bowdle and Gentner, 2005). And the communicative properties of metaphors have to do with, for instance, their deliberate or non-deliberate use *as* metaphors – whose effect on processing is currently being investigated. All metaphor use involves these three dimensions and should be analysed not just with reference to language and thought, as has been the core business of Cognitive Linguistics so far, but also with reference to communication, which has been neglected.

The idea that metaphor can be used deliberately or not deliberately has aroused a controversy about the notion of deliberateness which goes to the heart of Cognitive Linguistics. When deliberateness is equated with consciousness, researchers object that language use is hardly ever conscious, and that a lot of cognition and behaviour are hardly ever conscious (Gibbs, 2011b). However, when we make a distinction between consciousness and deliberateness, the situation changes. Even though it is possible to assert that we do not know anything about Shakespeare's consciousness when he wrote 'Shall I compare thee to a summer's day', it does not make sense to deny that he wrote this metaphor deliberately, as a metaphor. Nor does it make sense to assert that he did not deliberately write the extended metaphorical comparison that follows and makes up the body of his famous Sonnet 18. This type of metaphor is deliberate because it insists in positioning the reader in some source domain by forcing the reader to mentally attend to the source domain as a referent in its own right: 'Shall I compare thee to a summer's day?' There are particular linguistic structures that clearly signal deliberate metaphor use, including the use of a verb like *compare* in between two incomparable entities that are each presented in their own right. The rest of the poem features comparative structures in an extended comparison (*thou art more lovely and more temperate*) and so on. Deliberate metaphor hence does not have to be conscious to be deliberate. In fact, it is the other way around, deliberate metaphor *affords* conscious metaphorical cognition (Steen, 2013).

In the structuralist-functionalist paradigm in which Cognitive Linguistics is located (Butler, 2003), all metaphor is by definition intentional, in the general sense of 'intentional' that applies to all language use as intentional. At the same time, only some metaphors are deliberately used as a metaphor, which is not a contradiction. Deliberate metaphor use is probably generally unconscious, in the sense of language users not paying any metalinguistic attention to the fact that they are doing metaphor, as has been correctly claimed by cognitive linguistic theories of metaphor from the start. However, since deliberate metaphor

is based in attending to the source domain, creating a change of perspective on the target domain, this kind of attention can afford conscious metaphorical cognition – triggering deliberate thought about one domain in terms of another. This impingement on consciousness probably depends on the amount of time and attention that are spent on the alien role of the source domain within the confines of the target domain of the text. These are exciting new questions for theoretical and empirical research about the cognitive foundations of varied metaphor use (Steen, 2013).

#### 4 Reliability and Validity

Over the past 30 years, the clear examples in the cognitive-linguistic classics, such as *THEORIES ARE BUILDINGS*, have done their job as rhetorical devices converting many academics to CMT. Over the past decade, the stakes have been raised, as we have seen. Next to the issue of the psychological validity of conceptual metaphors, which we will come back to in a moment, reliable metaphor identification in discourse has become the other big issue placed on the agenda for CMT. It is more than ‘just’ a methodological issue, and goes to the heart of the matter of CMT: when does something count as a metaphor in language if metaphor is defined as a matter of thought, understanding one thing in terms of something else?

As hinted above, when metaphor is to be identified in discourse as opposed to being illustrated in cognitive-linguistic theoretical work, two options are generally distinguished, a deductive and an inductive approach (Steen, 2007). An example of the deductive approach, characteristic of the first stage of discourse-analytical work on CMT, is Koller (2004), who establishes a number of metaphors conceptualizing business and derives a closed set of conventionalized linguistic expressions of those conceptual metaphors for corpus analysis. Three sets of lexical fields were defined as expressions of just as many source domains for two topics of discourse: *WAR*, *SPORTS*, and *GAMES* for marketing and sales, and *FIGHTING*, *MATING*, and *FEEDING* for mergers and acquisitions. *ROMANCE* was selected as an alternative source domain for the first topic. For each of these 7 fields, 35 lemmas were then selected, including the main grammatical categories of noun, verb and adjective/adverb. For instance, for the lexical field of ‘games’, use was made of words like *ace*, *bet/to bet*, and *play*, *player/to play*, *to outplay*, *playful*. The advantage of such an approach is the acknowledgement of a need for a clear conceptual-cum-linguistic model of the metaphorical structures, which can then be used to examine related distributions and functions across a large set of discourse data. The disadvantage is that the deductively formulated model may not be entirely adequate or miss too many interesting, subtle manifestations of the presumed underlying

conceptual metaphor and will never become aware of this failure. However, as a serious empirical test of theoretical proposals elsewhere in the cognitive-linguistic literature, this approach is eminently warranted, at the same pointing out the need and function of responsible prior theoretical proposals. Application of such a model in empirical research may lead to adjustments of the original model for the conceptual model under investigation that can then be researched anew.

The inductive approach starts at the other end, the language data, and from there works its way up, to either linguistic metaphors or, going one step further, their relation to underlying conceptual metaphors. The past decade has seen the development of the first reliable variant of a metaphor identification procedure, called MIP (Pragglejaz Group, 2007). The method is not dependent on the assumption of conceptual metaphors and does not aim at identifying them. It offers an operational definition of linguistic metaphor that is intended to be completely compatible, however, with the cognitive-linguistic definition of metaphor as indirect meaning based on cross-domain mapping. MIP has been statistically tested for reliability and the output of the procedure can be easily connected to conceptual metaphor research.

MIP comprises the following steps:

1. Read the entire text to understand the general context.
2. Decide about lexical units.
- 3a. Establish the contextual meaning of the examined lexical unit, that is its application in the situation evoked by the text, taking into account the words surrounding the examined lexical unit.
- 3b. Determine the basic meaning of the word. The basic meaning is usually the most concrete, body oriented, specific (as opposed to vague) and historically older meaning.
- 3c. Decide whether the basic meaning of the word is sufficiently distinct from the contextual meaning.
- 3d. Decide whether the contextual meaning of the word can be related to the more basic meaning by some form of similarity.
4. If the answers to 3c and 3d are positive, the lexical unit should be marked as metaphorical.

Consider the following example, from BNC news text A1H: 'He fearlessly attacked convention, which caused problems when he pitched into established reputations.'

*Step 3a Contextual meaning*

In this context, the verb *attacked* indicates the expression of strong criticism towards an idea.

*Step 3b Basic meaning*

The basic meaning of the verb *to attack* is to use violence to harm a person or to use weapons to try to defeat an enemy. This involves concrete physical interaction, whereas argument does not.

*Step 3c Contextual meaning vs. basic meaning*

The two senses are distinct: the contextual sense of *attack* in this sentence differs from the basic sense of the verb.

*Step 3d Contextual meaning vs. basic meaning*

The two senses are related by similarity: verbal attacking is like physical attacking.

*Step 4 Metaphorically used or not?*

Yes, the contextual sense of 'to attack' is distinct from the basic sense of this verb but they are related by similarity.

MIP has since been refined and developed by Steen et al. (2010), leading to a 16-page manual that can cover all manifestations of metaphor in discourse, including simile, explicit comparison, analogy and so on. The extended procedure is called MIPVU and has higher reliability coefficients than MIP. It has been applied to a substantial set of excerpts from the British National Corpus, yielding the VU Amsterdam Metaphor Corpus, comprising 187,000 words annotated for all words related to metaphor Steen et al. (2010). This is a unique resource that may be of help for future studies of words presumably involved in particular conceptual metaphors. The crucial issue here is how specific linguistic expressions can be classified as instantiations of underlying conceptual metaphors. Or, more broadly, how linguistic metaphors recruit which conceptual metaphors in the structures and functions of discourse (Steen, 2007).

Metaphor identification is crucial for assessing the quality of metaphor research: if cognitive linguists cannot agree on what counts as an instance of a particular phenomenon by independent observations, then their findings are not much less than personal constructions and interpretations. Yet reliable metaphor identification is not 'just' an important methodological issue, but also leads us to the heart of the matter of CMT, its validity. Some psychologists have denied that many of the linguistic illustrations of conceptual metaphor, now also included in the cases identified by MIP and MIPVU, are metaphorical. They argue that they are simply lexically polysemous and may presumably be handled in processing by lexical disambiguation, therefore not involving any online cross-domain mapping. When words like *attack* in the above example are accessed by the reader, both their metaphorical ('criticize') and non-metaphorical ('fight') senses are activated and the metaphorical sense may then simply be retained and used in the context of the rest of the sentence (cf. Giora, 2008). It follows that there is no need for a mapping across two conceptual domains

to establish the metaphorical meaning of *attack*: it is already available in the mental lexicon of the language user. This is presumably even more so for those words where the metaphorical sense is more salient than the non-metaphorical one (Giora, 2008). Even though temporary activation of the non-metaphorical source domain sense ('fight') of the word *attack* may be observable in brain research, this does not mean that it is needed or used for accessing the domain of fighting in order to construct the required metaphorical target domain meaning ('criticize') in context. As a result, some psychologists like Sam Glucksberg argue, words like *attack* do not function metaphorically; in addition, he concludes, they should not be included in the study of metaphor.

The psychological criterion for metaphor is based in what happens during online processing. This implies that the above criterion for metaphor identification in MIP and MIPVU of indirectness and comparison, inspired by Cognitive Linguistics, is a conceptual semantic one – it applies to language structure and, as we have just seen, not necessarily to processing. This is indeed a specification that has been deliberately adopted by many discourse analysts studying CMT today, as I have noted. To cognitive linguists, however, both the criterion of processing and the criterion of language structure are important – that is why they are 'cognitive' 'linguists'. The cognitive-psychological and conceptual semantic criteria therefore need to be brought together in one non-contradictory model if Cognitive Linguistics wishes to be taken seriously by researchers of cognitive processes, psychologists. For if much metaphor is not processed metaphorically then Cognitive Linguistics faces a paradox of metaphor (Steen, 2008).

This issue in fact goes back to a discussion in the late nineties, when Gibbs (1999) made a distinction between four different interpretations of CMT. His interpretations essentially boiled down to the question (a) whether cross-domain mapping was necessary for online metaphor processing, (b) whether it was an optional phenomenon perhaps following online processing, or (c) whether it had nothing to do with online processing in many cases but was a matter of the ideal native speaker having to deal with polysemous lexical structures in the language, or (d) whether it was a matter of the historical emergence of metaphor via cross-domain mappings in the past, which then lost their use as an active cross-domain mapping because of the resulting conventionalization of metaphor via for instance polysemy. In my opinion, too little attention has been given to these insightful alternative interpretations of CMT and the role they can play in driving the programme of cognitive linguistic research on metaphor (Steen, 2007).

The fourth, historical view is in fact the one that has since been developed and supported by empirical evidence in the so-called Career of Metaphor theory proposed by Bowdle and Gentner (2005). It offers a psycholinguistic (and eventually historical) basis for a more encompassing discourse-analytical view of the career of metaphor, which may be fruitfully connected to the work on metaphor

in discourse as well as discourse metaphor discussed above. In particular, the course of conventionalization of metaphor in language and thought is not just a matter of language change but also of the way this happens in concretely developing series of discourse events. As we have seen, these involve language use in specific genres with varying goals, settings, domains, participants, contents, forms, types, structures, languages, registers, styles, and rhetorics, tying the cognitive-linguistic study of metaphor in to a wide range of sciences in the humanities, cognitive and social sciences.

This theoretical integration can also resolve the paradox of metaphor (Steen, 2008). Although many metaphors in language may not, as a rule, be processed metaphorically in thought, they should still be included in what counts as metaphor because of the historical argument about their emergence as well as the contemporary argument about their capacity for being used deliberately *as* a metaphor. Both of these aspects are needed to explain how metaphor can be deliberately revitalized as metaphor in cognitive processing, a phenomenon which is probably central to the processes of discourse metaphor. In this way, cognitive psychological and conceptual semantic criteria of metaphor can be held together in one extended model of CMT. This model needs to incorporate the communicative dimension with its contrast between deliberate and non-deliberate metaphor use while allowing for theoretical and methodological distinctions between semiotic, psychological, social and historical approaches to the analysis of metaphor in real use, or discourse (Steen, 2011b).

## 5 Concluding Comment

The previous section has brought us to the cutting edge of contemporary metaphor theory and research. The cognitive-linguistic revolution in metaphor studies has produced a wealth of research that has changed our outlook on what metaphor is and what it does. It has revealed new patterns in language and thought and raised new questions about their relationship. It has also influenced work in other disciplines which are now feeding back into the cognitive-linguistic enterprise, considerably complicating the original picture presented in Lakoff and Johnson (1980). The most important issues appear to be the following:

1. A distinction has emerged between primary, complex and discourse metaphor, which requires further theoretical modelling, both regarding the structure and function of each of these phenomena separately as well as regarding their interaction. For primary metaphor, the basic question remains whether it is metaphorical instead of metonymic; for complex metaphor, the basic question remains how it is motivated, both by

primary metaphors (or metonymies) as well as by cultural frames; and for discourse metaphor, the question arises how it interacts with considerations of discourse events modelled via genre as well as their position in encompassing cultural and historical contexts. These questions have to be answered to clarify the overall theoretical definition of metaphor and how it can be related to its diverse manifestations in reality.

2. For all of these phenomena, the relation between structural-functional semiotic analysis in Cognitive Linguistics and research on cognitive processes and their products in the behavioural sciences remains a crucial issue. What is a metaphor in the structures of language and thought as semiotic systems does not have to be realized as a cross-domain mapping in on-going cognition in individual people's minds. It does not have to be shared as a mapping involving two conceptual domains between interlocutors or language users either. These are empirical issues that require precise behavioural research that goes beyond the semiotic structures and functions of metaphor that can be observed. It is needed to answer the question when metaphor is really a matter of thought.
3. Given the above considerations about primary, complex, and discourse metaphor, we can assume that complex metaphor remains a central notion in cognitive-linguistic metaphor theory. The crucial new issue here is that it does not only display a linguistic and a conceptual dimension but also a communicative one, which raises new and fundamental questions about metaphor in language use and deliberateness, intentions, attention and consciousness. These questions have to be addressed if the cognitive-linguistic approach to metaphor wants to live up to its status as a truly cognitive endeavour.
4. Attention has also been drawn to issues of reliability and validity in order to enable closer alignment of cognitive-linguistic analyses of metaphor and its use with the standards in the cognitive and social sciences. Cognitive linguists do not have to do experiments to be taken seriously outside the humanities, but they do have to make their own theoretical and empirical work more open to interdisciplinary criticism. Of particular importance here is the demarcation of specific conceptual metaphors and the way they relate to their expression in language: given that the primary data of linguists consist of utterances in context, the central question here is how specific linguistic expressions can be related to which conceptual metaphors in which ways. Methods and techniques for metaphor identification and analysis as linguistic, conceptual and communicative phenomena are dearly needed.

New opportunities for researching metaphor have opened up in cognitive neuroscience, in corpus linguistics, and in computational linguistics, but these may

only be fruitfully exploited if they take on board the above central issues about the way metaphor relates to cognition. These issues are the result of the cognitive-linguistic revolution in metaphor studies triggered by Lakoff and Johnson (1980), but they also show how much progress has been made since.

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Jeannette Littlemore  
and  
John R. Taylor

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