Cognitive Linguistics
Cognitive Linguistics Research
32

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To my mother for her infinite love, sacrifice, dedication, and generosity all the days of my life. To my wife and children for their constant love and support

Francisco J. Ruiz de Mendoza

To Víctor for his patience, cheerful encouragement, and love

M. Sandra Peña
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Preface

This volume focuses on the internal variety of Cognitive Linguistics research. Part of this variety arises from the ability of Cognitive Linguistics to interact with other linguistic disciplines and subdisciplines. In this respect, the selection of contributions that this book presents is intended to offer an updated overview of the major attempts to produce such interdisciplinary connections. The editors wish to express their gratitude to all the contributors for taking part in this project in spite of their tight schedules and of their many other editorial commitments.

Our gratitude also goes to the CLR series editors for their fruitful advice and support throughout the process. We are particularly grateful to René Dirven for his personal involvement and enthusiasm with this project. His wisdom and experience have been a great asset to us.

We finally want to thank the Mouton de Gruyter staff in the persons of Anke Beck and Birgit Sievert for their interest in the project and for all their efficient help.
Introduction: as strong as its foundations, as wide as its scope

Francisco J. Ruiz de Mendoza and M. Sandra Peña

“Articulating the dynamic nature of conceptual and grammatical structure leads us inexorably to the dynamics of discourse and social interaction. While these too have been part of CG from the very outset, they have certainly not received the emphasis they deserve.” (Langacker 2000: 376)

1. Preliminary remarks

The present volume gathers together plenary and key lectures delivered at the 8th International Cognitive Linguistics Conference, held at the University of La Rioja in July 2003, plus other invited contributions dealing with interdisciplinary issues and the internal dynamics of recent developments in Cognitive Linguistics (CL).

In our view, the book testifies to the great tolerance of Cognitive Linguists towards internal variety and towards external interaction with major linguistic disciplines and subdisciplines. Internally, it opens up the broad variety of CL strands and the cognitive unity between convergent linguistic disciplines. Externally, it provides a wide overview of the connections between cognition and social, psychological, pragmatic, and discourse-oriented dimensions of language, which will make this book attractive to scholars from different persuasions. The book is thus expected to raise productive debate inside and outside the CL community. Furthermore, it examines interdisciplinary connections from the point of view of the internal dynamics of CL research itself. CL is rapidly developing into different compatible frameworks with extensions into usage-based domains of linguistic description including discourse, pragmatics, and sociolinguistics, which have only recently been taken into account more intensively in this orientation.
2. Unity in divergence

The Cognitive Linguistics (CL) agenda has always had a clear interdisciplinary concern. However, until very recently cognitive linguists have mostly addressed interdisciplinary issues in terms of the connections between CL and other branches of cognitive science, especially artificial intelligence and the brain sciences, as evidenced by recent work in Embodied Construction Grammar (Bergen and Chang 2002; Chang, Narayanan and Petruck 2002) and the Neural Theory of Language (Feldman and Narayanan 2004; Lakoff and Johnson 1999).

Interdisciplinary efforts internal to the study of language and its textual manifestations, although significant in qualitative terms (e.g. Gavins and Steen 2003; Nuyts 1992, 2001; Panther and Thornburg 2003; Steen 1994), have been rather sparse. In this context, the book aims to make relevant connections between CL and various other approaches to language, more specifically sociolinguistics, psycholinguistics, pragmatics, and discourse studies. The contributions to the book explore areas of convergence between these approaches and the cognitive paradigm, and place emphasis on the nature of possible developments in future work if such connections are taken into account. In a complementary fashion, the book examines to what extent such interdisciplinary issues have a bearing upon the internal dynamics of CL thus giving shape to the major strands that have so far developed. Other developments within Cognitive Linguistics, like cognitive phonology (e.g. Mompeán 2004), cognitive morphology (e.g. Bybee 2001; Geeraerts 2002), or diachronic linguistics and grammaticalization studies (e.g. Blank and Koch 1999; Geeraerts 1997) are not covered in the book since they do not involve any major interdisciplinary effort. Applied Cognitive Linguistics (Pütz, Niemeier, and Dirven 2001), in its turn, although interdisciplinary, falls outside the essentially theoretical scope of the book. Finally, other interdisciplinary enterprises, such as cross-cultural semantics (Wierzbicka and Goddard 2004) and cognitive therapy have not had yet a sufficiently strong impact on the CL framework to generate internal developments.

3. The structure of this volume

The book is structured in four sections. The first section takes up the question of the internal developments within CL. Sections 2 to 4 deal with the connections with other orientations and areas of linguistic enquiry. The
Introduction

The efforts of the contributors to the two sets of sections are highly complementary in their common goal of developing the full explanatory potential of the CL paradigm.

Each of the four sections of the book covers several routes of research. The first section sets the stage for the rest of the book in three significant ways: first, it gives an overview of the main orientations within CL; second, it explores the links between CL and its historical matrix, Functionalism; third, it looks for common ground among some of the major approaches to the concept of grammar within CL itself. Thus, this section allows us to look at CL as part of the more general functional enterprise while highlighting commonalities and differences among its major developments.

Section 2 explores how CL and sociolinguistics may benefit from each other. Two major target areas aimed for in the contributions to this section are these: (i) to bridge the gap between the study of linguistic diversity and the idiosyncrasies of individual conceptual systems; (ii) to understand the way people conceptualize social reality in terms of cultural models concerning language varieties, linguistic groups, and language behavior. This section thus explores the social perspective of issues that will be taken up in the next two sections with different degrees of emphasis on various aspects of their psychological and interactional nature.

The contributions to section 3 place emphasis on the embodied nature of language and thought, studying language use and embodiment from two complementary perspectives: (i) psychological experiments on how language is understood as embodied simulation; (ii) a linguistic study of the cognitive operations involved in the construction of mental spaces and the impact of such operations in conceptual and linguistic construal and communication. While section 2 looks at language use from the point of view of the social dimension of language, section 3 examines how different aspects of language use find their counterparts in embodied thought.

Section 4 follows naturally from section 3 in its exploration of communicative and usage-based issues. The section attributes an especially prominent role to the connections between cognitive model theory (with special emphasis on metaphor and metonymy) and the discourse-oriented approach to language. In this interdisciplinary perspective, metaphor and metonymy are seen as capable of creating discourse coherence through their particularly strong capacity to generate inferences. In a complementary way, this section also deals with discourse units in terms of their conceptual and communicative properties.
As is evident from this brief overview, all sections cover two general topics with wide-ranging implications which are crucial to future developments of research in CL and in linguistics in general: (i) the relationship between the embodied nature of language, cultural models, and social interaction; and (ii) the role of metaphor and metonymy in inferential activity and as generators of discourse links. Then there are a number of more specific topics, which are addressed from different perspectives in many of the contributions: the nature of constructions and the scope of constructional meaning; language variation and cultural models; discourse acts; meaning construction; the relationship between communication and cognition; the argumentative role of metaphor in discourse; the role of mental spaces in linguistic processing; and the role of empirical work in CL research. This feature of the book endows it with internal unity and consistency while preserving the identity of each of the sections and the contributions therein.

4. The chapters in this volume

In the first contribution Dirven surveys the different intradisciplinary and interdisciplinary ramifications of Cognitive Linguistics. Five major strands are grouped into two main orientations according to their roots. On the one hand, the gestalt-psychology-based strand (Talmy, Langacker, Goldberg) and the phenomenology-based strand (Lakoff, Johnson) have been deeply influenced by recent cognitive psychological and philosophical currents. On the other hand, the Cognitive Discourse study, Cognitive Sociolinguistics, and Psycholinguistics are deemed to be rooted in the interaction between CL insights and the linguistically oriented subdisciplines of Pragmatics, Discourse Analysis, Sociolinguistics, and Psycholinguistics. This overview provides the reader with some of the main theoretical insights that have developed from these interdisciplinary efforts. The author discusses the most important contributions made in recent years as well as the criticism to which some of these ramifications, especially Lakoff’s Cognitive Semantics, have been subjected. Other developments within CL which are not essentially interdisciplinary (e.g. Cognitive Phonology, Cognitive Morphology, and Historical Semantics) or still others which have not generated a major ramification (e.g. Cognitive Therapy), are not addressed in this chapter. Thus, this survey is an appropriate opening chapter for the rest of the book.

Nuyts’ chapter is an attempt to cast light on the complex status of the relationships between Cognitive and Functional Linguistics. He notes that
the complexity of the comparison is partly due to the fact that both orientations are internally heterogeneous. This calls for a selection of major tendencies of divergence rather than a superficial survey of convergences and divergences. The chapter first focuses on the question of shared concerns between Cognitive and Functional Linguistics (e.g. dealing with language use), which makes the two approaches complementary, while the differences arise when applying the basic orientation in specific analyses of language. Nuyts suggests that if functionalists should take the cognitive import of their analysis seriously, they would be able to add important new insights into the nature of human conceptualization. Nuyts illustrates this point by exploring ‘tense-aspect-modality’ marking. Thus, he argues that categories qualifying states of affairs (e.g. evidential, epistemic, deontic) are not only linguistic but also conceptual and that the level at which the qualification is conceived is prior to the level at which lexical structure is introduced, which points to a non-verbal conceptual level of representation for them. He then contends that a layering system which assigns each qualification a position in terms of their potential scope (e.g. evidential>epistemic>deontic) is also conceptual, since conceptual qualifications can have a fairly variable effect in different expression types both within a language and across languages. Finally, the discussion brings up another issue that threatens to divide CL and FL, viz. the matter of the ‘construction model’ versus the ‘process model’ of a grammar. In the former, the link between form and meaning is represented in one unit; in the latter, the same basic relationship is implemented through mapping rules or procedures. In this respect, Nuyts argues that the FL perspective should certainly be taken seriously in CL, especially if linguists work under the assumption that in actual communicative situations there is a time lag between the application of conceptual meaning and linguistic form. In any event, this issue brings with it important metatheoretical differences between the two orientations – concerning the division of labor between neuroscientists and linguists – that will have to be addressed before an acceptable degree of convergence takes place.

Langacker’s contribution is a comparison of the three main formulations of Construction Grammar – i.e. those by Goldberg (1995), Croft (2001), and the author himself (Langacker 1987, 1990, 1991, 2000). In view of potential terminological confusion, Langacker uses the phrase “Construction Grammar” to refer to any non-derivational framework that describes constructions (understood as form-meaning pairings) rather than rules, where lexicon and grammar form a continuum, inheritance relationships are specified, composition is effected by unification, and well-formedness
is seen in terms of simultaneous constraint satisfaction, among other characteristics. Goldberg’s Construction Grammar, Croft’s Radical Construction Grammar, and Langacker’s Cognitive Grammar are constructional in this sense. The discussion is then focused on three crucial issues: the question of the putative autonomy of syntax, of which there is a strong and a weak version (the latter usually subscribed to in cognitive and functional orientations), the nature and theoretical status of some basic grammatical constructs (subject, object, noun, verb), and the relationship between lexicon and grammar. In the Cognitive Grammar approach, in contrast to what is the case in the other two approaches, grammar is symbolic in the sense that it pairs semantic structures just with phonological structures – the “form” in form-meaning pairings does not include category labels or reference to grammatical relations. Thus grammar does not symbolize semantic structure but rather incorporates it, residing in schematized patterns of symbolization. In this way Cognitive Grammar avoids a vestige of the strong autonomy thesis, namely the postulation of unanalyzed grammatical primitives. It defines such universal constructs as noun, verb, subject, and object in the form of semantic characterizations at the prototype and schema levels. Langacker also points out that Cognitive Grammar, just like Construction Grammar and Radical Construction Grammar, posits hierarchies of constructions (i.e. networks of symbolic assemblies) where there is a continuum between lexicon and grammar. However, in Construction Grammar a construction is only recognized if it is unpredictable from its component parts or from another construction, while in Cognitive Grammar an assembly is considered part of the language to the extent that it is psychologically entrenched and conventional in a given speech community. All in all, Langacker’s chapter serves to clarify these and other related issues central to the CL enterprise while making a solid case for the CL understanding of grammar.

The sociolinguistic section opens with Geeraerts’ chapter concentrating on the growing interest within the CL community in empirical models of linguistic analysis and on a heightened awareness of the social nature of language. It is argued that ‘Cognitive Sociolinguistics’ is a natural development within the general CL framework which arises both from the growing tendency to use empirical research methodologies and the emergent interest in the social nature of language. In Geeraerts’ view, if CL is to be regarded as an eminently usage-based approach, then it needs to investigate actual language use as attested in corpora of non-elicited language behavior, so as to come to terms with the reality of social variation in language. Similarly, if CL encompasses a social conception of language, it
should not restrict itself to an intuitive methodology, but it should adopt
the observational approach that comes naturally with the use of large textual
corpora. Geeraerts addresses these issues from an epistemological stand-
point and comes to the conclusion that the alliance between quantitative,
variational corpus analysis and CL is not only desirable but also inevitable
as a way of accounting for the dialectic interaction between individual
knowledge and collective norms. The argumentation proceeds in two steps.
The first step involves the claim that an empirical, usage-based approach in
Cognitive Linguistics cannot evade the study of language variation. The
second step (which takes the form of a fundamental discussion with the
epistemological views of Esa Itkonen) reverses the perspective, and argues
that if one accepts the essentially social nature of language, an empirical
methodology is inevitable.

In the same vein as Geeraerts, Bernárdez advocates the necessity of in-
tegrating social factors into a sound analysis of the data in CL. Bernárdez
addresses this issue from two complementary perspectives: language varia-
tion and linguistic typology. He first argues that typological studies can
have and in fact should have a cognitive orientation that would allow us to
understand better the universals and the varieties of human cognition.
Then, he discusses the need for a neutral standard for comparison or tertium
comparationis other than English since English, like any other lan-
guage, is culturally loaded and it is a typologically rare language whose
constructions are extremely infrequent cross-linguistically. Granularity or
the detail of analysis is a related issue. As Bernárdez notes, most linguists
will perform fine-grained analyses of English to make their points, while
neglecting to do so with other less-known languages. This way of acting
leads to incorrectly ranking some phenomena as on a par in different lan-
guages. Here, Bernárdez argues for a neutral tertium comparationis where
granularity is just a matter of the detailed investigation of a given construc-
tion in particular languages. Given these observations, typological research
is to focus on usage-based grammar, which is also the natural ground for
variation studies. This usage-based focus is compatible with recent work in
CL that points to the collective nature of human cognition. In it, linguistic
activity is seen as essentially collective, and language as a direct conse-
quence of its social aspect. Furthermore, language use is thought to deter-
mine linguistic form through entrenchment processes in the individual’s
mind. In this perspective, we do not have to explain why language variation
exists, but rather why something does not show interlinguistic variation, if
this happens to be the case. In much the same way, typological studies need
to compare not just simple linguistic forms or pairings of form and mean-
ing, but the whole system of form-meaning conditions of use. This proposal is in full consonance with state-of-the art knowledge about coordinated animal behavior and our own neural makeup.

In the section on psycholinguistics and cognitive processing, Gibbs argues in favor of the embodiment of cognition, and consequently of meaning, since language is regarded in CL as an essential part of cognition. The chapter emphasizes the importance of whole-body action in the genesis and development of perception, cognition, and language use, and suggests that human thought and language, most generally, must be studied and understood in terms of the interaction between the mind, the body, and the world. In his proposal, Gibbs certainly broadens previous work in CL where it is taken for granted that conceptual and linguistic representations (i.e. image-schemas) are derived from bodily experience to become a stable part of our conceptual systems. In the author’s view, such representations are created on an ad hoc basis as part of people’s embodied simulations of meaning, as they are ever again activated from long-term memory. Gibbs provides support for this claim by describing three psycholinguistic experiments that investigate the way in which understanding metaphorical language is related to real and imaginary bodily action. On a final note, Gibbs sees the work described in this chapter as additional evidence in support of the “cognitive commitment” within CL, according to which explanations of linguistic structure and behavior have to be in agreement with contemporary empirical findings about human cognition from cognitive science.

With an eye on cognitive processing, Ruiz de Mendoza and Peña examine Turner and Fauconnier’s well-known blending theory. Blending (or conceptual integration) is a widespread cognitive mechanism which applies over many areas of conceptualization, including metaphor and metonymy. According to Turner and Fauconnier’s theory, the understanding of some metaphorical expressions involves the activation of at least two input spaces, a generic space, and a blend. Turner and Fauconnier argue that in this process emergent structure may be created which is not present in any of the input spaces. They also claim that emergent structure is the result of a number of irregularities in the mapping process, such as the existence of asymmetries and non-correspondences between source and target. In contrast to this hypothesis, Ruiz de Mendoza and Peña present what they call the combined input hypothesis. In their view, there are no irregularities in the mapping process. Instead, conceptual integration is the result of the principled combination of a number of partial source and target inputs, which have all the structure necessary not only for cross-domain mappings to take place but also for other cognitive operations such as domain expan-
sion and domain reduction (related to metonymy), strengthening and mitigation (related to the loose use of scalar concepts and to hyperbole), saturation, and counterfactual reasoning, among others. In this account, there is a projection space that is constructed on the basis of these operations.

The discourse section opens with Steen’s chapter on discourse acts. Steen proposes, develops, and discusses the notion of basic discourse act as consisting of an illocutionary act, a proposition, a clause, and an intonation unit. Basic discourse acts may be thought of as utterances in the full behavioral sense of the term, that is, as verbal acts requiring production and comprehension in speech or writing. However, since the notion of utterance is too closely associated either with pragmatics as opposed to discourse analysis, or, within discourse analysis, with conversation analysis as opposed to text analysis, it is preferable to coin a more neutral term. Basic discourse acts are the basic units of discourse conceptualized from a discourse-psychological point of view. In language production and comprehension, people engage in a multi-dimensional activity. Concepts require words and constructions for their formulation, words in constructions require sounds or written signs for their material realization, and the combination of concepts, words, and sounds or written signs functions as an important instrument for performing a communicative act directed at some addressee. Basic units of discourse are an important tool for language users when they have to break up continuous text and talk into equivalent segments for cognitive processing. It is the major function of basic discourse acts to make it easier for addressees to reconstruct during the on-going event of listening, reading, or interacting what the sender is saying, implicating and doing. This requires that basic discourse acts be studied in terms of their internal structure as well as their links to each other in encompassing discourse structures.

Barcelona’s contribution is devoted to the detailed discussion of a number of case studies on the way metonymy functions in authentic texts. One of the findings of these case studies is the realization that two or more metonymies regularly occur at the same or different analytical levels in the same utterance, and that they tend to chain to each other. According to the author, metonymy can occur at all grammatical analytical levels. It is a major factor in the motivation of constructional form (especially non-prototypical constructional form) and constructional meaning.

On the other hand, the regular co-occurrence and chaining of metonymy in utterances and texts plays a crucial role in pragmatic and discourse inferencing, which makes metonymy, particularly metonymic chaining, a key inferential mechanism in language use. The contribution provides evidence
of the pervasiveness and frequency of metonymy in discourse. The author argues that discourse-pragmatic inferencing is often activated, or “guided” (to use the author’s own term), by chains of “active” (as opposed to “dormant”) metonymies, which seem to constitute the “backbone” of inferential chains. Thus Barcelona provides ample evidence for his claim that the inferential function of metonymy is its primary function, its motivational and referential functions being derived from this primary function.

A further finding is that metonymic chains respond to a set of general patterns identified in terms of the criteria of function, directness and crossing of analytical level. Metonymic chains are normally mixed chains in terms of these criteria.

In his contribution, Panther explores some basic semantic and pragmatic functions of conceptual metonymy. He contends that metonymies provide natural inference schemas constantly used by interlocutors in the construction and interpretation of meaning. Metonymy is seen as a contingent relation between a source meaning and a target meaning, i.e. as a reasoning pattern that is in principle defeasible. Nevertheless, the degree of entrenchment of the metonymic link and contextual features may constitute an effective barrier to cancellation. The property of defeasibility metonymy shares with conversational implicature and explicature. Panther views metonymy as a device for meaning elaboration where the source of a metonymic relation is expanded into a more complex conceptual structure that “contains” the content of the source. In his view, conceptual metonymies occupy an intermediate level of conceptual relations between, on the one hand, very abstract inference-guiding principles and heuristics à la Sperber and Wilson and Levinson and, on the other, specific ad hoc inferences employed in the derivation of particularized conversational implicatures. In prototypical metonymic relations the target concept is conceptually prominent, which makes target meanings not only accessible but also available for further elaboration in discourse. Metonymies are ubiquitous on the referential, predicational and illocutionary levels of speech acts. They also perform important functions in resolving semantic conflicts between lexical meaning and constructional meaning and in shaping certain grammatical properties of anaphoric proforms. Finally, the author demonstrates that metonymies are, to a certain extent, organized in taxonomic systems, a property that is illustrated with the various submetonymies of the EFFECT FOR CAUSE metonymy.

Finally, Nerlich’s chapter is an illustration of the argumentative use made of the metaphors and images used in the scientific and industrial debate about agriculture and the environment. These metaphors have received
less attention than the images and metaphors used in debates about the risks and benefits associated with cloning, genetically manipulated or modified (GM) food and genomics. In this context, Nerlich explores how the 1960s metaphor “silent spring”, drawn from the environmental bestseller *Silent Spring* by Rachel Carson, was exploited in British environmental, ecological and agricultural discourses between the years 1998 and 2002. The first of these two dates signals the height of the debate over cloning and GM food; the other date coincides with the height of the debate over the human genome and over sustainable agriculture. The chapter is divided into two parts. In the first part, Nerlich discusses the significance of the phrase ‘silent spring’, as a counterfactual blend and auditory metaphor, in the context of literary tradition, political events, and scientific endeavor. The metaphor, which cancels out our conception of spring as full of life and hope, has been used repeatedly in debates about the (potentially negative) impact of science and technological development on the environment. The second part of the chapter analyses the rhetorical and argumentative uses made of the phrase ‘silent spring’ in British broadsheets and scientific journals. It is focused on debates about pesticides and their threats to birds and humans, GM food, and foot and mouth disease. Different kinds of discourse intersect in each debate. The first one brings together environmental and agricultural discourses by exploiting ‘silent spring’ images to speak of the negative consequences of the intensification of agriculture for animals and the environment. The second debate makes links between genetic, agricultural and environmental discourses, and the third debate between agricultural and environmental discourses. Nerlich’s contribution closes with a summary of the textual, inter-textual, co-textual, and contextual potential of the phrase ‘silent spring’, which has become adapted to various social, scientific and political situations. This case study of the ‘life and work’ of one metaphor is also a plea for a new approach to metaphor, the ecological study of metaphor, which focuses on how metaphors interact with their environments of use and with their users, and on how metaphors are adapted and changed through this interaction.

5. Concluding remarks

All in all, this volume gives proof of both the vitality and wide scope of Cognitive Linguistics. In spite of its many ramifications, CL keeps its ears to the ground of language use and realizes that, by ever more consistently doing so, it can continue to tolerate the rich ramifications in its own dy-
namic evolution and its co-evolution with neighboring disciplines. This is the essence of unity in variety.

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Section 1
Variety in unity: Cognitive-Functional
Linguistics and different routes within CL
Major strands in Cognitive Linguistics

René Dirven

1. Cognitive Linguistics (CL): the new paradigm in linguistics

In contrast to most previous linguistic paradigms, which saw meaning either as less relevant or else as an autonomous linguistic module, CL approaches language as an integrated part of human cognition which operates in interaction with and on the basis of the same principles as other cognitive faculties. CL is therefore defined as a linguistic theory which analyzes language in its relation to other cognitive domains and faculties such as bodily and mental experiences, image-schemas, perception, attention, memory, viewing frames, categorization, abstract thought, emotion, reasoning, inferring, etc. (cf. Ungerer and Schmid 1996, Janssen and Redeker, 1999). In her discussion of Rosch’s (1999) latest views, Violi (2004) even says: “Perception, action, language cannot anymore be considered as totally autonomous and independent modules, they must become functional specifications in a common unitary configuration”. They are all one in cognition. But since cognition itself is composed of diverse ‘specifications’ or faculties, it need not astonish that the cognitively oriented paradigm in linguistics should consist of many different and powerful strands, rooted on the one hand in vigorous currents in cognitive psychology and philosophy, more particularly in gestalt psychology and in phenomenology, and on the other hand in existing linguistic sub-disciplines such as pragmatics, discourse study, sociolinguistics, and psycholinguistics.

Of the various internal ramifications within CL, the following major strands or orientations will be discussed:

1) A gestalt-psychology-based strand, initiated and explored by Talmy, and worked out in greater detail by Langacker, and then by his followers, Kemmer, Achard, Taylor, Verhagen, etc. A different specification of the gestalt principle is realized in construction grammar developed by Goldberg, Michaelis, Croft, etc.

2) A phenomenology-based strand, inspired by Merleau-Ponty, and explored by George Lakoff and Mark Johnson in the direction of ‘embodied realism’, and, from a different vantage point, also approached by Geeraerts.
Here belong prototype theory, lexical network theory, conceptual metaphor theory, and conceptual metonymy theory with inroads into cognitive pragmatics with Barcelona, Radden, Ruiz de Mendoza, Panther, Thornburg, etc.

3) A cognitive discourse strand, developed in different directions: in the direction of conceptual integration by scholars of mental-space and blending theory like Fauconnier, Turner, Grady, Oakley, Coulson; in the direction of cognitive poetics by Freeman, Semino, Herman, Steen, etc.; and in the direction of coherence and mental representation research by a group around Noordman.

4) A cognitive sociolinguistics strand, scouted out for variation in lexical semantics by Geeraerts, Grondelaers et al., for ideology research by Lakoff and his students, by Geeraerts, Kristiansen, and many others (cf. Grundy and Jiang 2001), and for cultural models by Morgan, Frank, and other contributors to Dirven, Frank and Pütz (2003), which can be linked to earlier work on cultural models as in e.g. Holland and Quinn (1987).

5) A psycholinguistic strand, represented by Gibbs et al. (1994) for figurative-language processing, and by Tomasello, Rice, Sandra, etc. for language acquisition (cf. Tomasello, 1998).

Each of these strands will be discussed relative to its weight and adherence. We regret that the cognitive work in phonology, morphology, cross-cultural semantics, typology, historical semantics and grammaticalization, as well as Applied Cognitive Linguistics aiming at applying the new insights of Cognitive Linguistics to language pedagogy (e.g. Nancy 1999) and translation could – for reasons of space and salience – not be considered here.

2. Gestalt-psychology based CL: Cognitive Grammar

It is the great merit of Talmy (1975) to first and systematically have approached linguistics with insights from cognitive psychology, especially from gestalt psychology. He applied notions such as ways of viewing a given scene, the figure-ground division of each perceptual field, the “windowing” of attention, and several others to language phenomena. Both lexical categories and the structure of grammar are intimately related to cognition. Whereas lexical categories derive from specific entrenched aspects of experience, grammatical categories provide the conceptual framework for more general, schematic categories.

Langacker’s unique contribution to CL is to have worked out these insights from gestalt psychology in great detail and turned them into a full-fledged grammar model. In structuring his thoughts by means of grammar,
a speaker makes use of principles similar to those of gestalt perception. Wanting to describe a conceived situation, (s)he makes choices as to the scope of elements from a situation and to the perspective adopted on the situation. The speaker assembles the things and relations selected into higher relationships and ultimately into sentences and texts. Such composite structures may become conventionalized as grammatical ‘gestalts’, also known as patterns or constructions, as also pointed out by Lakoff (1977) in his paper “Linguistic Gestalts”. Such constructions are systematically investigated by Goldberg (1995) and several others in ‘construction grammar’. Here it is assumed that constructions such as the caused motion construction (He blew the paper off the table) cannot be seen as resulting from compositional assembly, but constitute a separate level of organization and exist as gestalt-like patterns or established configurations which have meaning relations independent of the lexical components. As Michaelis (2003) puts it, there are thus three types of meaning: word meaning, (compositional) sentence meaning, and constructional meaning, which is the meaning of a syntactic pattern like the caused motion construction.

Let’s now look at each of these three foundational endeavors in more detail.

2.1. The relation of grammar to cognition

As a highly abstract symbolic system, the grammar of a language is even more intimately linked with, and subject to, general cognitive processes than the lexical system. Talmy (1972, 1975, 1978, 1988a, 1988b, 2000) shows that the structure of grammar is related to principles of gestalt perception, one of which states that the perception of an overall shape comes about by dividing the perceptual field into a more prominent ‘figure’ and a less salient ’ground’, against which the figure moves, is moved, or otherwise stands out. Talmy applies the perceptual principle of figure/ground alignment to complex sentences and shows that the main clause has the function of the figure and the subordinate clause that of the ground.5 Langacker (see section 2.2) applies this principle to linguistic structuring at all levels (also see Lakoff 1977).

Probing into the relation of grammar to cognition, Talmy (1988a) treats the relations between lexicon, grammar, and cognition in terms of a building metaphor. Whereas the lexicon can be compared to the single bricks of a building, the grammar is “the conceptual framework or, imagistically, a skeletal structure or scaffolding for the conceptual material that is lexically
specified” (Talmy 1988a: 165). The lexicon contains content words and reflects the tens of thousands of individual phenomena as single, conceptual categories, whereas the grammar develops more abstract, schematic categories. Thus the schematic meaning of the plural morpheme, that is, a meaning applying to all possible contexts, is the notion of ‘multiplexity’. This is found not only with count nouns (cups), but also with abstract nouns (fears, misgivings), uncountable nouns (ashes, waters), or event nouns (the silences between the two lovers). The concept ‘multiplex’ is not limited to nouns and the plural morpheme, but can also be found with iterative verb forms, as in He was hitting her. Thus, whereas the lexicon diversifies the conceptual world more and more, the grammar synthesizes, under one common denominator, quite different manifestations of “more than one”, be it concrete entities, abstract entities, uncountable phenomena, or events. In this way grammatical “structuring is necessary for a disparate quantity of contentful material to be able to cohere in any sensible way and hence to be amenable to simultaneous cognizing as a Gestalt” (Talmy 1988a: 196). Still, lexical and grammatical specifications are to be seen along a continuum ranging from content categories to schematic categories, which, like all categories, are by definition equal in nature.

2.2. Cognitive Grammar in operation

According to Langacker (1995: 4), all linguistic meaning is conceptual in nature, that is, it resides in conceptualization. All conceptual entities are either ‘things’ expressed as nouns like book or linguistics or ‘relations’ expressed as verbs, prepositions, etc. like know or about. They are compositionally joined to each other in ‘relationships’ like a book about linguistics or I know that book. A linguistic expression (be it word, phrase, sentence, or text) always imposes a construal on some body of conceptual content. When describing a conceived situation, a speaker must make choices with respect to the scope, i.e., which aspects of the situation are to be included, as well as to the perspective adopted on the situation. Perspective involves three components: first, it involves the choice of a vantage point, from which one looks at the situation. Second, it involves the choice between an objective and a subjective construal. An objective construal is an explicit setting of the scene, e.g. by using the adverb before now the speaker defines the time reference point objectively as the speech act time (now); a subjective construal only implies an off-stage, speaker-dependent reference point, as by the mere use of the past tense in I saw him. Third,
perspective involves the choice of a direction of the ‘mental scanning’ as in the opposition between *The roof slopes steeply upward* and *The roof slopes steeply downward*. The cognizer/speaker selects things and relations according to these cognitive processes and assembles them into larger composite wholes such as relationships, clauses, sentences, and texts. Not only clauses, but also things and relationships are structured as gestalts, consisting of figure and ground. In the case of things, the figure/ground components are a profile and a conceptual base. Thus for *strawberry* the ground or conceptual base is the domain of a *strawberry plant* with roots, leaves and fruit, and *strawberry* profiles the fruit. A relationship like *the strawberry on the plate* consists of the relation *on* and the two participants *strawberry* and *plate*. The relation *on* profiles contact or support with a surface in the base domain of space. The figure/ground alignment holds between the first participant *strawberry* as a ‘trajector’ – even though it does not move – and the second participant, *plate*, as the ‘landmark’.

Whereas expressions that profile things are, prototypically, nouns, pronouns, determiners and higher-order expressions such as full noun phrases, finite verbs typically profile temporal relations or processes, whereas prepositions, adjectives, and non-finite verbs profile atemporal relations. These simple expressions can be assembled into complex expressions by grammatical patterns or ‘constructions’. A typical construction consists of two components that are integrated both semantically and phonologically. Such a composite structure, e.g. *the strawberry on my neighbor’s plate*, depends on correspondences between the subparts of the two components, i.e. *strawberry on X* and *my neighbor’s plate*. The corresponding entities *X* and *plate* are superimposed, i.e. their specifications are merged to form the composite structure. Finally, the figure/ground relation is also operative in the process of ‘grounding’ a conceived situation in the speech event, comprising the speech act, its participants (speaker and hearer), and speech act time. The speech event serves as the ground and the linguistic expression communicated as the figure. The grounding of situations is achieved by means of the tense system for temporal relationships and by the determiner system for referential relations (see Langacker 1987, 1991a, 1991b, 1994, 1999).

2.3. Construction Grammar

Langacker (1991b: 8) sees the difference between his model of a Cognitive Grammar and that of ‘construction grammar’ as follows: whereas Cogni-
tive Grammar considers constructions to be reducible “to symbolic relationships”, Construction Grammar assumes that “grammatical classes and other constructs are still thought of as a separate level of organization”. This separate level of linguistic organization has become the focus of research by Lakoff (1977, 1987: 467, 538), Goldberg (1992a, 1992b, 1995, 1996), Kay and Fillmore (1999), Fillmore and Atkins (2000), Fillmore et al. (2004). These linguists have pointed to the existence of gestalt-like patterns which are both simpler to produce and also have meaning relations between the composing parts above their ad hoc composition, thus illustrating the definition of a gestalt, i.e. that the whole is more than the sum of its parts. According to Goldberg (1995: 4), such patterns or constructions “carry meanings independently of the words in the sentence”. A few instances of very frequently used constructions are the transitive construction, the intransitive construction, the passive construction, the ditransitive construction or double-object construction (Goldberg 1992a); less frequent, but still common, are the middle construction (This book sells well), the incredulity response construction (What? Him write a novel!?!), the let alone construction (Fillmore, Kay, and O’Connor 1988), etc. The middle construction is a special case of the intransitive construction such as This book sells well, which combines at least four semantic relations beyond the assembly of constituent parts. First, the verb is often a transitive verb (like sell) but used intransitively. Second, the subject book goes beyond the semantic value of a non-agentive intransitive in that it has some special properties that ‘enable’ what is denoted by the predicate, sell well (Yoshimura 1998: 279). Third, unlike the intransitive construction, which may take all possible tenses, the middle construction prototypically occurs in the simple present, suggesting a kind of genericness. Fourth, the middle construction requires an adverbial or other modifier specifying the manner of what the predicate denotes. According to Taylor (1998: 201), constructions are thus schemata which have to be characterized by criteria such as the configuration of the parts, the contribution of the parts to the overall meaning of the construction, and the semantic, pragmatic, and discourse value of the construction (the middle construction is especially favoured in advertising). In a nutshell, the dominant semantic relation of “property” does not come from the assembly of book with sell, but it originates from the gestalt of the construction as a whole. In other words, constructions are instantiated by linguistic expressions which ‘inherit’ their (more) abstract relations from the higher sanctioning construction. Thus, the middle construction need not only use what would be a direct object in a transitive construction (sell a book), but it can, though marginally, also have a locative as in the follow-
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In a bookseller’s exchange: ‘Where shall we put the new travel book?’ – ‘Well, the corner shop window sells very well’. Obviously, we can observe prototypicality effects in this construction too, demonstrating that we witness the impact of the same very general cognitive principles at all levels of linguistic structure.

3. Phenomenology-based CL: Cognitive Semantics

Having been in close direct contact with Chomsky and the generative paradigm, Lakoff (1965) was one of the first to challenge its methods and assumptions. Gradually, Lakoff also began to doubt the validity of the philosophical basis of the traditional Aristotelian conception of categorization underlying most human sciences, including linguistics (Lakoff 1972). In philosophy, a new paradigm, known as phenomenology and based on human experience and perception in the conception of the world, had won part of the scientific arena. The cooperation between Mark Johnson and George Lakoff paved the way for a fundamental philosophical reorientation in linguistic thinking, in Lakoff and Johnson (1980) still called experientialism. When in the field of cognitive psychology of the seventies, Eleanor Rosch came up with experimental evidence against the classical view of human categorization, the various new insights merged into a new paradigm, which some years later acquired the name Cognitive Linguistics.

3.1. Prototype theory

Lakoff (1982a, 1982b, 1987) was one of the first to realize the important philosophical implications of prototype research for the functioning and the study of language. Although Rosch’s prototype theory uses psychological research methods, it represented a serious challenge for the tacit belief on the part of philosophers in Aristotelian classical views of categories. The basis of Aristotelian epistemology is that all members of a category, e.g. the category fruit, share some essential feature(s), that all category members have equivalent status as members, and that category boundaries are clear-cut. In contrast, Rosch showed that categorization is based on everyday experience and does not always lead to clear-cut categories with necessary and sufficient features. Rather more often than not, it leads to categories which have a clear center populated by prototypical members, and which have fuzzy boundaries that allow for marginal members which may
even overlap with other neighboring categories. Let’s suppose that for the
category fruit characteristic features such as sweet, soft, having seeds, and
growing on bushes or trees are necessary and sufficient features. In this
case several types of fruit would remain outside the category: lemons,
because they are not sweet, avocados, because they are not necessarily soft,
and bananas, because they have no obvious seeds. Strawberries are more
like rhubarb because both grow on the ground, not on bushes or trees. Are
they fruits? Why is a strawberry a fruit, while rhubarb is not? All this
fuzziness within or between categories suggests the necessity of a proto-
type view of categorization (Berlin and Kay 1969; Geeraerts 1989; Rosch
1973, 1977, 1978), which holds that categories do not reflect ‘objective’
assemblies of features, but rather are man-made approximations consisting
of clear, central or ‘prototypical’ members such as apples, pears and or-
anges for the category fruit, and less central or even marginal members
such as avocados, lemons and strawberries. Hence, members of a category
do not have equivalent status and category boundaries are not clear-cut
(nuts grow on trees but do not share any of the three other basic features).
Categories are to some extent also based on family resemblances as shown
by Wittgenstein (1953) for the German category Spiele ‘games’, which not
only contains the category game, but also such diverse category members
as a (sports) match, a (theater) play, and gambling for money. There is also
psychological evidence for prototype effects in categorization. Statements
about central members are processed far more quickly than statements
about marginal members, and reasoning about any category is based on
what is known about good examples of the category (Rosch 1978).

3.2. Lexical network theory; critical counterclaims

Rosch’s findings in the seventies had led to a vital breakthrough in lexical
semantics in the direction of a non-formalist, flexible and conceptual con-
ception of meaning. In linguistic theorizing there had traditionally been a
huge cleft between a monosemist and a polysemist view of the lexicon.
Generative linguists (e.g. Bierwisch and Schreuder 1992) tended to sub-
scribe to a monosemist view, according to which words have only one ba-
sic meaning and the different applications to various entities in the world
are managed via an interface between language and thought (see Taylor
1995). This monosemist approach may work nicely for words expressing
artifactual entities such as university, which in the sentence He left the uni-
versity can mean the building, the place of learning, or a period in a per-
son’s life. But things are far more complicated in the case of words denoting natural entities such as *fruit*. In its prototypical use, *fruit* refers to ‘something such as an apple, banana, or strawberry that grows on a tree or other plant and tastes sweet’ (*LDCE*). In this sense we can oppose *fruit* to *vegetables*, e.g. *fresh fruit and vegetables*. But in a technical sense, *fruit* is ‘the part of a plant, bush, or tree that contains the seeds’ (*LDCE*). In this sense, *potatoes* and all other root crop are fruits. Obviously, these two senses of one word are mutually exclusive. *Fruit* is an instance of specialization, but the basic polysemy of lexical items does not end here. Each lexical item can undergo four different cognitive processes of meaning extension, i.e. generalization, specialization, metaphor, and metonymy. *Fruit* is an instance of generalization and means ‘all the natural things that the earth produces such as fruit, vegetables or minerals’ (*LDCE*). Metaphorical extension has applied to *fruit*, as in *the fruits of one’s work*, meaning ‘the good results from working very hard’ (*LDCE*). The word *fruit* is then not only highly polysemous, but its four senses are also systematically related by the various cognitive processes discussed so far. *Fruit* is the prototypical sense. *Fruit* is a more specific term, though only applicable to anything carrying or counting as seeds, hence also to grains, nuts, roots, tubes, etc. *Fruit* is a more abstract generalization, including minerals. *Fruits* applies metaphorically to the abstract domain of the results of human endeavor. These four interrelated senses can be represented in a radial network (see Dirven and Verspoor 2004: 33–35), in which the conceptual links between the various senses of a polysemous unit such as *school* are conceptually interlinked.

However, the above picture of CL tends to reflect only the views of the eighties and nineties. That portrait is not the end of the story; rather, a new evolution is coming about, both in the newest approach by the earlier protagonist of prototype theory, Eleanor Rosch, and in various cognitive semantic circles. Rosch (1999) now stands for a radically embodied conception of categories, which are not static representations, not even representations, but instruments for action in the world:

> Concepts and categories do not represent the world in the mind, they are a participating part of the mind-world whole. (Rosch 1999: 72)

> Concepts are the natural bridge between mind and world to such an extent that they require us to change what we think of as mind and what we think of as world; concepts occur only in actual situations in which they function
as participating parts of the situation rather than either as representations or as mechanisms for identifying objects. (Rosch 1999: 61)

Also in Cognitive Semantics, the concept of a radially extended network of polysemous word meanings is coming under increasing pressure from two opposite directions. On the one hand, the proliferation of distinct, reified senses is increasingly challenged by scholars such as Allwood (2003), Janssen (2003), or others. Assuming that a theory of meaning is more operational than representational, they suggest that some very few basic senses of an expression (in the limiting case, just one) serve as ‘prompts’ for meaning construction in on-line discourse, combining with contextual interpretation to yield the necessary inferences about distinct semantic functions of an expression in distinct environments. On the other hand, the notion of network as a ‘relational structure’ (Sandra and Rice 1995) is challenged both by approaches to semantic radial extension that reject sense-to-sense mapping operations (image-schema transformations, metaphorical/metonymic extensions) in favor of emergence of new, free-standing senses via abductive reanalysis of usage events (Queller 2003) and by empirical work suggesting that the various usages of polysemous items are acquired and stored in a relatively piecemeal, idiomatic and construction-based fashion (Rice 2003; see below in section 6).

Instead of the traditional CL polysemous view, especially fostered by Lakoff’s (1987) analysis of over, and the belief in separate and separable senses, scholars like Allwood and the others named above emphasize the role of context, which largely determines which stretch of the total ‘meaning potential’ – Allwood’s term – of a word applies in a given sentence. The increased role of context thus automatically invalidates the network model as previously conceived of. A possible solution may be coming from a combination of Cognitive Semantics and a usage-based approach combined with the insights and practice of Corpus Linguistics. We have, for example, the ‘collostruction’ framework developed by Gries (2003) and by Stefanowitsch and Gries (2003), which can be used to determine mutually exclusive word senses in a statistically valid way, while the context is needed to pin down an actual, currently active sense.8

3.3. Conceptual metaphor theory

Prototype theory can be said to hold especially for concrete categories. Lakoff and Johnson (1980) discovered that abstract categories and abstract
thought is to a very large extent based on metaphorical and metonymic mappings of concrete categories, especially those stemming from spatial domains, onto abstract areas of experience such as emotion, causation, event structure, etc. This classical conceptual metaphor theory (Johnson 1987; Lakoff 1987, 1993; Lakoff and Johnson 1980, 1999; Lakoff and Turner 1989; and hundreds of other papers) assumes that the human mind maps elements from concrete source domains onto the more abstract target domains of emotion, causality, event structure and tens of others. The concrete categories themselves are categorized on the basis of pre-conceptual spatial configurations shared by most living beings. According to Johnson (1987), also the human perceptual system is based on such pre-conceptual, most of all spatial, image-schemata, which allow them to react to, and manipulate, the world. These pre-conceptual representations encompass sensory-motor and visual schemata such as motion, containment, surface, contact, support, force, blockage, verticality, proximity-distance, etc. As the human mind and language develop, these pre-conceptual or bodily image-schemata serve as the basis for categorizing the physical world and, by means of a metaphorical leap, serve again for categorizing the abstract world.

Lakoff and Johnson (1980) claim that metaphors are not primarily a matter of language but a matter of thought. The metaphorical mind seizes upon the world of spatial concrete categories and, by means of metaphor, ‘transfers’ these concepts onto less concrete and ever more abstract domains such as emotion, time, causality, event structure, etc. Thus we tend to conceptualize the emotion of anger as the conceptual metaphor (hence in upper case) HEATED SUBSTANCE IN A CONTAINER, which may be expressed in various linguistic metaphors e.g. My blood was boiling, He was seething with anger, He blew his top. Time is experienced as A MOVING OBJECT (The years flew by) or as EGO MOVING IN A BOUNDED REGION (We are coming up to Christmas). The complex ‘event structure metaphor’ consists of various subtypes such as states, changes, causes, actions, purposes, means, difficulties. All of these are conceptualized in spatial image-schemata: STATES ARE LOCATIONS (be in doubt); CHANGE OF STATE IS CHANGE OF LOCATION (get into trouble); ACTION IS SELF-PROPELLED MOTION; PURPOSES (OF ACTION) ARE DESTINATIONS; MEANS ARE PATHS (TO DESTINATIONS); and DIFFICULTIES ARE IMPEDIMENTS TO MOTION.

Lakoff’s claim is that such basic conceptual metaphors may well be universal since human bodily experience is basically the same all over the world. Research on this claim is burgeoning. Marin (1996) finds parallels
between English and Spanish time metaphor systems in spatialization schemas. However she stresses that universality remains open to further contrastive studies involving non-Judeo-Christian cultures. Alverson (1994) undertook such a comparison between time expressions from English, Mandarin Chinese, Hindi, and Sesotho. He reviews the different philosophical traditions of time in the West, India, and China and concludes that spatialization of time is not a Western artifact. But Tyler (1995) criticizes Alverson’s use of his database and particularly his spatialization proposal. It is noted, e.g. that spatial metaphors of time are neither universal nor comprehensive as a model of time. Also, the process by which bodily experience is translated into conceptualization is too little understood at this point to allow any firm conclusion. Partial support for the universalist claim is offered by Boroditsky (2001) for the Western and Eastern ways of conceptualizing time and by Ning Yu (1998), who shows both the universal character of the Chinese conceptualization of the abstract domain of emotion, while simultaneously illustrating the uniquely concrete way that Chinese has of expressing the respective conceptual metaphors. Thus anger is not seen as a hot fluid in a “body” container (the Western conceptualization) but as gases in numerous small heated body-part containers called “belly fire”, “kidney fire”, “liver fire”, etc. Here Eastern medical wisdom and practice leads to a far more concrete, bodily self-experience. Yu thus offers evidence both for the possible correctness of Lakoff and Johnson’s universalist claims (HEATED SUBSTANCE) and for the great, colorful variety of culture-specific realizations (fluid or gas) of these putative universal conceptual metaphors.

3.4. Embodied realism

Cognitive Semantics, as Lakoff, Johnson and many others see it, is a challenge to traditional Western thought from Aristotle to Descartes, as well as to many philosophical assumptions underlying present-day linguistic theories such as Chomsky’s Generative Grammar. Traditional thought is based on the theorem of objectivism or objectivist realism, for which “true knowledge of the external world can only be achieved if the system of symbols we use in thinking can accurately represent the external world” (Lakoff 1987: 183). Traditional Western philosophy and linguistics is rooted in the Aristotelian belief in classical definitions of categories, in objectivist realism (the existence of a mind-independent reality), and in the possibility of stating absolute truths. Cognitive Linguistics, in contrast,
adopts a phenomenological approach as its philosophical basis (Lakoff and Johnson 1980: 181, 1999). Geeraerts (1985: 355) characterizes this phenomenological approach as follows: “All individuals have an intentional relationship to the world and their access to the world or their consciousness is realized by their bodily experiences of that world”. Everyday discourse, as well as highly abstract discourse is largely bodily- and spatially-based, and from there, metaphorically and metonymically extended. It does not come as a surprise then that most higher domains of life, including religion and science, philosophy and metaphysics, are conceptualized at a metaphorical level. This aptness for metaphor does not ‘belittle’ scientists, since metaphoric theories “can have literal entailments” (Lakoff and Johnson 1999: 91) which make non-metaphorical predictions in the form of generalizations or natural laws. These non-metaphorical predictions can always be verified or falsified. A typical example is neuroscience, where most statements are made in terms of the circuitry metaphor, which invokes physical circuits for the conceptualization of ion channels and glial cells (Lakoff and Johnson 1999: 103). It is through the converging evidence from many different experiments that scientists achieve stable results, in the same way that we deal with real things in everyday life on the basis of intersubjective experience.

Also in this area, new critical views are expressed. For example, Violi (2004) rejects the equation of body and brain, – a thesis now implicitly adopted by Lakoff in his interview with Sánchez (2003) –, since the brain lacks an important point of contact with the world which only the body possesses. This is the perspective imposed on our perceptions, depending on the vantage-point and opening the path to subjectivity. It is remarkable how much similarity we find here with Langacker’s approach to grammar (see section 2.2). In line with Rosch’s latest view of categories, also the notion of ‘body’ is redefined:

The notion of ‘body’ is not a self-evident nor simple one, as is too often assumed in contemporary Cognitive Science; on the contrary the body is a constructed concept, and as such, cannot be reduced to purely neurophysiological aspects nor to the brain. The kind of body that needs to be incorporated into Cognitive Semiotics is a phenomenological one, allowing us to open up for the central issue of subjectivity. (Violi 2004: 204)

Also in Cognitive Semantics scholars like Zlatev (1999, 2002) criticize Lakoff’s present use of the concept of embodiment as too little embedded in the situational context and his dealing with floating bodies detached from
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their environments. Instead, Zlatev proposes a ‘situated embodiment’ and presents an approach which he calls “situated embodied semantics” in which meaning emerges from a pairing of linguistic expressions with situations. He uses connectionist modeling to test the feasibility of the approach and for gaining insights into such issues as learning categories without necessary and sufficient conditions for membership, the context dependence of meaning and the ability to utter and comprehend novel expressions. A group of scholars including Ziemke, Zlatev, Sinha, Rohrer, Steels, Ikegami, Doering, and Emmeche are now preparing a volume on embodiment called Body, Language, and Mind (Ziemke et al. in prep.).

3.5. Conceptual metonymy theory; Cognitive Pragmatics

Although there does not seem to be any intrinsic link between metonymy and pragmatics, several cognitive linguists have explored both areas simultaneously and have enriched CL by their insights, not only in metonymy itself, but also in the cognitive structure of speech acts and their implicatures and explications.

Whereas Lakoff and Johnson (1980) did realize the importance of metonymy, they spent but a brief section on it. Still, previously, Lakoff’s spiritual father, Roman Jakobson (1971 [1956]), had emphasized the existence of a figurative-language continuum with the metaphoric and the metonymic poles as its two extremes. Jakobson’s balanced view was probably still impossible to realize at the time of the metaphor revolution launched by Lakoff and Johnson in Metaphors We Live by (1980). It took almost another twenty years to fully redress the balance between metaphor and metonymy, culminating in programmatic papers by Kövecses and Radden (1998), Radden (2000), and Radden and Kövecses (1999) and in collective volumes by Barcelona (2000), Dirven and Pörings (2002), and Panther and Radden (1999). We will concentrate here on Ruiz de Mendoza (1999) and Ruiz de Mendoza and Otal (2002: 27–42, 50–56) because they combine metonymy and pragmatics research, and, at the same time, have been the first to define metonymy fully independently of metaphor. Lakoff, Johnson, Turner and others see metonymy either as having a referential function, whereby one entity “stands for” another entity within the same cognitive domain, or else as serving as a reference point that offers access to the other entity. While it is not denied that these referential functions are often served by metonyms, it is not their essence. Ruiz de Mendoza and Otal (2002) conclude this from the existence of predicate metonyms such as
Mary is a pretty face, in which the predicate metonymy a pretty face does not stand for the person of Mary, rather it is a very salient feature which even serves to sum up the whole person. In the case of a metaphor like John is a pig there are always at least two different domains involved, whereas in metonymy there is only one domain, usually a domain and a subdomain (person vs. face). Just like in metaphor, source features are mapped onto target structures; also in metonymy we are dealing with mappings, i.e. conceived and imposed connections or correspondences between features in the source and the target. In metonymy, the salient features of the whole domain are mapped onto the subdomain or salient features of the subdomain are mapped onto the whole domain as in the above example: Mary not only has a pretty face but she is a pretty face. By saying this, the speaker identifies Mary as a pretty face: the beautiful and attractive features of the face dominate the person’s being what and who she is. This example is a source-in-target metonymy: the source domain pretty face is mapped onto the target Mary. Here the target domain is also the receiving or matrix domain, or in other words, the target domain as matrix domain remains available for further reference. Therefore a source-in-target metonymy can always serve as the input for anaphoric reference, as in The pretty face is paying her bill. This remarkable fact is called the Domain Availability Principle. The opposite case is a target-in-source metonymy like Bush attacked Iraq. Here the source concept “Bush” stands for the target concept “army”. Although traditionally this has been seen as a part-for-part metonymy, Ruiz de Mendoza and Otal (2002: 55) claim that it is a part-whole metonymy. Our encyclopedic knowledge about Bush is such that it comprises a very complex power structure including his being the president of his country, the commander-in-chief of the army, the leader of the Republican party, etc. But the target, i.e. the referent that is meant in the sentence about attacking Iraq is only the U.S. armed forces. So the target is a subdomain of the source, which now serves as the matrix domain. Bush as the source is mapped onto the army as target. In this target-in-source metonymy, the target is no longer available for reference, because it is encapsulated in the source and, hence, no anaphoric reference to the intended referent is possible: *Soon after Bush attacked Iraq, it took Bagdad. In other words, the target in a metonymy is only referentially accessible and available, if it is not encapsulated in some other subdomain. The new CL approaches to metonymy do not only concern metonymy itself but also rethink central aspects of pragmatics in a cognitive sense.

Cognitive pragmatics in its embryonic form was already contained in Thornburg and Panther’s (1997) metonymic analysis of indirect speech
acts. In their view, indirect speech acts of the types that Searle (1979) calls directive, commissive and expressive such as promises, offers, requests, suggestions, etc. can be described in terms of metonymic models. In other words, just as a speaker can refer to a person by mentioning a salient feature of that person, a speaker can perform a speech act by mentioning an attribute of that speech act, be it the ability to perform the action, the volition to do so, the reason to do so, etc. This metonymic approach works for speech acts and also for other constructions such as hedged performatives and sentences about sense perceptions and mental activities, all of which corroborate the hypothesis that speech act metonymies are just special applications of more general metonymic principles. In a more theoretical approach, Panther and Thornburg (2003) see cognitive pragmatics as the “cognitive understanding of pragmatics and its reinterpretation along the lines of a cognitive interpretation of the processes taking place at this level of language use”. This insight has already been applied to the metonymical processes that relate partial aspects of a speech act to the whole process at stake and vice versa. In their collective volume *Metonymy and Pragmatic Inferencing*, the editors Panther and Thornburg (2003) pursue the issue and state that conceptual metonymy is as fundamental as metaphor for reasoning and the construction of meaning. The contributions aim to bridge the gap between cognitive linguists and scholars working in a pragmatic framework. Topics not only include the role of metonymically-based inferences in speech act and discourse interpretation, but also grammar itself. Various contributions try to answer questions such as: what is the pragmatic meaning of grammatical constructions, what is the impact of metonymic mappings on grammatical structure, and what is the role of inferencing in linguistic change?

Similarly, according to Ruiz de Mendoza (personal communication), cognitive pragmatics is a label that captures all attempts to explain most if not all major pragmatic phenomena in terms of the standard conceptual tools provided by CL. Thus the distinction between explicatures and implicature is a clear case in point for him. Explicatures of an utterance are the result of cognitive operations like expansion or reduction, whereby, due to metonymy, the utterance meaning can be associated with “more” meaning (expansion) or with “less” meaning (reduction) (Ruiz de Mendoza and Peña 2002). Implicatures are enabled by the processes of correlation or resemblance, which is a case of metaphor. Cognitive pragmatics is making good progress and will probably become a more central issue for the CL paradigm. This possibility may be realized on the condition that a correct understanding of the notion of embodiment is applied to pragmatics. Again Violi
(2004), re-introducing the term *affordances*, may indicate a possible route to follow:

Affordances are nothing more than possibilities for action and use offered by the local environment to a particular type of embodied agent, equipped with specific bodily features. In this way perception is always contextualized and constructed: the world is essentially perceived by some given organism endowed with its own intentions in some given context, and is seen as affording opportunities for goal directed actions. Perception is therefore always connected to action, and both perception and action are always connected to cognition. (Violi 2004: 216)

4. Cognitive discourse research: mental spaces, blending, poetics, coherence

Cognitive Linguistics is not only a lexico-grammatico-pragmatic theory of language but it also embraces the textual levels of language structure, including various dimensions of discourse development. Here we will concentrate on three approaches: the on-line processing of discourse via mental maps and their conceptual blending, the development of coherence links and discourse representations, and the poetic exploitation of discourse structures.

4.1. Fauconnier’s mental space theory and blending theory

In actual discourse, various linguistic or non-linguistic knowledge frames about people, things and events are invoked and stored in working memory, which Fauconnier (1985/1994) calls ‘mental spaces’. These are packets in which temporary online discourse information is stored. Each utterance, even each content word, in discourse reflects and evokes a mental representation of some situation. Discourse management is effected by keeping track of the mental spaces already opened and the new ones that can be opened at any time. For the encoding and interpretation of mental representations we draw not only on the linguistic expression, but also on the speech situation, and on encyclopedic or world knowledge (Haiman 1980, 1985). Each utterance is based on a basic mental space which is the speaker’s perspective, possibly shared by other participants in the speech event. This is the base space (or space 0). In it we can open new spaces as illustrated in a much discussed example: *I dreamt I was Marilyn Monroe and kissed me.*
Here *I dreamt* is part of the base space and the verb *dream* is a space-builder opening a new space (space 1) of an imagined world in which the second *I* (*I was Marilyn Monroe*) is no longer identical with the first *I* (*dreamt*) in the base space; rather it is part of a new knowledge frame in which Marilyn Monroe is not kissing herself, but the speaker, i.e. the *I* in the base space. Fauconnier (1997), Sweetser (1996) and Fauconnier and Sweetser (1996) developed mental space theory into an encompassing cognitive theory of discourse and discourse management. In the development of the ongoing discourse, speaker(s) and hearer(s) have to keep track of all the mental spaces opened up and can at any time go back to any of them to elaborate them further.

Over time it gradually became clear that mental space theory was also applicable to the understanding of metaphor and metonymy (Fauconnier and Turner 1995). The important new insight was that many different domains or spaces are involved in metaphor understanding, not just the source domain and the target domain. In this view, both the source domain and the target domain are seen as input spaces whose relevant features are mapped into a ‘generic space’ containing the common elements of both. This generic space is mapped onto a ‘blended space’ which remains linked to the input spaces. However, it may contain new elements of its own, ‘emergent structure’ not present in the source or target domains. Thus the input spaces for the emotion of extreme anger (*He is boiling with anger*) are the source domain of ‘physical’ events like heat in a container and an implied orifice through which the steam or smoke can escape such that the container will not explode when it reaches boiling point. The target domain is the ‘psychological’ domain of anger, which is expressed metonymically in a third space, the ‘physiological’ signs of body heat, perspiration, redness, acute shaking, loss of control, etc. In the expression *He was so mad, I could see the smoke coming out of his ears* the blend contains the element *smoke coming out of his ears*, which is not present in the source domain, nor in the target domain, but it results from the multiple cross-mapping from the various input spaces. This approach to metaphor and metonymy known as blending theory is, in fact, a theory of conceptual integration. Fauconnier (1997) applied blending theory to an ever wider range of phenomena in language and language processing and then analyzed the mapping and linking of mental spaces in the process of meaning construction. His analyses involve, in addition to reference and metaphor, areas such as time, tense and mood, opacity, counterfactuality, fictive motion, grammatical constructions, and quantification over cognitive domains. In addition to the cognitive process of blending, these phenomena evidence
other cognitive processes such as analogical mappings, discourse management, induction, recursion, cross-space mapping, access and spreading activation principles, space tracking by viewpoint and focus shift, matching, and structure projection. Given their rapid occurrence, these processes are not consciously noticeable or linguistically encoded. Rather, language provides underspecified contextual clues that prompt cognitive configurations and pre-structured backgrounds. A single set of principles accounts for high-level scientific, artistic, and literary thought as well as basic comprehension and sentence meaning. This analysis implies that the cognitive processes responsible for constructing linguistic semantics also drive non-linguistic reasoning and comprehension.

One of Fauconnier’s students, Coulson (2000), combines blending theory with the cultural primacy of language and text understanding. She illustrates this in her analysis of the criticism of George Bush by a journalist describing him as a guy who was born on third base and thinks he hit a triple (Coulson 2000: 172). In order to understand the metaphorical mappings here one needs to know not only the rules of American baseball and its social ramifications in American society, but also the principle of the basic equality of all American citizens, governing the social system, to which Bush sees himself as an exception. The central notion of coherence in discourse thus requires both metaphoric and cultural understanding.

The various CL insights and tools for text interpretation have stimulated various literary scholars to apply them to literary discourse.

4.2. Cognitive poetics

The first step towards a cognitive poetics was taken in Lakoff and Turner’s book *More Than Cool Reason* (1989), in which the authors argue that certain interpretations of poems use the same conceptual metaphors that exist in our everyday conceptual systems. This claim, George Lakoff says in his interview to Pires de Oliveira (2001: 40), “is a reasonable application of cognitive science to the humanities”. Although in the nineties some philosophical and psychological circles voiced sharp critiques of conceptual metaphor theory, especially in the journal *Metaphor and Symbol* (Johnson and Henley 1988; Kennedy 2000; Murphy 1996; Vervaeke and Green 1997; Vervaeke and Kennedy 1996), more recently, a broad stream of scholars applying conceptual metaphor theory to literature has emerged: Finch (1995), Gavins and Steen (2003), Goodblatt (2001), Herman (in press), Holland (1988), Radwanska and Hiraga (1995), Semino (2002), Semino and Cul-

One finds eclectic approaches to cognitive poetics such as Stockwell’s (2000), who argues that only by combining the cognitive analysis of a variety of features, formal as well as psychological ones (syntax, deictic shift, cognitive stance, conceptual metaphor, attention), can one reveal the core of what is understood by texture. In contrast to this more eclectic type of work, there are also more principled approaches such as Margaret Freeman’s, who focuses on the poetic form-contents relationship, and Semino’s, who explores the concept of the ‘mind style’ as the characterization of individual characters.

Freeman (2002) goes far beyond the common interest in conceptual metaphor theory, adopting a Langackerian view and investigating how the conception of language as the matching of phonetic form with conceptual content is reflected in poetic language. In her programmatic paper “The body in the word. A cognitive approach to the shape of a poetic text” (2002) she starts from the cognitive concepts of ‘embodiment’ and ‘materialism’ to plead for the central position of form in the process of meaning construction in poetry. As Geert Brône (2003) points out:

In her analysis of original hand-written versions of two poems by Emily Dickinson, Freeman illustrates how meaning partly emerges from formal aspects such as line breaks, markings, etc. Traditional critical discussions of these poems have neglected or underestimated the contribution of the physical form, basically because they did not adopt the cognitive stylistic view that “language is embodied, just as the mind is embodied”. (Brône 2003: 25)

At the same time, Freeman, just like Zlatev, understands embodiment as ‘situated embodiment’, and views a poem as being set within the wider world of the cognitive, cultural and contextual frames associated with it.

Semino (2002) and Semino and Culpeper (2002) are in search of the individual character’s world view, which Semino labels “mind style”. In Semino (2002), the author tries to detect in the novel’s language the reflection of the “particular conceptual structures and cognitive habits typical for an individual’s world view” (Brône 2003). By combining linguistic patterns with existing cognitive theories, one can best arrive at conclusions about the characterization of individuals in the novel. In her discussion of mind style of John Fowles’s ‘The Collector’, she illustrates how cognitive theories such as schema theory, conceptual metaphor theory and blending
theory can be applied complementarily to explore how mind styles are linguistically developed.

Also non-literary discourse study has received vital impulses from CL, namely from a group of European scholars who concentrate on systematic coherence relations in spoken discourse.

4.3. Cognitive discourse study of coherence links

Cognitive discourse study established itself as a full-grown subdiscipline within Cognitive Linguistics by the publication of the collective volume by van Hoek, Kibrik, and Noordman (1999). A fast growing number of scholars, e.g. Giora (2003), are currently doing research in this area from perceptual viewpoints. Others start from coherence relations and the role of consciousness in text representation. These are the central themes of the research group organized around Noordman with Maes, Sanders, Schilperoord, Spooren, and several others. We select two types of research from this group, concentrating on conceptual links in experimental studies.

Noordman and de Blijzer (2000) examine the differences in reading time and hence the difficulty of understanding for the different types of causal links. They distinguish between two types of cause-effect construal: an iconic cause-effect sequence as in (a) *John worked hard. He passed the exam*, and a non-iconic effect-cause order as in (b) *John passed the exam, (because) he worked hard*. These two orders are extremely different conceptually: the iconic order of CAUSE – EFFECT in (a) is about relations in the world, whereas the second order EFFECT - CAUSE in (b) is about our judgment of the relations in the world. With Sweetser (1990), the first type is called a content relation, and the second type an epistemic relation. A large-scale experiment confirms that epistemic relations require more processing time than content relations. But this is not the whole picture. Although the iconic order may facilitate processing, the authors see other important cognitive factors influencing reading time, especially the strength of the causal link and the role of disabling conditions. The causal link is not extremely strong in the case of exams: working hard does not necessarily guarantee passing one’s exam. But it is very strong in the case of touching stinging-nettles with one’s naked hand: this necessarily causes a terrible itching of one’s hand. Such highly predictable links between cause and effect are seen as ‘causal constraints’, i.e. they do not allow alternative causes to be invoked. Still, strong causes as in *Lying in the burning sun for a long time causes a sunstroke* may contain ‘disabling condi-
tions’ such as wearing a large hat, which prevent the cause from having any effect. These two cognitive scenarios of causal constraints and disabling conditions were largely confirmed in the experimental study set up by the authors measuring the reading times needed for the various types of causes.

Pander Maat and Sanders (2000) concentrate on the iconic causal order of cause-effect and research this causal relation at two of the three cognitive levels of content, epistemic, and pragmatic relations by means of the Dutch connectives daardoor ‘as a consequence’, daarom ‘that’s why’, and dus ‘so’. They claim that Sweetser’s (1990) approach in terms of content and epistemic relations, while valid, is not yet able to account for the differences between these three Dutch connectives.

In order to avoid the difficulty of using Dutch material, we have transposed the discussion to English, where the situation is comparable, though somewhat different too. The three connectives are the content connective as a consequence and the two epistemic connectives that’s why and so. Of the latter two, that’s why involves an explicit ‘subject of consciousness’ (SoC) or observer and so only involves an implicit subject of consciousness. The three connectives are all possible in (a); in (b) only the two epistemic connectives that’s why and so are possible and in (c) only so is possible:

(a) The sun rose. The temperature went up. (As a consequence, That’s why, So)
(b) It was 8 o’clock. Claire put on the television. (That’s why, So) explicit SoC
(c) It was a small case, all rusty. It was made of iron. (So) implicit SoC

In (a) we find a link between two external, physical states of affairs and here either the construal of a contents link, i.e. a pure cause-effect relation (as a consequence), or that of an epistemic link, i.e. the explanation of a human observer, are possible. In (b) and (c) we only find epistemic links; hence, the connector As a consequence is impossible. In this case Sweetser’s distinction between contents and epistemic levels is not yet sufficient to account for the difference between the links in (b) and in (c). In (b) the link is not one between an external state of affairs (it is 8 o’clock) and a human action (put on television), but between the mental representation of the external state of affairs and the human action. That is, here, like in all epistemic judgments, a human observer, called a subject of consciousness (SoC), appears on the scene. That’s why here combines two conditions: a mental representation of a physical condition and a volitional human action so that a certain degree of subjectivity is involved. The difference between
(b) and (c) lies in the degree of subjectivity. With *that’s why* there is a greater distance between the speaker and the SoC, with *so* subjectivity is highest or the distance speaker-SoC is very much smaller, even if the SoC is only implicit as in example (c). This difference can also be linked to Noordman and de Blijzer’s ‘disabling conditions’: in (c) the iron case need not by necessity be rusty, if it were kept in a dry place. In (b) the causal link is even extremely weak: there may be hundreds of reasons why Claire does not follow her usual pattern and postpones switching on the TV at 8 o’clock. Precisely for this reason the role of the subject of consciousness becomes much stronger: the observer imposes her or his judgment on the situation, which is typically realized by the expression *That’s why*. In a corpus-based study the authors then show the correctness of their analysis. This type of cognitive discourse analysis thus puts the conscious human observer in a central position and analyzes text coherence and text representation as mental processing activities.

5. **Cognitive sociolinguistics: language variation, ideology, cultural models**

Cognitive Linguistics has a very natural basis for sharing common concerns with sociolinguistics (Janicki 1990, 1999, 2003). As a usage-based approach to language and grammar, CL is bound to be open to sociolinguistic problem areas such as language variation, the merging of language with ideology, and the link of language with culture, as laid down in the notion of cognitive cultural models.

5.1. CL’s usage-based conception of language

The usage-based conception of language, one of the major tenets of Cognitive Linguistics, is interpretable in two directions. A usage-based grammar can first of all be understood, in the sense of Langacker’s (1999: 91) definition, as a model of language acquisition and grammar as a bottom-up endeavor strongly contrasting with the top-down rule deduction processes postulated by Generative Grammar.

In a usage-based model, substantial importance is given to the actual use of the linguistic system and a speaker’s knowledge of this use; the grammar is held responsible for a speaker’s knowledge of the full range of linguistic conventions, regardless of whether these conventions can be subsumed under more general statements. It is a non-reductive approach to linguistic
structure that employs fully articulated schematic networks and emphasizes the importance of low-level schemas.

A second interpretation of the concept “usage-based grammar” has taken relatively long to receive more general acclamation. This interpretation relates to two major implications of Langacker’s definition: the method of data gathering, i.e. use of corpora, and the scope of CL’s research object, i.e. the research of social and regional variation as part of CL’s core business. It is the firm conviction of a growing number of scholars such as Barlow and Kemmer (2000), Geeraerts, Grondelaers, and Bakema (1994), Geeraerts, Grondelaers, and Speelman (1999), Gries (2003), Hampe and Schöenefeld (2003), Stefanowitch (2003) and many others that usage-data collecting requires the methods employed by Corpus Linguistics. Still, one sees a certain split between American and European practice here. Whereas American (cognitive) linguists rather tend to favour the introspective method (even attributing little if any validity to the corpus method with the possible exception of the contributors to Barlow and Kemmer 2000), general European practice tends much more to favour an approach based on corpus data or any other set of elicited data. This theoretical divergence and imbalance within Cognitive Linguistics calls for serious concern. Still, the variational aspect of a usage-based grammar should cause even more concern. Language variation is still widely absent from cognitive-linguistic research, whereas in fact it ought to be at the heart of its research agenda. This logical consequence has now been explicitly formulated in Geeraerts’ (This volume) ICCLC 8 plenary talk with the programmatic title “‘Usage-based’ implies ‘variational’. On the inevitability of cognitive sociolinguistics”.

5.2. Cognitive lexical-variation research: an exemplary sociolexical case study

Geeraerts, Grondelaers, and Bakema (1994) have carried out cognitive sociolinguistic research for over a decade now, most recently in Geeraerts, Grondelaers, and Speelman (1999) on standard and substandard varieties of Dutch as used in Belgium and the Netherlands (Belgian and Netherlandic Dutch). This type of cognitive sociolinguistics will hopefully gain wider ground and researchers can learn a lot by starting with the methods of corpus build-up in the latter study, and even more from its ingenious methods of setting up hypotheses and verifying or falsifying them by mathematical-statistical strategies of data management. In fact, since Labov’s (1973) investigation of the usage boundaries of the items cup, bowl, and vase, there has not been – at least at my knowledge – any statistical investigation in the area of concepts and their onomasiological or name-
giving expressions. The present investigation picks up where others have left off and may offer insights for a renewed lexis-oriented sociolinguistics or cognitive sociolexicology, and equally, as pointed out before, for a more corpus-based orientation of Cognitive Linguistics. More specifically, the scope of Geeraerts et al.’s investigation comprises three parameters: (i) an evolution of over fifty years: 1950, 1970, 1990; (ii) standard Belgian and standard Netherlandic Dutch (1970, 1990); (iii) different registers or stylistic contexts (1990). These stylistic contexts are standard Dutch in high fashion magazines, regional substandard Dutch in shop window advertising, and an elicited corpus of an enquiry, investigating students’ choices of clothing terms and their acceptability judgements of these terms. In sum, the great variation of data covering the diachronic parameters, the standard and substandard parameters and the age parameter (attitude research) represent the potential for further multi-layered sociolinguistic investigations of the diachronic and synchronic tendencies in the further evolution of Belgian and Netherlandic Dutch. A side-effect of the investigation is that language policies could be given a firm empirical basis by means of regular surveys. Yet the relevance of these research results goes far beyond the proper scope of the investigation. The methods and research strategies used might easily be extended to other diglossic situations such as standard German or other varieties in Germany, Austria or Switzerland, or French varieties in France, Belgium or Switzerland, or English varieties in England, Wales, Scotland and Ireland, or worldwide. In a word, the investigation of variables at any linguistic level in any poly-centre standard-language situation context might lead to the emergence of relevant patterns of differentiation according to various parameters.

5.3. Cognitive ideology research

In an interview with Lakoff, Roberta Pires de Olivera (2001) asked Lakoff about the idea of a cognitive sociolinguistics:

R: What about a cognitive sociolinguistics?

L: There is a cognitive sociolinguistics in existence, in my Moral Politics, in Steven Winter’s new book on law and CL, A Clearing in the Forest, in the dissertation by Pamela Morgan on political speeches, and in the dissertation by Nancy Urban on business metaphors being used to restructure education. (Pires de Olivera 2001: 43–44)
As Lakoff’s answer confirms, he identifies a cognitive sociolinguistics with ideology research. Moreover this ideology research tends to be associated with negative connotations, which is not astonishing given that ideology is often closely intertwined with power relations. According to Gärdenfors (1998) the study of power relations is an intrinsic part of Cognitive Linguistics. This trend is also dominant in most of the cognitive approaches to ideology in the twin volumes Language and Ideology edited by Dirven et al. (2001). But ideology can equally well have neutral or positive connotations as is shown by Geeraerts (2003) and by Kristiansen (2003), respectively. For this reason we will take a brief look at their research.

Geeraerts (2003) deals with the relation of language variation and linguistic standardization, which is inherently linked to political decision processes. Thus the choice of a particular language variety as the standard is an ideology-laden decision, since it can implicate associated value beliefs such as emancipation, democracy, and access to and participation in public life. In Western thought two basic cognitive models have prevailed as a means of conceiving the relation between social reality and language, i.e. a rationalist and a romantic model. The rationalist Enlightenment model views language as a neutral medium of democratic participation and emancipation, transcending geographical differences and social distinctions. The romantic model sees language as the intimate expression of a specific identity, foregoing the necessity of mediating between identities. The nineteenth century witnessed the development of an influential nationalist model that combined issues from both basic models; finally, the late twentieth century was characterized by a shift towards linguistic imperialism, the international position of English, and questions of globalization. These rationalist and romantic models still continue to be the fundamental determinants of language policies and people’s acceptance of norms or standards which shape the language attitudes of linguistic communities.

Kristiansen (2003), in strong contrast to most linguistic studies on stereotypes carried out so far, sees dialect variation and the allophones marking the stereotype as cognitive reference points in social cognition. This positive view also holds for the stereotypes associated with regional and social accents and the covert ideology encapsulated in them. Functioning as reference points in social cognition, accents allow hearers to identify the social or regional status of the speaker and to position participants in interaction. In this way phonetic variants form part of larger cognitive structures which in turn relate to social categorizations and self-categorization. Seen from a listener-oriented perspective, the hearer can be
provided with answers to essential questions such as “Where is this speaker from?” and “What is this speaker like?” This basic, cognitive need for social categorization thus in turn effects a need for dialectal variants, which cluster in a set of salient and uniquely identifying variants and are signifiers of social meaning.

5.4. Cultural cognitive models (CCMs)

As Coulson’s baseball example in section 4.1 suggests, discourse understanding is to a large extent based on the availability of cultural knowledge. Such knowledge implies that all speakers in a given society know that their experience and knowledge is shared experience and knowledge, though in different degrees so that no individual possesses all the knowledge, but that all together they constitute the knowledge and culture of the society they belong to. This cultural knowledge is represented in a number of cognitive models, which as collective models are different from the individual cognitive models we have and which are therefore called folk models, folk theories, or cultural cognitive models (CCMs), which is the term coined by Morgan (1997).

CCMs may be idealized representations of relatively smaller systems such as American baseball, or for that matter, the American constitutional model, or they may be representations of much larger cultural systems such as, for instance, cosmovision models, where the European or Western model is in strong contrast to the millennium-old Basque cosmovision model, which is much closer to Eastern or African models. We will here concentrate on two example cases illustrating, on the one hand, the continued impact of 200-year-old constitutional CCMs in present-day U.S. political strife, as analyzed by Morgan, and on the other hand, the threat of disintegration of the more than 2000-year-old Basque cosmovision CCMs under pressure of exposure to rivaling world views, as discussed by Frank.

Morgan (2001) offers ample evidence that Clinton’s impeachment debate was not a legal issue, but rather a political and cultural fight carried out by the religious and political right in an effort to remove President Clinton from office. The Republicans made “perjury” the central issue of the fight since it was the sole foundation for the accusation of Clinton’s breaking “the rule of law” and committing “obstruction of justice” and hence violating the Constitution, and liable to impeachment. However “perjury” is a graded category, as the Harvard law specialist Dershowitz claimed, with prototypical and increasingly non-prototypical members.
False statements such as those of Clinton “fall at the most marginal end of the least culpable genre of this continuum of offences” (Morgan 2001: 90). Since for extreme right-wing Republicans there was no longer a distinction between lying and perjury, a stalemate resulted. The only thing left for the Republicans to do was to call upon all the CCMs available to them and at the same time to bring into play, quoting one of the “Founders” or “Framers” of the Constitution, Alexander Hamilton: “If it were to be asked, what is the most sacred duty and the greatest source of security in a Republic? The answer would be, an inviolable respect for the Constitution and Laws” (p. 96). But since crucial concepts such as “High Crimes” and “Misdemeanors” were never defined by the “Founders” or later bodies of judges and politicians, Princeton history professor Wilentz concluded that through the impeachment of President Clinton the House Judiciary Committee’s “reputation will be darkened for as long as there are Americans who can tell the difference between the rule of law and the rule of politics” (p. 96).

In the end there wasn’t a sufficient majority in Congress who viewed President Clinton’s false statements as prototypical high crimes and misdemeanors (such as high treason or bribery), a result that reflected the views of the general American populace concerning sex and sexual relations. These CCMs define such relations as ‘private’ rather than ‘public’ ones. The use and contested interpretation of familiar American CCMs thus demarcated opposing political stances and interjected into the political debate over Clinton’s impeachment the emotionally laden values that are part of these CCMs.

In contrast with these vigorous American CCMs, the CCMs traditionally dominating Basque culture are under serious threat of erosion and possible cultural loss, as illustrated by Frank in her analysis of Basque imagery and thought. Starting from the role of the colour “black”, Frank and Susperregi (2001) point out the image-schemata which shape the overarching cultural models of Basque cosmovision. The basic qualities associated with the Basque equivalent of English black are all positive and contrast strongly with the negative connotations associated with the English and European CCM in the black sheep in a group of people. In the Basque CCM the black he-goat is the keeper and guardian-healer of all domestic animals. Black animals are life-giving and hence bring good luck. Thus, the recommendation was to have one black sheep per flock, one black rabbit per hutch, one black chicken, etc., or to have at least one black he-goat per farmstead. The central CCM is that of the black bear, who is the ancestor of humans and keeper of souls, the guardian-healer of all beings. In order to guarantee the order of the cosmos and to ensure the health of all beings, world renewal
cereemonies involving the bear ancestor and other guardian animals were or are carried out on a regular basis. As the use of the past tense in various sentences above suggests, these Basque CCMs are under threat of erosion. Frank (2003) studies shifting identities in Basque cultural models of self, whereby the influence of the general European model on a specific aspect of the Basque model is investigated. The socio-cultural identity, especially that of the younger Basque generation, appears to be increasingly affected by the European model.

The two papers thus reveal that there are not just metaphors we live by, but that these may belong to clusters of metaphors expressing the CCMs we live by (also see Kövecses 1999). Similar analyses have been offered for other cultures, e.g. for American models of gender types, the mind, marriage, anger, home heat control, etc., all in Holland and Quinn (1987), for the South African “rainbow” nation, the Western conception of the Orient, the Hong Kong ideology of evasion from responsibility, etc., in contributions to Dirven, Frank, and Ilie (2001), and for the conception of American Latinos, Nigerian political leadership and corruption, the European Union as differently viewed in Germany and Britain in Dirven, Frank, and Pütz (2003).

6. Cognitive psycholinguistics: language processing; language acquisition

The label cognitive psycholinguistics is, just like cognitive poetics, interpreted in a wider sense than the other labels, e.g. cognitive sociolinguistics, used so far. It comprises not only work by cognitive linguists, but also psycholinguistic research based on general cognitive principles. The term cognitive psycholinguistics therefore refers to experimental research geared at cognitive operations underlying the processing of language in e.g. figurative language use and in language acquisition. We will limit the discussion to these two central areas.

6.1. Language processing; image-schemas; figurative language understanding

As the volume by Hampe (in prep.) confirms, image-schemas are a central issue in CL theorizing. Gibbs and Colston (1995) have looked at ways to find evidence for their psychological reality. These authors define image-schemas as different patterns of recurring bodily experiences that emerge
throughout sensorimotor activity and from our perceptual understanding of actions and events in the world. Thus image-schemas and their transformations provide part of the foundation for thought, reasoning, and imagination. Since there had been little opportunity for research in the relatively short time since the rise of CL, Gibbs and Colston (1995) looked for empirical evidence from earlier work in psycholinguistics, cognitive psychology, and developmental psychology that is consistent with the idea that image-schemas and their transformations play important roles in human cognition. This experimental research was not originally conducted and has therefore not generally been considered in terms of the cognitive linguistic ideas on image-schemas. However, according to the authors, a large body of research can be interpreted as supporting the claim that image-schemas are indeed psychologically real and function in many aspects of how people process linguistic and non-linguistic information. Their review suggests possible ways of integrating this research with the findings on linguistic structure and meaning in Cognitive Linguistics (see also Gibbs 2005).

As to figurative language understanding, there has been a strong focus on metaphor comprehension in recent psycholinguistic research (Cacciari and Glucksberg 1994; Gibbs 1994, 2001; Glucksberg 1998) and all these studies show that people understand both literal and figurative language in much the same way. This experimental research result refutes the standard pragmatic view held by Grice (1975) and Searle (1979) that metaphor and all other figurative language are deviations from normal, literal language use. According to their view, language users first go for a literal interpretation, and if this turns out to be incompatible with the context, they try to find a figurative interpretation. But cognitive research reveals that also in literal language use, some parts are more difficult to understand than other parts, and the same holds for figurative passages. Therefore the view that figurative language understanding is more complex than literal language understanding is not borne out by recent psycholinguistic research. At least, this applies to conventional instances of metaphor, metonymy, irony, and other tropes. But what about less conventional and innovative metaphors?

Kintsch and Bowles (2002) investigate what they call ‘easy’ and ‘difficult’ metaphors. Comprehension difficulty is rated for predicative metaphors of the form \(x \text{ is a } y\), which is known as an ISA relation. Participants in the experiment first get a list with metaphoric sentences such as \(A \text{ mosquito is a vampire}\), followed by a second fill-in line \(The \text{ mosquito is a}\ --\), requiring participants to fill in their interpretation, e.g. \(The \text{ mosquito is a blood-sucker/sucks blood/is blood-sucking}\). This is an example of an easy metaphor and 48 per cent come up with a similar interpretation. In the case
of a difficult metaphor, such as *A factor is an administrator*, only 21 per cent give a similar paraphrase. This metaphor comprehension experiment was also simulated with a computational model. The model matched participants’ interpretations for both easy and difficult metaphors. When interpreting easy metaphors, both the participants and the model generated highly consistent responses. When interpreting difficult metaphors, both the participants and the model generated disparate responses. Kintsch and Bowles develop a complex mathematical vector model calculating why metaphors are easy or difficult. This has to do with the semantic distance between the source image and the target domain: *mosquito* and *vampire* are both animate, but *factor* is inanimate and *administrator* is human. While their model is quite attractive, it may well be that it runs parallel to the distinction between more conventional and more innovative metaphors. In a conventional metaphor the link between source and target has already been made for us or it is easy to make. In an innovative metaphor we have to discover a possible link just as with the difficult metaphors in the experiment. This is in line with Violi’s (2004: 216) view of memory: “memory does not primarily have a representative function to store the past, but is rather an embodied device for facilitating interactions with the environment”. Easy and conventional metaphors rely strongly on memory whereas difficult and innovative metaphors require more processing time and cause latency.

There is, however, another serious problem with this type of experiments on metaphors out of context. They do not allow participants to interpret figurative language in the wider context in which metaphors naturally occur as an event in the ongoing discourse and they are merely static objects out of any context (see Brisard 2002). One of the many experiments in which the impact of context is measured is that by Hubbell and O’Boyle (1995). They want to test Camac and Glucksberg’s (1984) notion that metaphor comprehension involves the formation of a new association between target and source (or in their terms: topic and vehicle). In a replication of Camac and Glucksberg’s experiments, participants performed a lexical decision task. This study demonstrated that well-known word pairs show a latency advantage for lexical decision over randomly assigned pairs, but that metaphorical target/source pairs drawn from apt metaphors, in which one could expect an association between source and target features, do not show such a latency advantage. The second experiment was designed to detect a possible shift in feature salience that results in the formation of a new association between target and source during metaphor comprehension. In this experiment, participants were asked to make lexical
decisions on metaphorical target/source word pairs that were preceded by a paragraph designed to induce either a metaphorical or a literal interpretation. Now many participants showed a latency advantage for target/source pairs preceded by a metaphorical context. Based on this finding, three conclusions can be drawn: (i) metaphor comprehension is a dynamic process that modifies the pre-existing similarity between target/source pairs; (ii) metaphor comprehension can very well function without first aiming at a literal interpretation; and (iii) both context and salience are extremely decisive factors in metaphor comprehension.

6.2. Language acquisition

In line with the strategy followed previously, we will discuss here two representative instances of cognitive language acquisition research.

6.2.1. A usage-based theory of acquisition

According to Tomasello (2000: 61), Langacker’s view of linguistics as a usage-based model of language (see section 5.1) also offers to psycholinguistics, for the first time, the opportunity to develop a usage-based model of language acquisition, since the usage-based model focuses on the specific communicative events in which people learn and use language. The most important contribution of a usage-based model is the insight that the psycholinguistic units with which individuals operate are determined not by theoretical fiat but by observation of actual language use in actual communicative events (Johnson et al. 2003). This data-based approach makes the usage-based model especially congenial for the analysis of children’s language, since children do not learn and use the same units as adults, but create units of their own. Tomasello employs a usage-based model of language to argue for five fundamental facts about child language acquisition. (1) The primary psycholinguistic unit of child language acquisition is the “utterance”, which has as its foundation the expression and understanding of communicative intentions. It is this recognition of communicative intentions and hence of directing attention to objects and events in the world that makes the human species unique. (2) Just as Lily Wong-Fillmore in her 1976 Ph.D. dissertation had shown for the first time for second language acquisition, Tomasello starts from the fact that native-speaking children in early language development reproduce not single adult words, but whole adult utterances,
even if they only manage to realize one or two segments of them. (3) Whereas according to Langacker’s view, adult speakers can either apply a rule schema or reproduce a single instantiation of it, e.g. a plural noun, children’s earliest utterances are claimed to be almost totally concrete in the sense that they are instantiations of item-based schemas or constructions. (4) In line with the bottom-up development of rule schemas, abstractions in child language result from children generalizing across the type variation they observe at particular “slots” in otherwise recurrent tokens of the same utterance. And, (5) if children want to say something, they may start out with a set expression they have available from their stored linguistic experience, and “cut and paste” (p. 77) it according to the needs of the current situation. Or in Tomasello’s more theoretical wording, children create novel utterances for themselves via usage-based syntactic operations in which they begin with an utterance-level schema and then modify that schema for the exigencies of the particular communicative situation (usage event) at hand. Tomasello’s conclusion from this set of principles gives rise to the hope that “cognitive functional linguistics and the study of child language acquisition [will] come together” forming a research area based on the ‘operative unit’ of language, on processes of communication, and on human linguistic competence, both in its historical and its ontogenetic development.

6.2.2. Growth of a lexical network

One researcher that seems to apply most of these principles is Sally Rice (2003), who questions the psychological validity of the cognitive-linguistic concept of (radial) lexical networks. She concentrates on the early development of multiple sense types for the English prepositions in, on, at, to, for, from, with, by, and off. Rice has charted the senses used with these prepositions on the basis of longitudinal data obtained from the CHILDES corpus10 for two English-speaking children. The reasons for the selection of these particular prepositions were their frequency, monosyllabic shape, differences in the concreteness of their locative meaning, the varying semantic transparency across a range of sense types, their differing grammatical function, and their pragmatic relevance. Correspondences and discrepancies between the prepositions are of some interest, but the main interest concerns intra-prepositional commonalities and differences between these two children. The progress of lexical acquisition by the two children calls into question the applicability of certain cognitive mechanisms such
as metaphor, metonymy, and schematization deemed to be responsible for the (uni-)directionality of semantic extension observed historically. According to classical network theory, discussed in section 3.2., these mechanisms, while not claimed to be teleological, can take a linguistic form with a concrete lexical meaning and eventually render it reduced, abstract, and highly grammaticalized in function. Such mechanisms are also assumed to have motivated lexical organization synchronically, i.e., in the adult speaker’s mental lexicon as given in lexical network models. However, the data presented by Rice suggest that each child seems to have his or her own starting point within a lexical category -one which may not be conceptually basic - with additional senses appearing in a piecemeal fashion, usually as part of a favorite fixed expression, rather than through stepwise semantic extension driven by processes such as metaphor and schematization. As in many other fields the classical cognitive-semantic model seems to be in need of re-discussion or even revision. This issue will be discussed in a wider perspective in the last section now.

7. Conclusions

This rudimentary survey of CL has revealed a number of vital facts.
First of all, Cognitive Linguistics is a burgeoning linguistic paradigm. It has not only expanded in the quantity of its publications, both monographs and collective volumes, congresses, and journals, but also in depth and quality. It has engendered fruitful internal discussions without falling apart into different factions and congregations. It is expanding into more and more linguistic sub-disciplines such as pragmatics, discourse study, poetics, sociolinguistics, and psycholinguistics. The Cognitive Linguistics research paradigm is also increasingly spreading into phonology, morphology, typology, historical semantics, grammaticalization studies, applied linguistics with language pedagogy and translation studies. And, last but not least, it has explored more and more deeply its own philosophical roots in phenomenology and its experiential and embodied postulates.
Second, there is the highly conspicuous fact of the difference between Langacker’s Cognitive Grammar and Lakoff’s Cognitive Semantics. Langacker has never had to make major changes or revisions to his theoretical framework and in this respect his scientific quest differs considerably from that of Chomsky with its many redefinitions of Generative Grammar. Furthermore, Langacker’s Cognitive Grammar proposals for the theory and description of language have elicited almost no negative responses from
other researchers working in the field of Cognitive Linguistics, neither from those outside it. In comparison with this relative stability, it is striking that Lakoff’s proposals have met with far more internal and external critiques concerning a number of his basic insights, tenets, and tools, with the result that certain changes of orientation and alliances have followed.

Third, it is also remarkable that it is especially Langacker’s basic Cognitive Grammar assumptions that have so strongly contributed to the spread of CL insights into various linguistic approaches and into various subdisciplines. Thus Langacker’s view of “domain” has been the basis for Croft’s (1993) discussion of a typically Lakovian problem, i.e. the role of domains in the interpretation of metaphors and metonymies. Langacker’s view of grammar as a usage-based model of language has found its confirmation in corpus linguistics, in cognitive sociolinguistics, and in Cognitive Psycholinguistics focusing on child language acquisition. Even in cognitive poetics, Langacker’s postulate of the unity of the form/meaning relation is the central core of Freeman’s approach to poetics. Moreover, contrary to what could be expected, theoreticians in cognitive poetics attempt and manage to go far beyond the conceptual metaphor/metonymy approach to literary texts, and to find out what constitutes the very essence of literary creation. In a certain sense it is not astonishing that for this purpose literary theory specialists have chosen to turn to Cognitive Grammar rather than to Cognitive Semantics, since in the former more than in the latter the crucial linguistic question of the phonetic/semantic unity of symbolic forms is explored. We see in fact a similar tendency in Tomasello’s language acquisition research program.

Fourth, Lakoff and Johnson have traditionally been far more ambitious (in the positive sense) in their claims about Cognitive Linguistics and the relation between language and thought. On the one hand, this has ensured them an enormous following in the areas of prototype research, metaphor research, and the study of idealized cognitive models, not only in linguistics, literary studies, and philology, but also in psychology, sociology, theology, etc. and even in medicine, nursing and psychiatry. On the other hand, this has led to major critiques of their theses in various areas. In prototype research, Rosch (1999) has come up with a complete redefinition of categories, which are no longer seen as fixed mental representations, but rather as a mediation between the mind and the world in concrete situations. In lexical semantics, as was indicated before, serious doubts are now arising about the existence and form of radial lexical networks. In metaphor theory there has been a heated debate about the invariance hypothesis. The functioning of conceptual metaphors in idiom comprehension has been ques-
tioned in psycholinguistics, e.g. by Glucksberg, Brown, and McGlone (1993).

The basicness of conceptual metaphors was shown to be imprecise (Grady 1999; Johnson 1998). CL’s exclusive claims on experientialism and experiential realism versus all other philosophies were criticized, e.g. by Bowers (1990) and Haser (2005). More particularly, Lakoff’s recent definition of embodiment (2003) has met with critical opposition from many sides. It is difficult to tell whether it is Lakoff and Johnson’s greater ambition that is the deeper cause of the various major disputes such as those by O’Donovan-Anderson (2000) or Glucksberg (2001) which their views have triggered off or whether this is due to the intrinsic quality of their formulations of the various theses. Neither must all critique be seen as negative. Thus whereas Grady (1999) shows convincingly that conceptual metaphors such as THEORIES ARE BUILDINGS consist of more elementary or ‘primary’ metaphors such as THEORIES ARE PHYSICAL STRUCTURES and PERSISTING IS REMAINING ERECT, Grady, Oakley, and Coulson (1999) summarize blending theory, succeed in differentiating it from conceptual metaphor theory, and show how the two frameworks are not contrasting but complementary.

Fifth, Cognitive Linguistics seems to be able to live in harmony with creative scholars and welcomes new, emerging strands in the fabric of the entire movement. This applies equally to construction grammar and to blending theory. In his definition of construction grammar (see section 2.2), Langacker fully recognizes the conventionalization that a number of constructions have reached so much so that they can be invoked holistically in ongoing discourse. What is clear, however, is that Langacker (This volume) rejects the existence of ‘constructional meaning’ in addition to compositional (sentence) meaning and to lexical meaning, which are the three levels of meaning claimed by Michaelis (2003). As to blending theory, Lakoff is more critical, as is evident from a statement in his 2001 interview with Jesús Sánchez (2003: 259): “…for us who are working in NTL,11 blends are real but they are just ordinary everyday phenomena. They are nothing special, no new theory is needed for them, there is no need for any theory of blending”. What Lakoff says here is that in his neural theory of language (NTL) conceptual blending is something that can be shown to be neurophysiologically real in the firing of activated neurons in the brain, and consequently this fits naturally in his neural theory of language. Therefore, no separate blending theory is said to be needed.

Sixth, there are several new directions not discussed here: cognitive phonology, cognitive morphology, applied cognitive linguistics, cognitive
work in typology, historical semantics, grammaticalization studies (Heine, Traugott), cross-cultural semantics (Wierzbicka, Goddard), and now even cognitive therapy (van Hoek). It remains to be seen how robustly these strands will develop and whether, in the process, they stay put or begin to move into wider circles of the cognitive-linguistic paradigm. Applied cognitive linguistics may be a good case in point. It is certainly generating a lot of thought on the relation between metaphor and language pedagogy, not only in the contributions to Pütz, Niemeier, Dirven (2001a, 2001b), but also in some fifty journal articles.12

But will this strand manage to go beyond this point and embrace the whole of the CL paradigm, as for instance cognitive poetics has managed to do. In fact, this may be one of the very criteria that could and should be used to judge the effective affiliation of some given strand of CL to the core business of the CL movement.

Notes

I want to thank all people who have kindly helped me either with their comments on earlier versions of this chapter or otherwise, especially Ad Foolen, Roz Frank, Francisco Ruiz de Mendoza, Birgit Smieja, and Allan Turner.


2. Cognitive Linguistics is not, like many other schools, a one-man dominated paradigm, but it is rather like an estuary with ideas coming from similar basic insights and contributing in various ways to the great sea of scientific insights. Hence the ‘stream’ metaphor would also apply but it somehow lacks the added-value notion of mutual strengthening and intertwining called up by the “strand” image.

3. I owe the insight into Talmy’s pioneering role and influence on Langacker and Lakoff to Carlo Serra-Borneto, University of Rome.

4. Psycholinguistic research (Engelkamp and Rummernb 2002; Rummer et al. 2003) confirms the psychological reality of the application of this gestalt principle to complex sentences in language: two clauses linked as main clause and subordinated clause remain better in immediate memory than coordinated clauses.

5. Within the paradigm of construction grammar there is a clear split between people like Goldberg, Michaelis, etc., who openly adhere to the ‘cognitive commitment’ (Lakoff’s term in Pires de Oliveira 2001:26) and Fillmore, Kay, etc., who, according to Lakoff, do not.

6. As Bert Peeters (2001: 90) reports, the name Cognitive Linguistics had already been claimed by Sidney Lamb in 1971.
7. Pustejovski (1995) offers an attractive attempt to reduce the so-called polysemy of words and opts for a monosemist view in his qualia theory. While this may work well for artifacts such as university or book, it cannot solve the polysemy of natural categories such as fruit, either.
8. This possibility was pointed out to me by Beate Hampe (Jena).
9. Latency is “a temporal measure of response, referring to the time delay between the occurrence of the stimulus and the onset of the response”. (Hilgard, Atkinson, and Atkinson 1979: 598)
10. CHILDES stands for Child Language Data Exchange System; see e.g. MacWhinney and Snow (1990).
11. NTL stands for Neural Theory of Language. Lakoff has been working on this for over a decade and an electronic version summarizing this work is now available from http://www.icsi.berkeley.edu/ftp/global/pub/ai/jfleldman/tech/
12. This ever growing list of publications in ACL (Applied Cognitive Linguistics) can be had from the author at rene.dirven@pandora.be

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Brothers in arms? On the relations between Cognitive and Functional Linguistics

Jan Nuyts

1. Introduction

Among the intertheoretical and interdisciplinary relations of Cognitive Linguistics (henceforth CL), its relations with more ‘traditional’ approaches within Functional Linguistics (henceforth FL) are no doubt among the most complex and maybe even the most strained ones. In many respects, the two strands are on a par, yet one also ‘senses’ differences between them – differences which are, however, hard to pinpoint at face value, both in terms of what they are, exactly, and in terms of how substantial and fundamental they are. This chapter is an attempt to reflect a bit more on this matter.

Of course, the complexity of a comparison between the two traditions is in part due to the fact that both are internally heterogeneous: since its origins CL has been rapidly growing and diversifying, but the diversity of approaches within the (much older and much wider) functional linguistic tradition is sheer endless. Hence, within the confines of one paper one can only hope to scratch the surface of just a few elements of a comparison. Rather than going for a broad and shallow survey of convergences and divergences (see Nuyts in press for such an overview), I will rather pick out a few major tendencies of divergence, thereby mainly concentrating on dimensions of grammatical analysis, and I will attempt to illustrate their import by means of an analysis of some concrete linguistic facts.

Since I am not a ‘neutral observer’, in this chapter I will not be able to, nor will I even try to, conceal my own view on grammar. I belong to the growing group of scholars who steer a midway between the two strands. I am a ‘native’ functional linguist, but I also adopt a consistent cognitive orientation (including all its methodological and analytical consequences) – i.e. what I would call a ‘cognitive-pragmatic’ or ‘cognitive-functional’ perspective (see Nuyts 1992, 2001). Consequently my approach combines assumptions and views from the two traditions, but it also differs in certain ways from both, as will become obvious in the course of this chapter.
Probably the result is a position which is not considered functional linguistic by hardcore functional linguists, but not cognitive linguistic by hardcore cognitive linguists either. Maybe this means sitting in between two chairs. But one can also think of it as an attempt to pull together two chairs and turn them into a more comfortable sofa. This chapter is also an attempt to make a case for this kind of approach.

This chapter is organized as follows: in section 2, I will make a few general observations regarding the con- and divergences between CL and FL. Section 3 will use an empirical case – ‘tense-aspect-modality’-marking, or, in more semantic terms, ‘qualifications of states of affairs’ – to illustrate one dimension of the comparison, viz. the role of abstract conceptual representation in linguistic analysis. Drawing further on the discussion in section 3, in section 4 I will spend some thoughts on another issue that (threatens to) divide(s) the two fields, viz. the ‘construction model’ vs. ‘component model’ issue.

2. Cognitive and Functional linguistics: what’s in a name?

Clearly, in terms of their basic orientation, there is little, if anything at all, in terms of radical points of opposition between CL and FL. Both accept a functionalist orientation, or a ‘usage-based approach’, to use a term fashionable in CL these days. And, to a large extent, both share the cognitive concerns as well (at least in principle – see below). Surely, FL used to be predominantly a-cognitive, and there are still many functionalists who do not care about cognition. But – no doubt also under the influence of CL – in recent years the cognitive awareness among them is rapidly increasing. And there are of course also quite a few functionalists who have explicitly adopted a cognitive perspective since a very long time, including, very prominently, Chafe (1994), Givón (1979, 2002), and Wierzbicka (1992).

The differences between the two strands arise, then, when it comes to applying this basic orientation in the concrete analysis of language. Even then the situation is not black and white: it involves tendencies rather than absolute distinctions, to which there are usually important exceptions. Moreover, there is a growing number of scholars who bridge the gap, hence blur any contrasts between the two strands (examples include Bybee 2003; Croft 2001; Heine 1993, 1997). But if, for the sake of the argument, we force ourselves in unsubtle strawman positions, then the differences clearly have to do with the dominant research foci of the two strands, as ‘coded’ in their names. The hallmark of CL is, of course, its concern with the ‘se-
mantic’ issue – with a strongly ‘cognitive’ touch – of how humans understand or conceptualize the world – i.e., how they make and represent meaning – and how the linguistic surface relates to this – i.e., how it renders conceptual categories. In FL, however, a few important exceptions (e.g., Wierzbicka 1992) aside, this specific focus is largely absent. Functionalists predominantly concentrate on the more ‘pragmatic’ issue of how language is structured in view of how it ‘externally’ functions in communication: what types of structures exist in languages, what is universal and variable in them, and how does all of this relate to the dynamics of communication, including the speaker’s intentions, the hearer’s knowledge, the discursive context, etc. The issue of the nature of the information being communicated obviously also plays a role in this, but this is often subsidiary to the concerns with linguistic structure and its interactive dynamics.5

So formulated, the differences between the two traditions are not fundamental at all: none of the foregoing makes them incommensurable. On the contrary, it makes them complementary. In principle, this means that we should ultimately manage to combine the insights from the two strands to arrive at a full-fledged account of language as a cognitive system for communication. In practice, however, the situation is probably less ideal. Adherents of either tradition can easily be led to believe that the types of issues at stake in the other field are nothing to worry about while they are concerned with their own matters. Yet, while this may be true for some linguistic phenomena, for quite many it is certainly not: all too often, to fully understand a phenomenon one needs an integrated concern with both perspectives. Even worse, some people may even forget about the other perspective, and insist that their partial analysis is the end of the story. Those people obviously run the risk to end up with a biased view of language, and with a feeling of real competition between the two fields.

One could illustrate these risks with cases from both strands. But for reasons of space, in this chapter I will make the case predominantly with regards to FL (although in section 4 I will briefly turn to an issue on the side of CL). If we translate the foregoing general remarks in more specific terms, then, one of the major problems on the side of (most of) FL is that often, in spite of the cognitive turn, it is not enough concerned with the conceptual underpinnings of grammatical phenomena. Concern with meaning representation often stops at the level of fairly shallow lexical-semantic representations, and the deeper conceptual issues behind them are all too often considered to be interesting but not crucial for a grammatical analysis per se, so that they can safely be disregarded. Yet, quite a few of the structural phenomena FL is dealing with simply keep on begging the
Jan Nuyts

question if one does not explicitly take recourse to much more abstract notions. Often functionalists do notice this problem, of course, but then, rather than looking in the right place for a solution, viz. in general principles of human conceptual knowledge and processing, they tend to stuff all kinds of concepts and notions into the types of linguistic structures they do accept in their models which clearly do not belong there. On the other hand, if functionalists would take the cognitive import of their analyses serious, they would hold the key to some important new insights into the nature of human conceptualization, thereby adding to what is done in this regards in CL. This would bring us a bit closer to more intensive interaction between the two fields.

3. Why TAM-marking is more than a linguistic issue

3.1. The issue

A good case to illustrate the point in section 2 concerns an issue very central in FL, viz. ‘tense-aspect-modality’ (TAM) marking. This notion is a cover term for all kinds of expressive devices in language which serve to modify, situate or evaluate a state of affairs a speaker is talking about. I will use the notion ‘qualification’ as a cover term to refer to the semantic dimensions involved. More specifically, my case concerns the concept of ‘layering of qualificational categories’, which is crucial to the treatment of TAM-marking in a few functional grammar theories. Let me first introduce this issue.

There is strong evidence indicating that the inventory of qualificational dimensions is not just an unordered, chaotic set. In terms of their potential extension of semantic scope – their semantic ‘reach’ – they appear to stand in a non-arbitrary, stable, and presumably universal hierarchical order. One can observe this if one combines qualificational categories in one clause. They then trigger all kinds of grammatical phenomena (e.g., word ordering effects), which I will not illustrate here. But the hierarchical relations also appear in semantic interpretation. (1) contains a small sample of combinations.

(1) a. Evidentiality and time:
   I hear Ann is coming to the party tomorrow.

   b. Epistemic modality and time:
      He will probably leave soon after lunch.
c. Deontic modality and time:
   You **should** finish that paper **tomorrow**.

d. Time and quantificational aspect:
   Your mother has called **only once last week**.

e. Quantificational and qualificational aspect:
   He **started** to cry **several times** during the celebration.

Consider, for one example, the relation between the time marker **last week** and the quantificational aspect marker **only once** in (1d). A close inspection of one’s semantic intuitions soon reveals that the time marker has the aspect marker within its reach, but not vice versa. A paraphrase can help to make this explicit: it makes perfect sense to say, *it was the case last week that your mother called only once*, but it is quite nonsensical to say *it is the case only once that your mother called last week*. The same kind of relation applies in the other cases in (1), or in any other instance one can imagine. And across instances, the relations between categories remain stable.

Note, by the way, that ‘potential scope’, or ‘reach’, is not the same thing as ‘actual scope’. In (1a), for instance, the time marker **tomorrow** is within the potential scope of the hearsay marker *I hear*, but in a normal usage context for this utterance it is not in its actual scope: the hearsay only concerns ‘Ann’s coming’ – the ‘party tomorrow’ is a given fact known to both speaker and hearer. That is, the time marker here simply situates the issue to which the hearsay marker applies. This correlates with the well-known fact that normally only focal information is within the scope of this kind of qualificational expressions.

In terms of their potential reach, then, one can assign each qualification a position in a general hierarchy, and for the qualifications illustrated in (1), this hierarchy is indicated in (2). This is a very informal rendering of the issue, the list of qualifications in it is far from exhaustive, and some of the orderings can probably be disputed. But that is not important now, what matters is the principle.

(2)  
> evidentiality  
> epistemic modality  
> deontic modality  
> time  
> quantificational aspect [frequency]  
> qualificational aspect [internal temporal constituency]  
\( \lor \) (parts of the) STATE OF AFFAIRS
A more formalized version of such a system has been introduced in Van Valin’s (1993) Role and Reference Grammar and Dik’s (1997) Functional Grammar. I will not present the details of these here. What matters is that, in line with their focus on linguistic structure, both models feature this system in syntactic structure and/or in a semantic structure which is ‘driven’ by lexical information hence remains close to linguistic structure (i.e., a lexical-semantic structure). This is probably the wrong place to deal with this phenomenon, though – if fact, this might be a perfect illustration of the points made in section1. Let me offer some evidence in support of this claim.

3.2. Qualifications as basic conceptual dimensions

First of all, a maybe fairly trivial but nevertheless telling observation: The qualificational dimensions in this system clearly constitute essential elements, not just of how we talk about the world, but of how we perceive it and act in it in general. Take epistemic modality, for an example: judging the veridicality of things is something we constantly do when interacting with the world, and it is of very fundamental importance for the survival and functioning of an organism in its environment. E.g., when we cross the street, we normally (maybe unconsciously) judge the chances that cars will get to us before reaching the other side. Or, when a teenager decides to enter some educational program, she better does so (among others) on the basis of an estimation of the chances that cars will get to her before she will get to the other side. Or, when a teenager decides to enter some educational program, she better does so (among others) on the basis of an estimation of the chances that cars will get to her before she will get to the other side. Decision making in general is quite systematically based on probabilistic reasoning. That determining time and space is crucial to practically all our actions (in planning and in execution) will be self-obvious. Probably the same goes for all other categories in the system. This strongly suggests, then, that these categories (at least) are part, not (only) of linguistic cognition, but of a much more general and basic level of cognitive functioning, which serves all action and perception.

3.3. Semantic paradigms and the nature of conceptual knowledge

The observation in 2.2 is clearly supported by a purely ‘linguistic’ argument. It is based on the fact that in many (if not all) languages, most or all qualificational categories can be expressed by means of a range of expressive de-
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vices belonging to different ‘parts of speech’. Let’s call such a range of alter-
native expressions for one category a ‘semantic paradigm’. (3) lists some
of the alternatives in English for the three highest qualifications in (2).8

(3) **evidential:** the nature of the source of information or the evidence
for a state of affairs
- adverbial: seemingly, apparently, clearly, obviously, sup-
posedly, allegedly, ...
- adjectival: it is apparent, clear, obvious, ...
- auxiliary (like): seem, appear, must, ...
- verbal: gather, figure, guess, suppose, hear, have been
told, ...

**epistemic:** the degree of likelihood of a state of affairs
- adverbial: maybe, probably, certainly, surely, ...
- adjectival: it is possible, probable, certain, I am sure, ...
- auxiliary: may, might, could, will, ...
- verbal: think, believe, doubt, ...

**deontic:** the degree of moral acceptability or desirability of a state
of affairs
- adverbial: luckily, (un)fortunately, hopefully, better, ...
- adjectival: it is good, fortunate, necessary, advisable, com-
pulsory, ...
- auxiliary: may, must, should, have to, can, ...
- verbal: hope, deplore, regret, insist, allow, ...

Obviously, the alternatives in such a paradigm are not mere synonyms: a
speaker’s choice among them is triggered by a number of functional di-
mensions pertaining to the communicative circumstances – i.e., the alter-
natives offer different construals of the same basic semantic category.
Thus, empirical research (reported in detail in Nuyts 2001) has revealed
that for the epistemic category, and probably also for the deontic and evi-
dential categories, these functional factors include (among others):

- the conceptual status of the qualification: is it performative or descrip-
tive, i.e., is the speaker committed to it or not? (see section 3.4);
- the interactive status of the qualification: is it subjective or intersubjec-
tive, i.e. does the speaker assume personal responsibility or shared re-
ponsibility for it?;9
- the informational status of the qualification in the discourse: is it focal
or not?
These different factors are then also responsible for many of the grammatical properties of these alternative expression forms – see Nuyts (2001) for an analysis. It is an educated guess that the situation is comparable for the alternative expressions of the qualifications lower in the system, although the functional factors at stake will certainly differ in certain ways, corresponding to the different nature of the semantic categories themselves.

How do these observations offer support for the assumption that the qualificational categories are not (only) linguistic, but conceptual? Here is the (very simple) argument. In terms of a process perspective (specifically, a production perspective), since the alternatives in a semantic paradigm all involve the same core qualificational notion, they must unavoidably all have their cognitive origins in one and the same semantic core level at which the qualification is ‘conceived’ by the speaker. Claiming otherwise would mean giving up meaning as a coherent cognitive category. When expressing a qualification, then, a speaker works his way from this level to a linguistic form via procedures sensitive to the relevant functional factors. Now, the major expression types in (3) are lexically basic, hence basic in terms of linguistic representation and processing. Hence they cannot be productively derived from each other in the course of language production. For if one were to take one of them as the core form, one would have to invoke radical lexical exchanges and syntactic transformations to arrive at one of the alternative forms. No one in present day linguistics and language psychology would consider such operations theoretically plausible. But then, the conclusion must be that the level at which the qualification is conceived must be prior to the level at which lexical structure is introduced, hence must be more abstract than any of the kinds of representations accepted in the functionalist models mentioned above. Or, in other words, it must involve a non-verbal conceptual level.

This reasoning then at once allows us to draw some interesting conclusions about the nature of conceptualization. As indicated, it must be non-verbal, and even more drastically so than might appear at first sight (see also Nuyts 2001). First, note that the argument developed above is not restricted to qualificational categories. Semantic paradigms are also pervasive in the range of expressions describing elements of the ‘object world’. A ‘classical’ case is the commercial event frame discussed by Fillmore (1977, 1985; see also Kay 1996). This conceptual domain can be expressed by means of a range of verbs, each with its specific argument pattern (Fillmore 1977: 103), including: A buy B (from D for C); D sell B (to A for C); A pay C (to D for B); A spend C (on/for B); D charge A C (for B); B cost (A) C; D price B at C (whereby A and D are human subjects, B is the object of
transaction, and C is (usually) money). As Fillmore (1977: 105) points out, all these alternatives essentially go back to one and the same scene (informally) rendered in (4), and they differ in terms of how they perspectivize the latter (probably due to factors such as information structure).

(4)

Other examples of semantic paradigms pertaining to the ‘object world’ include *give/get, send/receive, employ/work for, rent/let*, etc. Clearly, the argument developed above for the qualificational paradigms is fully applicable for these, too, hence the conceptual scenes at stake cannot have the format of the lexical elements figuring in their semantic paradigm.

The argument is drastic, then, in that it not only militates against radical linguistic concepts of conceptualization (such as Dik’s 1987), but even against certain more abstract propositional models of conceptualization, such as Jackendoff’s (1990). Although Jackendoff’s conceptual representations (CRs) are non-linguistic, he still assumes that syntactic and conceptual structure cannot be too far apart if there are to be systematic correspondences between them. (5) shows the CRs of some of the verbs expressing the commercial event scene in (4) (Jackendoff 1990: 191).
These representations do capture the intuition that these predicates all invoke the entire commercial exchange, i.e., both the transfer of goods and the countertransfer of money, with the participants in alternative roles, even if only part of this cluster is actually made explicit in the expression. The cluster is represented differently in the CR of each predicate, however, depending on what is realized syntactically. For example, in buy the transfer of goods is the syntactic core, so its conceptual structure codes the transfer as the main conceptual ‘clause’, and the countertransfer of money is embedded in a modifying conceptual clause marked by a ‘subordinating function’ called ‘exchange’. But in pay the countertransfer is syntactically central, so in its conceptual structure the two events switch positions. So, although Jackendoff’s representations clearly come close to revealing what is conceptually shared by the alternative expressions, his conceptual semantics still does not offer a level to directly represent what they share, as such.

(5)

a. buy

\[
\text{GO}_{\text{Pass}} \left( \left[ \text{FROM } [\alpha] \right] \right), \left[ \text{TO } [\beta] \right] \right) \]

\[
\text{EXCH} \left[ \text{GO}_{\text{Pass}} \left( \left[ \text{MONEY} \right] \right) \left[ \text{FROM } [\alpha] \right] \right] \right) \]

b. sell

\[
\text{GO}_{\text{Pass}} \left( \left[ \text{FROM } [\alpha] \right] \right), \left[ \text{TO } [\beta] \right] \right) \]

\[
\text{EXCH} \left[ \text{GO}_{\text{Pass}} \left( \left[ \text{MONEY} \right] \right) \left[ \text{FROM } [\beta] \right] \right] \right) \]

c. pay

\[
\text{GO}_{\text{Pass}} \left( [\text{MONEY}], \left[ \text{FROM } [\alpha] \right] \right), \left[ \text{TO } [\beta] \right] \right) \]

\[
\text{EXCH} \left[ \text{GO}_{\text{Pass}} \left( \left[ \text{MONEY} \right] \right) \left[ \text{FROM } [\beta] \right] \right] \right) \]
Although space prevents me from demonstrating this in detail here, the argument actually also applies to the type of decompositional semantic representation adopted in Role and Reference Grammar. This is obviously significant in view of the claim formulated at the end of section 3.1.

One might consider the foregoing to be an argument for a vision based imagery type of conceptual representation (such as Jackendoff’s 1987 3D-structures). But it is not. For there is obviously nothing visual or image-like to, e.g., an epistemic qualification: likelihood is never inherent to or an object of visual or any other type of perception, so imagery representation is completely unsuited to render it. But it is even unsuited for a conceptual domain pertaining to the ‘object world’ such as the commercial event scene. First, one’s understanding of the latter contains plenty of elements which go beyond visual perception. The actual transfer of objects and coins or bills of money between subjects is visual, of course, but the notion of possession, or of money as a cultural institution, e.g., obviously are not. Second, the physical acts involved in the commercial event scene can be extremely variable: payment can be via a bank transfer or credit card instead of cash, one can trade for natural goods, or buy through a mail order company, etc. The commercial event as such is not captured by any of these physical realizations in particular. Third, some of those physical realizations are equivocal as to their status: the difference between buying and renting something may involve exactly the same physical activities, yet they clearly differ on the issue of possession. And exchanging goods as a trading act may look exactly the same as the mutual returning of objects which the interactants had borrowed from each other, but the latter is clearly not an instance of the commercial event. The conclusion is that we are pushed into assuming a more abstract type of conceptual representation, which is neither vision based nor language based.

There are many more interesting consequences emerging from this discussion. It obviously offers a clear argument against any simplistic or radical version of the Sapir/Whorf hypothesis (although they do not imply a universalistic concept of conceptualization, contrary to what might appear at first sight – in fact, there are many good reasons to assume that conceptualization is not universal, cf. Nuys 2001). But it also suggests a distinction between conceptual and linguistic semantics, pace what is commonly assumed in CL (e.g., in Langacker 1987). That is, one probably needs to distinguish between a level of ‘thinking for speaking’ (to use a term coined by Slobin 1996), which involves temporary (short term) language related semantic representations formed in the course of the process of language production and interpretation, and a level of ‘thinking in general’, which
involves long term non-linguistic representations of world knowledge (see Nuyts 2002 for discussion). Unfortunately, I cannot explore these matters any further here (see also Levinson 1997 on these), for now we need to get back to the issue of the cognitive status of layering.

3.4. Why the layered system must be conceptual, too

The discussion so far only offers arguments for considering the individual qualificational categories as non-linguistic conceptual notions. But what about the layered system in (2) as a whole? Obviously, if the individual dimensions in this system are conceptual, then it is only natural to assume the same for the system as a whole. There is, again, a linguistic observation which offers support for this assumption, and which even hints at what the hierarchy might stand for in conceptual terms. It has to do with the combinability of the qualifications listed in (3) above, i.e. the three highest ones in the system in (2). As the examples in (1) indicate, most qualificational categories can be combined quite easily and freely in one clause. But this is not really true for those in (3): it is very hard to get combinations of these in one clause in which both are performative. As already briefly indicated in section 3.3, in performative qualificational expressions – which are the ‘default’ – the speaker is personally committed to the qualification, i.e. she expresses her own evaluation of the state of affairs at the time of speech. This contrasts with descriptive qualificational expressions, in which the speaker is not committed to the qualification: she then only renders someone else’s, or her own but former evaluation of the state of affairs, or she simply throws up a hypothetical evaluation, but she does not take responsibility for it at the moment of speaking.\(^{10}\)

In general, intuitions regarding the semantic categories in (3) are fairly unreliable. But an investigation reported elsewhere (Nuyts 2004), of some 100 conceivable combinations of lemmas with these meanings in one clause in more than 6 million words of spoken and written corpus data in Dutch, reveals, first of all, that such combinations are overall rare. Thus, nearly 75% of the conceivable combinations simply do not show up, and the numbers of instances of the combinations that do show up are usually very small. Or, from another perspective, on a total of 621 epistemic expressions in one subpart of the corpus, only 3.2% also have a deontic form in the same clause, and only 1.3% also have an evidential form in the same clause. And there are no cases with all three categories in one clause.
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In those combinations that do occur, 2 types of cases turn up. In the most common type, only one of the expressions is used performatively, while the other one is descriptive. (6) offers some examples which mirror cases in the Dutch data. For instance, in (6a), the epistemic form *may* is performative, it does involve speaker commitment. But the deontic form *have to* is descriptive: the speaker is not obliging the hearer to pay a fine, he is rather speculating about an obligation which someone else may impose. A similar situation applies in the other cases.

(6) a. You *may have to* pay a fine.  
   [epistemic + deontic]

   b. The three of them *probably have to* appear in court.  
   [epistemic + deontic]

   c. This *possibly seems* paradoxical.  
   [evidential + epistemic]

   d. He *apparently* considers it *unlikely* that this will happen.  
   [evidential + epistemic]

   e. *Apparently* they *may* not do that anymore.  
   [evidential + deontic]

In the other type of case in the data, which only occurs with a few specific lemmas, but then frequently with those, one of the two expressions does not have its normal deontic, epistemic or evidential meaning, but a derived meaning or use, it serving as a modifier of the other expression, or as a discourse marker, or as a speech act modifier (e.g., a politeness marker). For reasons of space I will present just one example, viz. the one in (7a).

(7) a. *Het lijkt* (me) *waarschijnlijk* dat ze naar die vergadering zullen gaan.  
   ‘It seems likely/probable (to me) that they will go to that meeting’.

   b. *Het schijnt/blijkt* *waarschijnlijk* dat ze naar die vergadering zullen gaan.  
   ‘It appears likely/probable that they will go to that meeting’.

   c. *Het is schijnbaar/lijkbaar* *waarschijnlijk* dat ze naar die vergadering zullen gaan.  
   ‘It is seemingly/apparently likely/probable that they will go to that meeting’.
The combination in (7a), featuring the auxiliary-like ‘inferential’ predicate *lijken/seem* and the epistemic adjective *waarschijnlijk/likely/probable* (but the pattern also occurs with other epistemic and also with deontic adjectives), occurs frequently in the Dutch data and also ‘feels’ very normal, not only in Dutch but also in English. Neither of the expressions in this combination can be called descriptive. Even in minimal variants of this pattern, however, such as those in (7b) with an alternative auxiliary-like evidential predicate, and in (7c), with an ‘equivalent’ evidential adverb replacing the auxiliary-like predicate, the situation changes: the Dutch variants at least do not occur in the data at all, and to the extent that one can imagine a context in which these alternatives are usable at all, the evidential predicate or adverb is performative, but the epistemic adjective turns descriptive. (7a) is ‘special’, then, in that a speaker using it is, overall, making an epistemic evaluation of the state of affairs, but not an evidential one. It looks like the ‘evidential’ predicate is not evidential in (7a), but actually serves another function, viz. as a ‘subjectivizer’ of the epistemic expression. This may sound ad hoc but it is not if viewed in the context of the functional profile of the epistemic expressions (cf. Nuyts 2001). In terms of the functional dimensions at work in the epistemic paradigm (see section 3.3), the adjectival pattern is specialized in focalized expressions of the epistemic qualification. But in its default pattern of the type *it is probable that* it also carries intersubjectivity, due to its syntax. Hence the pattern in (7a) offers a subjective alternative which can nevertheless still be focalized. In further support of this assumption, note that this subjective variant readily takes the additional subjectifier *me/to me*, which in fact also appears in 75% of the Dutch corpus cases. The default intersubjective pattern however hardly allows this subjectifier, and there are in fact no instances of it in the Dutch data.

One final observation, beyond the corpus data. If one tries to construe additional combinations of the qualifications at stake, it turns out that many of them simply sound awkward – though clearly not for any syntactic reasons, they are simply semantically odd. (8) contains a sample of such cases.

(8)  a. ??It is probable that he fortunately went to that meeting. [epistemic + deontic]
    b. ??Unfortunately he certainly went to that meeting. [epistemic + deontic]
    c. ??Apparently they have probably gone to that meeting. [evidential + epistemic]
d. ??It turns out that they certainly have gone to that meeting.
   [evidential + epistemic]
e. ??It appears they will have gone to that meeting.
   [evidential + epistemic]
f. ??Apparently they hopefully went to the meeting.
   [evidential + deontic]
g. ??It appears that fortunately they went to the meeting.
   [evidential + deontic]

So, the question is why straightforward cases of combinations of a performative deontic, epistemic and evidential expression in one clause should be so hard to find. Is there a logical incompatibility between performative versions of these three qualificational categories? It is hard to see why there should be one. In abstract terms, what should there be incompatible to, say, having received information from someone and having a certain degree of certainty about that information, i.e. a combination of hearsay evidentiality and epistemic modality? Or to inferring something from evidence with an accompanying attitude that that ‘something’ is desirable, i.e. a combination of inferential evidentiality and deontic modality? Or to considering some state of affairs more or less likely while also considering it more or less desirable? In fact, one can perfectly imagine examples of the kind in (9), in which one state of affairs is performatively qualified in terms of two different dimensions, but then in two successive clauses, which, if one imagines them in real conversation, would typically be separated by a pause (cases with precisely those characteristics actually do occur in the corpus data).

(9)  a. He’d better go to that meeting – And he probably will.
    b. Since he’s concerned he’ll probably go to that meeting – In fact, I’ve been told he will.
    c. I hear he’ll come to the meeting after all – Well, he damned ought to.

Under such conditions, then, performative deontic, epistemic and evidential evaluations do not appear incompatible at all.

But how can we explain the non-occurrence of such combinations in one clause, then? It is hard to see how one could handle this in a non-ad hoc way in terms of mechanisms normally assumed in functional grammar models, be it in a syntactic type of representation, or be it in a lexical-semantic kind of representation. But if we do assume that the system in (2)
is not linguistic, but conceptual in nature, we possibly can find an answer, as follows.

First note that, although the hierarchy is developed on the basis of linguistic observations, one can detect much more fundamental, general cognitive principles behind it. Thus, climbing up the hierarchy clearly involves a gradual widening of the perspective on the state of affairs. The cline develops from, at the lower end, assessments which are restricted to clarifying or further specifying aspects internal to the state of affairs to, at the higher end, meta-operations which assess in very abstract terms the status of the state of affairs. Corresponding to this, assessing the qualifications lower in the system requires no or hardly any information other than the knowledge of the state of affairs itself, while the qualifications higher in the system are exclusively based on information external to the state of affairs proper. Still corresponding to this, but even more basically, the hierarchy also reflects the tension in cognition between perception and singularity, and interpretation and generalization. Climbing up the system in a way involves a decreasing role of direct perception of, and an increasing role for interpretation and creative involvement regarding the state of affairs on the part of the subject. To make this more concrete, let’s look at a few qualifications in the system in (2) in these terms.

At the bottom of the hierarchy, qualificational aspect – also called phasal aspect, covering categories such as (im)perfective, ingressive, progressive, egressive, etc. – involves a specification of the internal constitution of the state of affairs. Making this kind of assessment in principle only requires the immediate perception (real or fictive) of the state of affairs and of its state of deployment, it requires no or hardly any knowledge or information beyond the state of affairs. And there is fairly little room for personal interpretation in these terms.

One step higher, quantificational aspect – covering categories to do with the ‘frequency’ of the state of affairs: semelfactive, iterative, habitual, generic, etc. – already requires repeated perceptions of states of affairs and the detection of similarities between them in order to assess a type behind the tokens, which can then be quantified, or which, in the case of genericity, can be granted the status of a ‘law’. This obviously leaves some room for interpretation. Still, little information is required beyond the memory of the relevant states of affairs.

Yet one step higher, time involves an assessment of the relation between the state of affairs and a complex set of other facts about the world, and more specifically about the cycles of the sun and the moon, and about patterns and subpatterns in them. Because of their systematicity, these patterns
are strongly subject to culturally defined conventionalized generalization, among others in terms of the ‘clock’ and ‘calendars’. Nevertheless, there is a fair amount of flexibility in how a speaking subject can handle the situation of a state of affairs in these terms.

If we jump to epistemic modality, then, making an assessment in these terms does not involve any perception of the state of affairs anymore. For, obviously, if there is direct perception, there is no need for an epistemic judgment. An epistemic evaluation is purely a matter of relating and comparing other bits and pieces of information about the world – including concrete percepts, but also abstract generalizations about the ‘logic’ presumably at work in the world – in order to achieve an estimation of the chances that some purely hypothetical state of affairs applies in the world or not. This kind of assessment is obviously much less based on conventionalized patterns of information than situation in time is, because there is much more variability – in fact, in principle an endless variability – in the kinds of information which play a role in it. And correspondingly there is, of course, even more room for interpretation on the part of the speaking subject.

An important element to explain our puzzling observations, then, is the fact that, in terms of the basic principles behind this cline, there is a qualitative jump between time and deontic modality. From deontic modality onwards, the personal involvement of the speaker suddenly becomes a predominant factor. In fact, the three qualificational categories involved in our combinability problem – and precisely those three, as opposed to all lower ones in the system – explicitly and directly pertain to the issue of the commitment of the speaker to the state of affairs, each in a different way. This is obvious for epistemic and deontic modality: deontic modality explicates the degree of the speaker’s moral commitment to a state of affairs, epistemic modality explicates the degree of the speaker’s existential commitment to the state of affairs. The ‘committing’ nature of evidentiality may seem less obvious. For in a way evidentiality merely involves a characterization of the nature of the source for one’s information about a state of affairs. Yet, the crucial point of an evidential is that it brings the nature of the source to bear on the state of affairs. And by the very fact that it does so, it signals that the state of affairs is not self-obvious, and it reveals how or why or whether the speaker might be committed at all to the state of affairs. Lower level qualifications, however, are not about types and degrees of speaker commitment to the state of affairs anymore. For example, it makes little sense to say that the temporal adverb yesterday in John went to that party yesterday explicates a kind or degree of speaker commitment
to ‘John’s going to the party’. Time marking situates the state of affairs, but it in no way affects the speaker’s commitment to it. In other words: while evidentiality, epistemic modality and deontic modality, each in its own way, concern the questionability of the state of affairs, this is not true anymore for time marking and other qualificational categories lower in the system.

It is not surprising, then, that precisely these dimensions, but not the lower ones, also feature a structural distinction between performative and descriptive uses of expressions, that is, uses with versus without speaker commitment to the qualification itself: if one is talking about commitments to states of affairs, it is important to be able to distinguish between one’s own commitments and other people’s commitments. Nor is it surprising that precisely these, but no lower qualifications feature a structural distinction between subjective and intersubjective forms: ‘opinions’ are typically things one does or does not share with others.

In this perspective, then, the absence of combinations of performative deontic, epistemic and evidential expressions in one clause can be restated as an observation that normally a speaker is not concerned with the question of her commitment to a state of affairs in several different ways at the same time. This obviously reminds of Givón’s (1984/1990) and Chafe’s (1994) observation that – in the range of information about states of affairs proper – speakers will usually only formulate one new idea per clause. Now we also have a ‘one commitment per clause constraint’. And the ‘cause’ for this constraint, then, might be similar to that for the ‘one new idea per clause constraint’: In terms of the above discussion of the cognitive rational behind the hierarchy in (2), the three attitudinal qualifications are obviously by far the most complex ones in terms of the amount and the complexity of the cognitive processing they require (even more so than might appear from the above discussion alone, actually – see Nuyts 2004). Hence, the fact that one does not find combinations of them in one informational unit may actually be due to limitations on the processing capacity of our central processor. No need, then, to stipulate any kind of restrictions on the combinability of expression forms for these categories at any level in the grammar. For under normal circumstances such combinations will simply not be issued by the conceptual system, and so the grammar will not be triggered into producing them. Of course, as soon as enough time is available, one can express (in succession) different attitudes towards a state of affairs, whence the fact that one does find cases of the kind in (9).

Whatever the further details of the explanation, it will be clear by now that accounting for the behavior of qualificational expressions – in this
case: their combinability – requires recourse to concepts and notions pertaining to the status of the qualificational hierarchy as a whole which can hardly be assumed to belong at a lexical-semantic, let alone a syntactic level in a functional grammar theory. Clearly, the hierarchy in (2) must belong, in one or another way, at a conceptual level in general, non-linguistic cognition.

3.5. Why the layered system is not linguistic at all

Of course, nothing in the foregoing demonstrates yet that there cannot be some variant of the hierarchical system in (2) in linguistic representation as well. In other words, one could still assume that such a system, maybe in a different format, is present both in the conceptual and the linguistic systems in cognition. Yet, assuming this potentially means accepting a considerable amount of redundancy in human cognition, and this goes against the idea that cognition operates according to a principle of economy. So one needs very strong arguments to motivate such a duplication of information, e.g. in terms of it serving different functions in the different systems. But it is hard to imagine what those arguments could be. On the contrary, there is, again, an empirical argument against such a view, viz. the fact that conceptual qualifications can have a quite variable effect in different linguistic expression types, within any one language and, interlinguistically, between closely related languages such as Dutch, German and English. Here are two very brief illustrations, both featuring epistemic modality.

(i) Scalarity and polarity

Conceptually, evaluating the likelihood of a state of affairs probably involves the scale in (10).

(10) certainly real probable undecided improbable certainly not real

+ < ——————————?——————————— > –

This scale involves a polar dimension – positive or negative – and a scalar dimension – the degree of likelihood – but both are elements of the same qualificational category. In linguistic expression, however, the polar and scalar dimensions of the qualification can either be expressed jointly in one
form, or they can be expressed separately, by means of a negative (or, more rarely, a positive) marker for the polar and an epistemic marker for the scalar dimension. (The choice between these options is a matter of information structure – see Nuyts 2001). Now the alternative epistemic expression types listed in (3) above offer different possibilities in this regards, and these even vary between Dutch, German and English. Thus, the adjectival and verbal forms in these languages allow both strategies: (11a) and (12a) involve an integrated expression, (11b) and (12b) a separated expression.

(11) a. It is improbable that the butler killed her.
   b. It is probable that the butler did not kill her.

(12) a. I doubt that the butler killed her.
   b. I think the butler did not kill her.

But the adverbial and grammatical forms in them do not allow an integrated expression, since there are no negative modal adverbs or epistemic auxiliaries. There is, for example, no such thing as improbably. So only (13) is possible.

(13) a. The butler probably did not kill her.
   b. The butler may well not have killed her.

Some Dutch and German modals are moreover more restrictive regarding their combinability even with a separate negative marker than the English modals, or than the adverbs in these languages, as shown in (14). Zullen and werden, like English will, do allow an epistemic reading when combined with negation in the same clause – cf. (14a). But, unlike English may, können and können normally do not: they then only allow a dynamic ‘situational impossibility’ reading (cf. Nuyts 2005) – cf. (14b). But there is an exception to the latter, viz. when they are used in a complementing pattern, and with the negation in the subordinate clause – cf. (14c). (The reasons for this may again be information-structural – see Nuyts 2001: 217).

(14) a. De butler zal het wel niet gedaan hebben – Der Butler wird es wohl nicht getan haben.
   ‘The butler will not have done it’ [epistemic reading possible]
   b. De butler kan het niet gedaan hebben – Der Butler kann es nicht getan haben.
   ‘The butler cannot (= may not) have done it’ [no epistemic reading]
c. Het kan zijn dat de butler het niet gedaan heeft – Es kann sein, daß der Butler es nicht getan hat.
   ‘It may be that the butler did not do it’ [only epistemic reading]

Yet another difference between these languages is that Dutch and German do allow a split expression of a positive polar evaluation, more or less like the split expression of a negative evaluation, but English does not allow such a split expression of a positive polar evaluation as easily, since it does not have a positive polar particle (wel and wohl in Dutch and German). It can only use a strategy such as special stress on the finite verb.

(ii) Epistemic modality and time

In this combination the performativity issue is critical again. The definition of the latter – speaker commitment at the time of speech – implies that performative epistemic evaluations are beyond temporal qualification. Descriptive ones, however, are per definition within the scope of time. In fact, these two ‘modes’ require a different status in terms of the hierarchy in (2), corresponding to their different conceptual status: only performative expressions reflect the qualifications in the conceptual hierarchy in (2) (hence epistemic modality is higher than time in (2)), descriptive qualifications are (in strongly simplified terms) essentially part of the state of affairs talked about, at the bottom of the hierarchy.

If one combines epistemic and temporal expressions in one utterance, then, different things can happen depending on which expression types one uses and how one combines them. Let me illustrate this for one subpart of this complex problem domain, viz. the use of grammatical past tense in combination with different epistemic expression types. As shown in (15), in combinations of an epistemic adverb and past tense on the predicate, the tense marking leaves the adverb unaffected and is semantically within its scope.

(15) The butler probably killed her yesterday.

The same applies in predicative epistemic expressions, as long as the past tense marker does not syntactically apply to the epistemic expression, as can be seen in (16).

(16) a. It is probable that the butler killed her yesterday.
    b. I think that the butler killed her yesterday.
If the tense marker does syntactically affect an epistemic expression, however, different things can happen. In the case of a predicative adjective, the past tense unavoidably turns it descriptive, i.e. it situates the epistemic evaluation somewhere in the past – cf. (17). The tense form thus remains a time marker, and the epistemic form shifts in conceptual status.

(17) It seemed likely that the butler had killed her.

With an epistemic mental state predicate the situation is different, however. Consider (18).

(18) a. *Ik dacht dat de butler haar vermoord had/heet.*
   ‘I thought the butler had/has killed her’.
   b. I used to think that ...
   c. I presently tend to think that ...
   d. Ich glaubte, der Butler hätte den Mord begangen.

In Dutch (18a), the past tense can do two things. Either it makes the predicate descriptive, triggering the meaning in (18b). I.e., like in (17) it situates the epistemic evaluation in the past. Alternatively, the past tense can weaken the epistemic evaluation, as compared to the present tense form, i.e. the meaning in (18c). In this case, the conceptual status of the epistemic form – its performativity – remains unaltered, but the tense form no longer expresses time, but contributes to the epistemic meaning. However, this latter reading is less obvious for the English variant of (18a) (cf. the translation). And it is simply impossible in the German counterpart in (18d), which can only express a past evaluation, i.e. the meaning in (18b).

In the modals, however, English even strongly prefers the weakening interpretation of past tense: an interpretation of (19b) as the past of (19a) is very marginal, if possible at all, and an interpretation as a weaker variant of (19a) is clearly the standard. But in Dutch and German, past tense on the modals cannot be interpreted this way, as it makes an epistemic reading impossible. Thus, unlike (20a), (20b) cannot be interpreted epistemically, not even descriptively. Instead it expresses a past dynamic qualification of ‘situational possibility’.

(19) a. He may have killed her.
   b. He might have killed her.
(20) a. *Hij kan haar vermoord hebben – Er kann sie ermordet haben.*
   ‘He may have killed her’.
   b. *Hij kon haar vermoorden – Er konnte sie ermorden.*
   ‘He could kill her’ [no epistemic reading]

For all three languages, this automatically means, then, that (unlike in the
adverbial domain, e.g.) if one wants to express the conceptual categories of
(performative) epistemic modality and past time jointly by grammatical
means, one cannot do this directly, by means of the forms normally associ-
ated with these conceptual categories, viz. a modal auxiliary and tense marking.
As demonstrated in (20a), one can only do this indirectly, viz. by combining
a modal with a perfect aspect marker, which implies pastness of course.

These two brief cases go to demonstrate, then, that a simple qualifica-
tional concept or relation between concepts in the system in (2) is typically
matched by a quite variable situation in linguistic structure, involving dif-
ferent possibilities offered by alternative expression types within a single
language and by the same expression types in closely related languages. In
other words, different linguistic expression types behave quite differently
with regards to the same semantic notion or relation between notions. As
such, this observation should not come as a surprise: it is a trivial linguistic
fact that different parts of speech generally have quite different structural
properties. For example, the ordering of grammatical markers relative to
the verb, both in strongly affixing languages and in languages using auxil-
riaries, is quite rigid, while the relative positioning of adverbials is far from
strict in many languages. In this vein, it is only normal that different quali-
ficational expression types also ‘do quite different things’ with the same
conceptual categories, in terms of allowing different distinctions, repre-
senting different categories, allowing different combinations, etc., for
functional and even purely structural reasons which are quite independent
of the conceptual qualifications themselves. The observation is meaningful,
however, in that it implies that, unlike at the conceptual level, at the lin-
guistic level it is simply impossible to specify one coherent system for the
behavior of qualificational expressions of the kind in (2). Each expression
type requires its own peculiar account, and this actually involves no more
than a specification of the structural characteristics and behavior of forms,
including the procedures for combining and ordering them. Of course, the
properties and behavior of the different expression types (in isolation and
in combinations) are nevertheless to a considerable extent motivated by,
therefore crucially require reference to, a uniform hierarchical system of the
kind in (2). But the way to deal with this is to refer to the procedural links between forms in the linguistic system and the semantic hierarchy at the conceptual level, rather than to duplicate the semantic hierarchy in syntax.

So, in sum, it looks like a system of layering such as in (2) is uniquely conceptual, and does not belong in linguistic representation (of any kind) at all. Semantic layering clearly does have enormous consequences for grammar (as traditionally defined, i.e. covering all processes and structures related to lexical elements of a language and their combination). But nevertheless, grammatical (lexical and syntactic) representations as such are probably not layered in this sense, but ‘flat’. And that corresponds perfectly to the functional role of grammar, viz. to linearize conceptual information, which is no doubt multi-dimensional, in view of its communication through an essentially one-dimensional articulatory pattern. To put it squarely, in linguistic structure layering is everywhere and nowhere, and as such it would seem an excellent example of an ‘emergent’ domain of grammar, more or less in Hopper’s (1998) sense. But, of course, precisely that fact underscores in yet another way the point of section 2, that one cannot understand what happens in grammar without actively referring to the conceptual systems, and to the dynamics of the procedural mapping relations between them.

4. ‘Construction models’ versus ‘component models’

In section 3, I hope to have demonstrated that the current treatment of the phenomenon of ‘layering of qualificational categories’ in a few functional grammar theories is insufficient or even mistaken (it leading to constructions in the grammar which do not belong there at all), and that an adequate account of the matter requires recourse to a perspective central in CL, viz. that on the role of conceptualization in language use. The arguments developed in the previous section have implicitly touched upon another difference between CL and FL, however, one in which the present analysis has fully remained on the functionalist side, obviously because of the conviction that FL is taking a correct stance in this connection, also from a cognitive perspective. This concerns the distinction between two basic types of grammar models, viz. what Croft (2001) calls ‘componential models’ and ‘construction models’. In the former, different types of representations – such as the lexical-semantic and the syntactic – are contained in different components, which are connected by ‘linking mechanisms’ of some kind. The latter type of model consists of a network of constructions involving
symbolic units, that is, pairings of form patterns (of different complexity, up to the level of the full clause) and their meanings. This contrast was actually already forecast in Langacker’s (1987) rejection of a ‘process concept’ in favor of a ‘construction network concept’ of grammar. Clearly, according to this classification, the model implicit in the discussion in section 3, along with most functionalist theories, belongs into the ‘component model’ or ‘process model’ category, while CL has by and large embraced the constructionist concept of a grammar. The question is, then, what this difference actually stands for. Is it, again (cf. section 2), just a matter of different accents or perspectives? Or does this constitute a real and substantial theoretical difference? At least in the way Croft (and Langacker) has/have formulated the issue, it threatens to be perceived as the latter. But is this justified?

At least, this distinction between types of models cannot be cast in black and white terms, since in both ‘camps’ the actual views vary considerably. Thus, as Croft (2001) and Langacker (this volume) have demonstrated themselves, the differences between alternative construction models are considerable. But variation within the ‘componential camp’ is even more drastic, witness – within FL – the substantial differences between models such as Halliday’s (1994) Systemic Grammar, or Dik’s (1997) Functional Grammar, or Van Valin’s (1993) Role and Reference Grammar, or Givón’s (1984/1990) functional-typological approach to grammar (cf. Butler 2003 for a comparison). In fact, to the extent that Croft’s concept of a componential model also – or even primarily – refers to the type of modular approach common in generative linguistics, it is actually not very appropriate to characterize functionalist theories. Functionalists hardly ever use the notion of a component, and they explicitly reject a modular approach. And they obviously assume, exactly like construction grammarians, that linguistic form is directly and systematically motivated by the meaning and use of language. Thus, Croft (2001) sometimes suggests that the notion of a ‘symbolic unit’ is typical of construction grammar approaches – but functional grammars, too, assume that linguistic forms are symbolic, hence connected to unique meanings. The only difference in this regards is that they do not represent the link between form and meaning in one unit: they implement it through mapping rules, or procedures, or (in Hallidayan grammar) a network of choices. And by doing this they (implicitly or explicitly) distinguish between different origins of meaning, viz., on the one hand, what is mentioned about ‘the world’ (i.e., the state of affairs talked about), and, on the other hand, how the presentation of the former is functionally adapted to the communicative circumstances (i.e., the actual con-
The discussion in section 3 obviously boils down to the claim that functionalist models should even go further than they do at present in these regards. For these reasons, the notion of a ‘process model’ is actually better suited than the notion of a ‘component model’ to characterize functionalist theories.

But also Langacker’s (1987: 63ff.) reaction against a process concept of grammar appears primarily inspired by a rejection of a generative concept of it, i.e. the concept of a grammar as a system of rules which produces, out of the blue, all well-formed syntactic structures of a language, and no more than these. Again, this is a concept which is entirely absent in functionalist process models, and Langacker’s (in general fully adequate) objections to it are absolutely irrelevant with regards to the latter (cf. Nuyts 1993: 283ff., 2001: 17ff. for discussion).

One fact which the constructionist view has absolutely brought home is that – whatever type of model one adopts – one cannot but assume a great number of fixed patterns of structure which have a meaning which cannot be explained in terms of their component parts, a fact which blurs the distinction between grammar and lexicon. It should be stressed, though, that also in functionalist theories the separation between lexicon and grammar is far from sharp (Systemic Grammar even does not distinguish between them at all). And most functionalist theories already do assume the existence of quite some fixed patterns, such as argument patterns of predicates, and word ordering templates. But it is beyond doubt that much more is needed, and this is certainly another area in which functionalists must actively turn to and learn from the evidence provided in CL.

But beyond this, the differences between the two types of models again remind very much of the differences in global perspectives between CL and FL sketched in section 2. Construction models focus on what meaning is conveyed by linguistic structures, and what this meaning looks like or how it is represented, i.e. more of a representational perspective. But functionalist process models are predominantly concerned with (some aspects of) how an utterance functions in context, and with how a speaker works her way through the linguistic means at her disposal in an attempt to build an utterance which is adapted to the communicative circumstances, i.e. more of an action perspective.

The question is, then, whether the differences between the two models will not fade away and disappear as soon as attempts will be made to suit them for inclusion in a cognitively plausible model of language production and understanding. For, also in a constructionist model one will ultimately have to specify the actual processes by which a speaker in a context comes
to selecting and if necessary composing a constructional pattern which he can utter as an adequate communicative act. And it is hard to see what else this could involve than – in general terms – to start from a conceptual meaning to be expressed and while taking into consideration the contextual factors select the adequate lexical and grammatical structures (in language production), and vice versa (in language understanding). In other words, it seems quite unavoidable to assume that in language processing conceptual meaning and linguistic form are applicable at different moments in time, and that the time lag in between is taken up by decision processes to determine which ‘pairing’ of a meaning and a form has to be realized in the light of the communicative circumstances. This is precisely what functionalist process models attempt to grasp, at least in principle.

But this obviously does not mean that the functionalist process models as currently conceived are necessarily adequate: they do use a lot of process notions, but they rarely specify them in sufficient detail to warrant that, given the types of representations assumed in the model, the entire system can actually work. In fact, from a psychological perspective it is quite obvious that most functionalist models are quite naive (to put it mildly), and can hardly be considered realistic renderings of what a speaker does when producing or interpreting an utterance. (The discussion in section 3 covers but one aspect of the problems in this regards). Most of them actually do not claim anything in that direction either. And so, at a microlevel, it is an open question whether the types of representations and processes currently accepted in these models are sufficient, like it is an open question whether constructionist types of representations will be needed or not. We might even end up with some combination of the two, or with something intermediary.

But maybe there is a metatheoretical dimension to the difference between the two types of models. At least, this would seem to be the consequence of the position taken by Langacker (1997: 239–240) that linguists should not concern themselves with processing activity, since this is a matter of neural connections, synaptic adjustments, patterns of activation, etc., which belongs in the realm of neuroscientists. Linguists should instead be concerned with the phenomenology of language, that is, with the entities that emerge in processing and with the experience they constitute. Most functionalists will probably not agree with this position. They will no doubt agree that there is a division of labor between neuroscientists and linguists or psychologists. But they will disagree on the status of processing in this regards: processing is not only something neural, but also something cognitive (in fact, characterizing language processing in production and inter-
interpretation is something completely different from characterizing neural processing, even if they must somehow be correlated). And they will consider the cognitive dimension of processing to belong in the realm of phenomenology as well.

It is not clear whether this difference in metatheoretical stance is a general one in the opposition between constructionist and process models. If it is, one can only hope that one position will manage to convince the other that it makes the more sensible assumptions. But going from the observation that in actual practice also in the constructionist ‘camp’ processing notions are manifestly present – cf. e.g. the explicit argument in Langacker (1999: 361ff) that conceptualization at least is a dynamic process, or the use of the principle of ‘unification’ in construction grammars (cf. Croft and Cruse 2004) to ‘build’ new constructions – one can remain hopeful that this will not be an impossible task.

In sum, to what extent this construction versus process view is just another issue of complementary perspectives, or also involves more substantial (meta)theoretical differences, is a matter which remains to be determined. But it is certainly one that urgently needs attention, across the borders of the two strands, since it is an element that threatens to divide functional and cognitive linguists, more than anything else.

5. Conclusion

In this chapter I have attempted to throw some light on the complex relations between CL and FL. At least in principle, all (or nearly all) differences between the two fields appear to be a matter of taking largely complementary perspectives on or of focusing on different dimensions of the complex and multifaceted phenomenon of language. But I have also attempted to demonstrate the risks involved in strictly maintaining the narrow focus related to each of these perspectives. I have tried to illustrate this point mainly with regards to FL. Specifically, I have argued that at least some of the empirical domains of concern in FL, such as everything to do with qualifications of states of affairs, cannot be handled by looking at linguistic structures and processes alone (as is still common practice in wide parts of FL), but also require an explicit and structural concern with the conceptual level and its interaction with the linguistic systems (as is common in CL). Moreover, it will hopefully have become clear throughout the discussion that if functionalists would do so, they hold the key to important new insights into the nature of human conceptualization, thus add-
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In sum, one can only hope that the future will see an increasing tendency for functional and cognitive linguists to communicate across their borders, and to share and integrate their complementary perspectives, such that we will ultimately arrive at a coordinated and coherent joint attempt to tackle the complexities of language as a cognitive system for communication. The cognitive-functional approach which was implicitly present in the discussions throughout this chapter, at least, is an attempt to contribute to this project.

Notes

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2. CL is functionally oriented, too, of course (see below), but, for the sake of the argument, in this chapter I will use the label ‘FL’ to refer to functionalist approaches at the exclusion of mainstream CL.

3. In a way, nearly the entire ‘European branch’ of CL is an illustration of this category: most European cognitive linguists have their roots in FL, and have adopted CL-views and notions yet without discarding many of their functionalist ‘habits’ and views. See Nuyts (in press) for discussion.

4. There is no doubt a historical explanation for these differences: CL emerged as a reaction against the generative tradition, i.e. to a large extent it arose out of the ‘ashes’ of the generative semantics movement, which in turn was a reaction to the orthodox transformational generative syntax tradition. FL however, essentially continues an old (mainly European) tradition which existed long before the generative ‘revolution’ (European structuralism was, unlike its American ‘Bloomfieldian’ counterpart, predominantly functionalist in orientation).

5. Obviously, due to these different accents the two strands also show, at least in part, a tendency to zoom in on different phenomena for investigation, and to use different research methods – see Nuyts (in press) for discussion.

6. In the realm of CL, this issue obviously relates among others to the notion of ‘grounding’ in Cognitive Grammar (Langacker 1987). It is beyond the confines of this chapter to enter into a comparison between the latter and the cog-
nitive-functional analysis sketched in this chapter, although there are some points of divergence between the two. See Nuyts (2002) for discussion.

7. The category ‘space’ does not figure in (2) but it obviously also belongs in it somewhere, viz., most probably, between time and quantificational aspect. But I cannot elaborate on this here.

8. Note the difference with the notion of grounding in Cognitive Grammar: the latter only applies to highly grammaticalized forms, while the present approach assumes that all alternatives which express the same basic semantic category belong to the system.

9. This dimension should not be confused with the notion of subjectivity as used in Cognitive Grammar (Langacker 1990), nor with Traugott’s (1989) notion of subjectification.

10. This concept of performativity is not to be confused with the notion of speech act performativity, although it is related. See Nuyts (2001: 40).

11. This latter point clearly suggests a correlation between this cline and Traugott’s (1989) notion of subjectification.

12. It is important not to confuse ‘commitment to the state of affairs’ and ‘commitment to the qualification’ here.

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Construction Grammars: cognitive, radical, and less so

Ronald W. Langacker

Abstract

A comparison of three formulations of “Construction Grammar” – by Croft (2001), Goldberg (1995), and myself (Langacker 1987a, 1990, 1991, 1999a) – frames the consideration of foundational grammatical issues. The broadest issue concerns the putative autonomy of grammar. Central here is the status of certain basic constructs for grammatical description, such as noun, verb, subject, and object. These pose two fundamental questions. First, are they universal? And second, are they semantically definable? Another broad issue concerns the relation between lexicon and grammar. Here the central questions are distribution and the relation between lexical and grammatical meaning. What determines the positions in which a lexical item can occur? How much does a lexical item contribute to the meaning of a complex expression containing it, and how much is contributed by the construction? How many distinct senses should be ascribed to a lexical item per se? An attempt is made to dispel the conceptual confusion which has clouded the consideration of all these matters.

1. Introduction

The reason I abandoned mainstream linguistic theory over a quarter century ago was my realization that the mainstream was flowing in the wrong place and in the wrong direction. I felt that a viable alternative had to be radically different, growing from completely new conceptual roots. A few years of effort resulted in a theory that was first called Space Grammar, later re-christened as Cognitive Grammar. This framework must indeed have been radically distinct, for mainstream generative theorists proved completely incapable of understanding it. To this very day, they have no idea what it is all about and why it might be interesting.
Although the term had not yet been invented, the theory I formulated was actually a kind of Construction Grammar. During this same general period Fillmore was developing the framework which came to be called by that name. For all intents and purposes, Cognitive Grammar and Construction Grammar evolved independently and in parallel, despite the mutual recognition that they were similar in many respects. In the last few years, drawing on both Cognitive Grammar and Construction Grammar, Croft has proposed what he calls Radical Construction Grammar. We have, then, a great potential for terminological confusion. Cognitive Grammar is both construction grammar and radical, but is called neither. Construction grammar is not limited to Construction Grammar, but also includes Cognitive Grammar and Radical Construction Grammar. If I refer to a framework as radical or as construction grammar, which one am I talking about?

I will use the phrase construction grammar – with a lower case c and g – as a generic term. It thus applies to all the frameworks mentioned, which share a substantial list of basic ideas: (i) Constructions (rather than “rules”) are the primary objects of description. (ii) The frameworks are non-derivational (“monostratal”). (iii) Lexicon and grammar are not distinct components, but form a continuum of constructions. (iv) Constructions are form-meaning pairings (“assemblies of symbolic structures”). (v) Information structure is recognized as one facet of constructional meanings. (vi) Constructions are linked in networks of inheritance (“categorization”). (vii) Regularities (rules, patterns) take the form of constructions that are schematic relative to instantiating expressions. (viii) Apart from degree of specificity/schematicity, expressions and the patterns they instantiate have the same basic character. (ix) Linguistic knowledge comprises vast numbers of constructions, a large proportion of which are “idiosyncratic” in relation to “normal”, productive grammatical patterns. (x) A framework that accommodates “idiosyncratic” constructions will easily accommodate “regular” patterns as a special case (but not conversely). (xi) Well-formedness is a matter of simultaneous constraint satisfaction. (xii) Composition is effected by “unification” (“integration”).

The three specific frameworks will be referred to as Cognitive Grammar, Radical Construction Grammar, and just plain Construction Grammar – with upper case c and g. To keep things manageable, I must base the comparison on particular representative works. The obvious choice for Cognitive Grammar is my two-volume *Foundations* (supplemented by Langacker 1990, 1999a), and for Radical Construction Grammar, Croft’s (2001) monograph by that name. In the case of Construction Grammar, there have been numerous partial descriptions (e.g. Fillmore 1988; Fill-
more, Kay, and O’Connor 1988; Michaelis and Lambrecht 1996), but Goldberg’s (1985) *Constructions* emerges by default as a comprehensive and readily accessible statement. Any criticism I might offer of the works by Croft and Goldberg should not obscure my great respect for these scholars, the importance of their contributions, or the breadth of their insights.

I will not compare and contrast these three kinds of construction grammar in great detail, but only to the extent of raising certain fundamental issues (see also Langacker in press-a). Among these are the putative autonomy of syntax, the nature and status of some basic grammatical constructs (subject, object, noun, and verb), and the relationship between lexicon and grammar. Theoretical discussions of these issues have in each case engendered a certain amount of conceptual confusion, which I hope to mitigate.

2. Form-meaning pairings

2.1. The symbolic alternative

The central organizing principle of classical generative grammar was the autonomous syntax hypothesis. The putative autonomy of grammar remains a contentious issue to this very day. In my view, discussions of it have suffered greatly from a lack of clarity concerning what the autonomy thesis amounts to, and more significantly, what a viable alternative might be.

In particular, two very different notions of autonomy need to be clearly distinguished. I will refer to them as weak autonomy and strong autonomy. Weak autonomy is simply the claim that grammar cannot be fully predicted from meaning and other independent factors (e.g. communicative constraints). It therefore has to be explicitly described as such – it does not emerge automatically, nor is it accounted for just by describing other phenomena. On the other hand, strong autonomy claims that grammar is distinct from both lexicon and semantics, constituting a separate level of representation whose description requires a special set of irreducible grammatical primitives.

It should be evident that weak and strong autonomy are not at all equivalent. The former pertains to the predictability of grammatical structure, the latter to its nature and the kinds of units needed to describe it. Yet these positions have not always been clearly distinguished. By confounding them, formalists have sometimes argued for strong autonomy on the basis of evidence which at most only demonstrates weak autonomy (an example
is Newmeyer 1983). Conversely, functionalists would be more effective in arguing against strong autonomy if they distinguished it more clearly from the weak version and were more explicit about what a viable alternative would look like.

Weak autonomy is generally accepted in Functional and Cognitive Linguistics. While strong autonomy is usually rejected, there is certainly no unanimity concerning an alternative, or even the need to explicitly formulate one. Cognitive Grammar provides what I call a symbolic alternative to strong autonomy (Langacker 1995). Some of its central ideas are as follows. Lexicon, morphology, and syntax form a continuum, divided only arbitrarily into discrete “components”. Everything along this continuum is fully describable as assemblies of symbolic structures. A symbolic structure is specifically defined as the pairing between a semantic structure and a phonological structure (its semantic and phonological poles). This has certain consequences. First, grammar is not distinct from semantics but incorporates it as one pole. Second, the elements of grammatical description are not special, irreducible primitives, but reduce to form-meaning pairings. Finally, every valid grammatical construct should be meaningful.

The other kinds of construction grammar agree on the need for an explicit model of linguistic structure, as well as on many specific features, noted earlier. In this section I will focus on one particular point on which there is less agreement than there might at first appear to be. It pertains to the characterization of constructions as form-meaning pairings.

2.2. Grammatical form

All three versions of construction grammar agree that constructions subsume both lexicon and grammar and reduce to form-meaning pairings. Croft (2001: 62) goes further and says that constructions are symbolic. However, this commonality conceals a fundamental point of non-agreement. I say non-agreement instead of disagreement because Goldberg and Croft appear not to even be aware of it, so they can hardly be said to disagree.

This point of non-agreement concerns what is meant by form. In Cognitive Grammar, as is clearly spelled out in all the published formulations, the form in a form-meaning pairing is specifically phonological structure. I would of course generalize this to include other symbolizing media, notably gesture and writing (Langacker 1987a: 81, 2001). But crucially, it does not include what might be called grammatical form. In both Construction
Grammar and Radical Construction grammar, the form part of a form-meaning pairing does include grammatical form. Thus Goldberg (1995: 51) speaks of “a pairing between a semantic level and a syntactic level of grammatical functions”. More explicitly, Croft (2001: 62) says that a construction is symbolic by virtue of being “a pairing of a morphosyntactic structure with a semantic structure”.

The point is not a trivial one or just a matter of terminological preference. The difference goes straight to the heart of two foundational issues: the nature of grammar and its relationship to meaning. In this respect, the vision of Cognitive Grammar is clear, consistent, and a radical departure from previous traditions. Grammar is symbolic in nature, where symbolic structures reside in the pairings of semantic and phonological structures. On this view, grammar (or grammatical form) does not symbolize semantic structure, but rather incorporates it, as one of its two poles. If grammar is wholly reducible to assemblies of symbolic structures, it is incoherent to say that some aspect of grammar functions as the symbolizing element in such assemblies.

These different characterizations of symbolic structures are shown in Figure 1. As I see it, the main reason why Cognitive Grammar is potentially interesting, constituting a radical departure from previous thought, is precisely the fact that grammar reduces to something more fundamental and thus does not appear in such diagrams as a separate box. Let me emphasize that reducing grammar to something more fundamental is not the same as eliminating grammar or claiming that it does not exist. It does exist. Children have to learn it, and linguists have to describe it. Instead, saying that grammar reduces to something more fundamental – particular configurations of semantic structures, phonological structures, and symbolic links between them – is comparable to saying that water reduces to a particular configuration of hydrogen and oxygen atoms. Recognizing the nature and structure of water, that it is not elemental but describable in terms of something more basic, is quite different from claiming its non-existence.

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**Figure 1**

(a) Cognitive Grammar

\[
\begin{array}{c}
\text{Semantic Structure} \\
\text{Phonological Structure} \\
\text{Symbolic Structure}
\end{array}
\]

(b) (Radical) Construction Grammar

\[
\begin{array}{c}
\text{Semantic Structure} \\
\text{Grammatical Form} \\
\text{Phonological Structure} \\
\text{Symbolic Structure}
\end{array}
\]
Why is this reduction – if achievable – of great theoretical interest? For several reasons. Reducing a complex phenomenon to something more fundamental is inherently interesting because it provides a deeper level of understanding. It is further interesting on grounds of theoretical parsimony. Semantic structures, phonological structures, and symbolic links between them are the minimum needed for language to serve its communicative function. Cognitive Grammar is thus maximally austere in claiming that only these elements are necessary. Finally, the reduction is interesting because the resulting view is so natural. Semantic and phonological structures instantiate two independently existing domains of human experience – conceptualization and sounds. There is no language-independent domain of grammar. It is therefore quite natural that grammar should be reducible to schematized configurations of elements drawn from those other domains.

By incorporating a separate kind of symbolizing entity, grammatical form, Construction Grammar and Radical Construction Grammar are considerably less radical than Cognitive Grammar with respect to traditional grammatical thought. To appreciate what is at stake, let us take a specific example. Shown in Figure 2 are their representations of the English ditransitive construction (Croft 2001: 222 [adapted from Figure 6.8]; Goldberg 1995: 50). Diagram (a) contains a separate level, labeled “Syn” (“a syntactic level of grammatical functions”), referring to the notions verb, subject, and object. Similarly, the non-semantic level in (b) not only indicates linear order (a dimension of phonological space) but also refers to the grammatical notions verb and noun phrase.

![Figure 2](image_url)

In Cognitive Grammar representations, I commonly use symbols like V (for verb), NP (for noun phrase), etc. The difference is that in my case these are merely abbreviatory notations. A basic claim of Cognitive Grammar is that notions like noun, verb, noun phrase, subject, and object are semantically definable and inherent in symbolic assemblies. Neither Construction Grammar nor Radical Construction Grammar commits itself to any such position. While practitioners of the two frameworks would not deny that
these grammatical constructs tend to correlate with certain meanings or functions, there is no definite claim that such constructs are fully definable conceptually, nor even any inclination to consider this a possibility worth exploring. To the extent that these constructs are not reduced to anything more fundamental, they represent a vestige in these frameworks of strong autonomy, in the form of a special set of irreducible grammatical primitives. The virtues of a full reduction, spelled out above, are therefore eschewed.

My objective here is not to argue in any depth or detail that one position is right and the other wrong—there is no space for that—but simply to point out differences and clarify the issues. At the very least, though, I suggest that the scheme in Figure 1(b) lacks the straightforward vision of Figure 1(a) with respect to symbolization and how it relates to grammar. There is something inherently obscure about the notion grammatical form, at least as it pertains to category membership and grammatical relations. In what sense, for instance, is categorization as a noun a matter of form? Category labels do not appear in the speech stream, and since ordinary speakers have no conscious awareness of grammatical classes or class membership, the latter can hardly be said to have a symbolizing function. There is also something less than straightforward about saying that grammar resides in constructions, defined as form-meaning pairings, and also saying that certain aspects of grammar constitute a major part of the form.

2.3. Achieving the reduction

Of course, if the advantages enumerated above are granted in principle, it remains to be demonstrated that the reduction can in fact be achieved, that grammar is fully and optimally describable as assemblies of symbolic structures as defined in Figure 1(a). How, then, does Cognitive Grammar avoid referring to grammatical form as part of the symbolizing pole of constructions? Obviously I can offer only the briefest sketch. While it has, I believe, been shown that the reduction is achievable, this may only be apparent from the entire body of research conducted in this framework.

Symbolic assemblies vary along several dimensions, all matters of degree. First is the extent of their internal symbolic complexity, i.e. the incorporation of smaller symbolic elements. A second dimension is degree of specificity (conversely, schematicity), whether they are characterized in fine-grained or coarse-grained fashion. A third factor is whether they are psychologically entrenched, i.e. mastered as familiar units, and a fourth is
the extent of their conventionalization in a speech community. These last two factors determine the degree to which a symbolic assembly constitutes a conventional linguistic unit (whether it is an established element of the language).

Considering just conventional linguistic units, the first two factors define a space of possibilities, sketched in Figure 3, within which various sorts of linguistic elements occupy different sectors (though any specific boundary would be arbitrary). Fully specific assemblies correspond to traditionally recognized lexical items. Morphemes are lexical units with zero symbolic complexity. More schematic assemblies correspond to grammar. Among these, symbolically complex assemblies constitute combinatory patterns. I refer to these as constructional schemas. Schemas lacking symbolic complexity represent grammatical categories. I will now illustrate each of these.

![Figure 3](image-url)

Some lexical items are represented in Figure 4. *Tree* and *top* are morphemes. At the semantic pole I use crude diagrams as abbreviations for what, in a serious description, would have to be highly elaborate, multifaceted semantic specifications. For the phonological pole, I will simply use orthographic representations. Each morpheme profiles a particular thing within the conceptual content it evokes. An expression’s profile – shown in bold – is what it designates (or refers to) within its conceptual base. In 4(c) I sketch the complex lexical item *treetop*. The two component morphemes are integrated at both the semantic pole and the phonological pole to form composite semantic and phonological structures, themselves linked in a
symbolic relationship. For diagrammatic ease, I have not shown the composite structures separately, as integrated structures (they are given below in Figure 6). Semantically, *tree* and *top* are integrated by virtue of a correspondence (dotted line) between the profile of *tree* and the schematic object with respect to which *top* is characterized. Phonologically, they are integrated by occurring contiguously in the speech stream (labeled T, for processing time) in a particular linear order (\(<\)). Finally, the semantic pole of *top* is given in bold to indicate that it functions as profile determinant, i.e. its profile is the one inherited at the composite structure level. Thus *treetop*, as a composite whole, profiles the *top* (not the entire tree).

![Figure 4](image)

Shown in Figure 5 are schemas for a few grammatical categories (to be discussed more fully below). A noun profiles a thing (abstractly defined), represented as a circle. Observe that the noun schema is bipolar – a noun is an expression, with both a form and meaning, hence a symbolic structure. At the schematic level, however, a noun is not characterized in terms of any particular phonological content, so the schema’s phonological pole is maximally schematic [...]. A verb profiles a process, i.e. a relationship scanned sequentially in its evolution through time (t). I have shown the profiled relationship as an arrow with ellipses (for schematicity); a circle indicates its primary participant, and a box represents whatever other entities may be involved. The bar along the time arrow indicates sequential scanning. Certain higher-level categories can also be characterized semantically. In particular, a noun phrase (or nominal) profiles a thing which is
grounded, i.e. a grammaticized specification is made of its epistemic status vis-à-vis the ground (G), comprising the speech event and its participants.

Symbolic assemblies are connected in what Goldberg calls an inheritance network and I refer to as a network of categorizing relationships (Langacker 1987a: ch. 10). For example, in Figure 6 I show the noun schema as categorizing the component expressions tree and top as well as the composite expression treetop. All three are classed as nouns by virtue of instantiating the schematic characterization of being symbolic structures which profile things.1
The subject and object relations are also definable in terms of symbolic assemblies. They reflect something more fundamental, namely a facet of the semantic characterization of relational expressions. In a profiled relationship, one participant generally stands out as a kind of primary figure within the scene. The participant accorded this primary focal prominence is termed the trajector (tr). Often another participant is accorded a secondary degree of focal prominence; this is called a landmark (lm). These notions are required just for purposes of viable semantic description, e.g. to distinguish the meanings of otherwise equivalent pairs of expressions like above and below, like and please, etc.

The grammatical notions subject and object can then be characterized, in very general terms, by the symbolic configurations sketched in Figure 7. A subject is a noun phrase whose profile corresponds to the trajector of a profiled relationship, and an object, one whose profile corresponds to a relational landmark. More elaborate symbolic assemblies can be given to characterize more specific kinds of subject and object relationships, as well as particular subject and object constructions in a given language.

We can now examine a representative constructional schema. Figure 8 represents the English ditransitive construction in approximately the same degree of specificity as the schemas in Figure 2. For sake of simplicity, I have not indicated constituency, nor have I shown the composite structure at any level of organization. I have also omitted the time arrow from the representation of the verb. The schematic verb is one that profiles a canonical act of transfer (e.g. give, send). The trajector exerts some kind of force (double arrow), thus inducing something to move (solid arrow) into the landmark’s sphere of control (ellipse), so that this recipient then has access to it (dashed arrow). The box enclosing the verb’s semantic pole is given in bold to indicate that the verb functions as profile determinant (or head), i.e.
its profile is inherited at the composite structure level. The other three component symbolic structures are all noun phrases, serving to specify central participants of the verbal process. In this construction they are distinguished by temporal order. Preceding the verb is the subject nominal, whose profile corresponds to the verb’s trajector. Directly following the verb is the nominal whose profile corresponds to the landmark (the recipient), which I would identify as grammatical object. The third nominal, which follows the object, specifies the entity transferred.

The only substantive elements posited are semantic structures and phonological structures, which are linked to form symbolic structures. Symbolic structures are in turn connected by correspondences and categorizing relationships to form assemblies of symbolic structures. There is no separate level of grammatical form, nor are there any irreducible, specifically grammatical primitives. Yet an account has been given of all the notions generally thought to be required in a grammatical description. In Figure 8, the verb, noun phrases, subject, and object are identified as such because they instantiate the defining schemas, which are immanent in them, and which are themselves symbolic assemblies. There is no need for a distinct level of grammatical form – rather, this is grammatical form. Moreover, grammatical form does not symbolize semantic structure. Rather, grammatical form is itself symbolic, residing in the schematized pairings of semantic and phonological structures.
3. Basic grammatical constructs

The full reduction of grammar to symbolic assemblies depends crucially on the semantic definability of certain fundamental and universal grammatical constructs, notably noun, verb, subject, and object. In contrast to both Construction Grammar and Radical Construction Grammar, Cognitive Grammar claims that these notions are indeed susceptible to semantic characterization – not just at the prototype level (which is widely accepted), but at the schema level, covering all instances. At the prototype level, each can be characterized in terms of a conceptual archetype. A schematic characterization (valid for all instances) makes reference to basic cognitive abilities initially manifested in the corresponding archetype.

The possibility of schematic definitions is quite uncontroversial, in the sense that linguistic theorists are virtually unanimous in asserting their impossibility. You learn in your first linguistics course that these are syntactic notions, not semantically definable. I believe the theorists are wrong and will briefly sketch my proposed definitions. My main point, however, is that a valid case has not actually been made against the possibility of semantic characterizations because the questions have not been properly framed. My objective is thus to clarify both some pivotal issues and the nature of a symbolic alternative to purely syntactic definitions.

3.1. Noun and verb: lexical specification

The two basic issues that arise with respect to nouns and verbs are, first, whether these are truly universal categories, and second, whether they are semantically definable. Against their universality, it is sometimes claimed that certain languages afford no basis for distinguishing them. In such languages, the same lexical stem can freely function in either capacity (and perhaps in others as well). Now I suspect that in-depth analysis will always reveal some grounds for making the distinction (see, for example, Helmbrecht 2002; Jacobsen 1979). That, however, is an empirical matter, and I can happily live with either outcome.

For sake of discussion, let us stipulate that, in some languages, any lexical stem can function grammatically as either a noun or a verb. What theoretical position does this (stipulated) fact argue against? Such languages are cited as showing that the noun/verb distinction is not universal, but what particular claim of universality does the argument presuppose? The very statement that any lexical stem can function grammatically as either a noun
or a verb admits that the noun/verb distinction is relevant to the grammar of
the language in question. So such languages are not counterexamples to the
claim that we need to talk about nouns and verbs in a grammatical descrip-
tion and in the characterization of particular complex expressions. Instead,
what the argument bears on is the more specific claim that nouns and verbs
are universal lexical categories. The argument only makes sense, I believe,
if interpreted as being directed against a strong claim reflecting an idealized
cognitive model inherent in traditional grammatical thought. This ICM has
the following components: (i) lexicon and grammar are distinct; (ii) every
lexical item is categorized as representing a particular part of speech; and
(iii) in every language nouns and verbs are among the parts of speech for
which lexical items are categorized.

Because the various forms of construction grammar reject this ICM, the
argument is basically irrelevant to them. Certainly the claim of universality
made in Cognitive Grammar pertains to the role of nouns and verbs in
grammatical description. No position is taken on the extent of its lexical
manifestation, in particular languages or universally. Since lexicon and
grammar form a gradation in any case, the issue is less than compelling.

Nevertheless, it is worth considering how a language which did not ef-
fect a lexical noun/verb distinction would be described in Cognitive
Grammar. Lexical items are fixed expressions, i.e. symbolic assemblies
which have the status of conventional units and are fairly specific rather
than schematic (especially at the phonological pole). Each evokes some
body of conceptual content as its base. Usually a lexical item imposes a
particular profile on this base as part of its conventional semantic value.
This amounts to grammatical categorization, since an expression’s profile
(not its overall content) determines its grammatical class. Hence a lexically
uncategorized stem is simply one that makes no inherent specification for
profiling. It can thus be incorporated in grammatical frames which effect its
categorization through their own profile specifications.

While this seems straightforward enough, it does bear closer examina-
tion. We need to understand more clearly the relationship between a con-
structional schema and a specific expression constructed in accordance
with it. In Construction Grammar, where one speaks of inheritance hierar-
chies, this is a matter of an expression inheriting specifications of a con-
struction. Perhaps equivalently, in Cognitive Grammar I speak of networks
of categorizing relationships, so the relationship is one of categorization.
For example, the constructional schema in Figure 8 would be invoked to
categorize a typical English ditransitive clause. An expression’s structural
description (i.e. its structural interpretation with respect to the linguistic
system) is the set of categorizing relationships between linguistic units and aspects of its structure (Langacker 1987a: 11.2.2, 2000).

To take the simplest sort of case, consider a lexical stem unspecified for grammatical category being used in a construction that imposes a nominal interpretation. The symbolic assembly comprising the construction and the stem is sketched in Figure 9(a). Only the semantic pole is shown. The constructional schema describes the integration of a determiner with a noun to form a simple noun phrase. As a nominal grounding element, a determiner is itself a schematic noun phrase, for it specifies the epistemic status of a thing vis-à-vis the ground (Langacker 2002a). Integration with the noun is effected by a correspondence between the grounded entity and the noun’s profile. The box enclosing the constructional schema is drawn with square corners to indicate its status as an established conventional unit.

![Figure 9](image)

The lexical stem is also an established unit, as a matter of definition. We are assuming the case of a stem which lacks inherent categorization. This translates into the absence of inherent profiling. Its semantic pole consists of a conceptualization which may have any degree of internal complexity; it suffices for our purposes to show it as including a thing which participates in some relationship, giving it the potential to be construed as either a noun or a verb. Here it is construed as a noun by virtue of being employed in the determiner+noun construction. This is a matter of the noun in the constructional schema being used to categorize the lexical stem, as represented by an arrow. Pivotal to any categorizing relationship is a set of correspondences between the standard and target of categorization (i.e. the standard maps onto the target in a particular way). In this case the nominal profile corresponds to some thing evoked by the stem. This categorizing
relationship is enclosed in a box with rounded corners, on the assumption that this particular stem has not previously been employed in this manner (i.e. the categorization is novel, not itself an established conventional unit). In similar fashion, the entire assembly (where the stem is so categorized in the context of the determiner+noun construction) is also shown as novel.

Figure 9(a) only represents the fact that categorization occurs, not its result. We further need to show how the target (T) inherits from the standard (S), i.e. how the two are unified. I take this linguistic inheritance and unification as being just a special case of what goes on constantly in virtually every aspect of our mental experience. In gross terms, it is comparable to what happens when I happen to look at a cup and instantaneously have the experience of seeing it as a cup. Or when I catch a glimpse of a friend’s face and immediately see it as that person’s face. The crucial phenomenon is this experience of seeing T as S, or more generally, of apprehending T as S. This experience does not reduce to that of apprehending S and also apprehending T. Above and beyond their individual apprehension we have the unified experience of apprehending them simultaneously, one in relation to the other, so that the target is (as it were) perceived through the “lens” of the standard. This is, if you like, a kind of blending or conceptual integration (Fauconnier and Turner 1998, 2002), where the target is shaped and interpreted according to the specifications of the standard.

This is shown abstractly in Figure 10. Shown on the left is a novel categorizing relationship in which an established categorizing schema (S) is used for interpreting a new experience (T). The box in bold represents the organizing properties contributed by the standard; for our purposes these are properties such as profiling and trajector/landmark alignment. X, Y, and Z represent facets of the target’s content. By virtue of a particular set of correspondences (a particular way of applying the schema to the target), facets of this content are structured in the manner specified by the standard. While it is useful to show the standard and target separately for analytical purposes, the result of coactivating S and T in this manner is a unified experience, that of apprehending T as S. The diagram on the right is meant to capture this. The two diagrams can be taken as notational equivalents – the one on the left is an “exploded” representation, the one on the right a “compacted” or abbreviatory representation.
Figure 10

Let us now return to Figure 9, where a lexical stem is categorized by an element of a constructional schema. Diagram (a) showed the categorizing relationship in exploded form, to indicate the respective contributions of the schema and the stem. By substituting the compacted form, we obtain the equivalent diagram (b), which shows the result of categorization. It represents more directly the effect of apprehending the conceptual content of the lexical stem in the manner specified by the constructional schema in forming the expression.

I have been assuming the situation where the uncategorized lexical stem occurs in this construction for the very first time, or at least occurs infrequently enough that the configuration in Figure 9 can be regarded as novel. Clearly, though, if it is useful to employ the stem in this structural frame on one occasion it might prove useful to do so on many other occasions as well. Suppose this does happen with some frequency. Structural assemblies that occur with any frequency are likely to coalesce as familiar, “prepackaged” units. They become psychologically entrenched for individual speakers, and conventional within a speech community if this happens for enough individuals. In this fashion, the entire assembly in Figure 9 – including the categorizing relationship – emerges as an established linguistic unit (an entrenched, conventional element of the language). This is shown (using the exploded format) in Figure 11, where rounded corners are replaced by square corners to indicate the emergence of a conventional linguistic unit.
This kind of development is bound to affect substantial numbers of frequently occurring lexical stems. Even if a language follows the basic strategy of leaving lexical items unspecified for profiling and hence for grammatical category, many lexical items will come to be conventionally employed in structural frames which impose on them categorization as a noun, as a verb, or as both. It is hard for me to imagine that such a language would not have many hundreds, and probably thousands, of conventionalized unit assemblies analogous to Figure 11.

We can then pose the following question: does such a language have lexical nouns and verbs? But that only raises another, more fundamental question: what precisely does it mean to say that a language has lexical nouns and verbs? From my standpoint, this implies the existence of established lexical units which incorporate the requisite profiling (of a thing or a process, respectively). It follows, then, that the language does have lexical nouns and verbs. Alongside the uncategorized lexical stem we started with in Figure 9, the language has an augmented lexical stem, a conventional unit consisting of the basic stem categorized as a noun (or analogously, as a verb).

In fact, the same lexical stem, through use in different constructions, might give rise to augmented stems representing both the noun and verb categories, as shown in Figure 12(a)-(b). In this case, the basic (uncategorized) lexical stem can be regarded as a schema abstracting away from their difference in profiling, as in diagram (c). We might posit an analogous schema for an English lexeme such as *cook*, which has well-established noun and verb uses. The schematic sense of *cook* would neutralize the noun/verb distinction, invoking their shared conceptual content without imposing any particular profile.
This raises the further question of whether there is any real difference between languages said to have lexically uncategorized stems and a language like English. I believe there may be a difference, but if so it is only one of degree. It would simply be a matter of the relative proportion of lexemes in which particular categorizations constitute entrenched units, as well as the proportion of lexemes in which an unprofiled variant is sufficiently accessible to be freely used as either a noun or a verb. Indeed, I suspect that languages tend to develop preferences, favoring either specific categorization of lexemes, hence restricted distribution, or else lexemes without inherent profiling, resulting in relatively free distribution.

Be that as it may, I should mention two other points bearing on the issue of whether a language featuring uncategorized stems really differs from English just in degree. First, leaving aside ambivalent forms like *cook*, can English nouns and verbs be attributed the kind of internal structure sketched in Figure 12(a)-(b), with counterparts of both an unprofiled stem and a stem augmented by profiling? I would answer in the affirmative. There is no reason why lexical semantic representations like those in Figure 4 cannot be factored into portions representing a schematic profile (either a thing or a process) and the basic conceptual content, together with an indication of how the profile maps onto the content. This is shown for *top* in Figure 13. The kinds of diagrams given previously, e.g. in Figure 4, can then be seen as compacted representations, corresponding to the unified
experience of apprehending the content as an instance of the category defined by the profiling. Indeed, the factoring in Figure 13 directly reflects the notion that the category schema is immanent in its instantiations. The categorizations shown in Figure 6 could thus be redrawn in the manner of Figure 13, with the class schema depicted as one of the factors in the exploded representation of each lexeme.

Figure 13

The second point is whether a language favoring uncategorized stems can still be said to have lexical nouns and verbs when the augmented lexical stem only occurs in the context of particular structural frames, as shown in Figure 11. It might be objected that only the basic, uncategorized stem is stored as such in the lexicon. However, this objection presupposes that there is a separate, discrete entity called “the lexicon” so that it makes sense to ask whether something is stored inside it or somewhere else. In construction grammar, the notion of “the lexicon” as a separate, discrete “box” is rightly rejected in favor of seeing lexicon and grammar as a continuum of constructions. Thus, even if the uncategorized stem is in some sense basic or primary, the existence of augmented stems as established conventional units is sufficient basis for referring to lexical nouns and verbs (for those lexemes which have such augmentations). These are lexical units in the sense of being fixed expressions.

Does it matter that the augmented unit is confined to a particular symbolic assembly, where it occurs in combination with a certain constructional schema? No, it does not. In the first place, we need not assume that a given lexeme is categorized as a noun or verb in the context of just a single constructional schema. It might occur in a variety of structural frames, each reinforcing its cognitive status, so that its categorization is to some degree autonomous, i.e. independent of any particular structural context. In Figure 14 the same augmented unit is shown (in compacted format) as being incorporated in two different symbolic assemblies imposing a nominal profile: as the head of a noun phrase, where it is grounded by a determiner; and as specifying the landmark of a relational expression (e.g. as a prepositional object). The box enclosing the augmented lexical stem is given in
bold to indicate the relative degree of autonomy thereby achieved. Recurrence in multiple configurations reinforces its status as an independently accessible structure.

Moreover, I will argue that occurrence in some array of structural frames is part of the characterization of lexical units in general. It is only by occurrence in a variety of frames, whose differing specific features cancel out, that any notion of a context-independent lexeme can ever arise. To the extent that it does emerge with some degree of independent accessibility, its conventional occurrence as part of larger symbolic assemblies remains as an important dimension of its linguistic description.

3.2. Noun and verb: semantic definability

We turn now to the second basic issue concerning nouns and verbs, namely the availability of semantic definitions. In Cognitive Grammar it is claimed that these categories are semantically definable not just at the prototype level, but also schematically, for all category members. Construction Grammar makes no such claim. Indeed, there seems to be no inclination even to consider the possibility that schematic characterizations might be sought.

The position of Radical Construction Grammar is less categorical. On the one hand, Croft (2001) states that:

[The] terms noun, verb, and adjective ... describe functional prototypes, if they describe anything at all ... In fact, the universal typological theory of parts of speech defines only prototypes for the parts of speech; it does not define boundaries. Boundaries are features of language-specific categories. (Croft 2001: 102–103).
On the other hand, Croft (2001) says that:

[Langacker’s] conceptual analysis of parts of speech ... is broadly compatible with the universal-typological theory ... [T]here is no inherent conflict between these two theories ... The solution is to recognize that the language-particular categories which linguists prefer to call Noun, Verb, and Adjective are ... RADIAL CATEGORIES [in which extensions from the prototype] involve a degree of conceptualization, which sometimes manifests itself as a fairly dramatic semantic shift. [Hence the difference between the two theories] is chiefly a matter of emphasis. The cognitive theory emphasizes the uniformity of the semantic construals found over and over again across languages ... (Croft 2001: 104).

Despite this assertion of compatibility, Croft deftly avoids subscribing to – or even explicitly acknowledging – Cognitive Grammar’s radical position on this issue. The claim is not merely that the basic categories have prototypes and that extensions from the prototype involve semantic factors, with particular construals occurring “over and over again across languages”. Rather, I make the more specific claim that a particular, schematic conceptual factor is part of every such extension, constituting an invariant conceptual characterization of each category. Perhaps Croft’s reference to “the uniformity of the semantic construals” alludes to this more radical claim, but if so it hardly conveys it. I believe that my schematic characterizations are indeed compatible with Croft’s typological perspective, since the two pertain to different levels and dimensions of analysis. Still, the issue I am addressing is one that Croft basically skirts.

The argument against conceptual characterizations valid for all members of the basic categories is given in every linguistics textbook and every work introducing linguistics to a popular audience. The dogma is stated in (1), and a typical formulation of the argument is quoted in (2). I want to emphasize that this is really the only case that is ever made against the possibility of schematic conceptual definitions – every argument given is a variant of the one presented in (2). Linguists of all theoretical persuasions have found it unimpeachable.

(1) ... No constant semantic effect is associated with the functioning of a morpheme as a noun, as a verb, or as any other part of speech. (Langacker 1968: 83)
(2) ... Let’s ask whether each part of speech really denotes a consistent kind of meaning ... Now it is true that any word that names an object will be a noun. But on the other hand, not every noun names an object. ‘Earthquake’ names, if anything, an action, as does ‘concert’; ‘redness’ and ‘size’ name properties; ‘place’ and ‘location’ pretty obviously name locations. In fact, for just about any kind of entity we can think of, there exist nouns that name that kind of entity. So the grammatical notion of noun can’t be given a definition in terms of what kind of entity it names ... A particular kind of entity need not correspond to a single part of speech either ... We conclude that parts of speech ... are not definable in terms of meaning. (Jackendoff 1994: 68–69)

I want to impeach it. The argument exemplified in (2) rests on two fallacies, which I will refer to as the objectivist fallacy and the level fallacy. The objectivist fallacy is the tacit assumption that an expression’s meaning is strictly determined by objective properties of the entity it designates – there is no recognition that linguistic categorization might depend on how an entity is apprehended or conceptualized. Thus, since the noun earthquake refers to something which, in objective terms, is an action (or event), it is cited as a counterexample to the claim that nouns denote objects. What this ignores is the possibility that an event might be apprehended as an object, with the linguistic categorization reflecting this way of conceptualizing it. It implicitly denies either that we have this sort of conceptual capacity, or else that it has any conceivable linguistic relevance. Such denials are at best gratuitous. Can it seriously be doubted that we have the mental capacity to reify events and construe them as abstract things, or (perhaps equivalently) that we are capable of ontological metaphor (Lakoff and Johnson 1980: ch. 6)? And if we have such capacities, why should they be deemed irrelevant for linguistic semantics?

The second fallacy is the tacit assumption that conceptual archetypes (such as object, action, and location) are the only possible candidates for semantic definitions. If one is seeking schematic definitions valid for all instances, these clearly represent the wrong level of semantic description. As noted earlier, conceptual archetypes are appropriate for the characterization of category prototypes (e.g. a prototypical noun is one that designates an object). Schematic definitions have to cover both central and peripheral instances of a category, so if they are possible at all, they have to be considerably more abstract. The classic argument exemplified in (2) fails to even contemplate the possibility of more abstract characterizations.

I conclude that the classic argument is simply invalid. It has not in fact been demonstrated that basic grammatical categories are incapable of schematic conceptual characterization. This matter has to be approached
anew with an open mind, with full appreciation of the richness of our mental capacities. My own proposals for schematic definitions (Langacker 1987a, 1987b) have to be accepted in the proper spirit. First, I would not claim to have actually proved that these particular proposals are correct (though I personally believe they are valid at least as first approximations). They should rather be thought of as plausible candidates which minimally demonstrate that schematic characterizations are not impossible in principle and afford some idea of what they might look like. Second, the proposals are psychologically plausible in the sense that they rely on mental phenomena that are either well known or readily demonstrated. These phenomena are real, and there is no reason not to expect them to have a basic role in linguistic meaning – the only issue is whether they have the specific role I suggest. Finally, although the analysis is based on circumstantial evidence, the proposals are not intrinsically mysterious or beyond the reach of scientific investigation. They can in principle be investigated empirically, by experiment and other means, and I hope they eventually will be.

What, then, are the proposed characterizations? They are simply stated: a noun profiles a thing, while a verb profiles a process. The problem, of course, is to explicate the notions thing and process, which are adopted for convenience as technical terms affording a shorthand way of referring to certain conceptual operations. Here I can only briefly sketch their nature.

A thing is defined abstractly as any product of grouping and reification, both very basic cognitive abilities. At the perceptual level, we readily group entities on the basis of contiguity and similarity. Consider the array in (3). Based on contiguity, we can hardly avoid perceiving five groups each consisting of three symbols; we do not just see fifteen symbols as an unstructured display. Based on similarity, we can hardly avoid dividing this array of symbol clusters – at a higher level of organization – into a group of two, on the left, and a group of three, on the right. More abstractly, groups can be established on the basis of other factors, such as a collective function. An alphabet, for instance, is a set of letters conceptually established as a group through their collective function in the writing of a given language. By reification, I simply mean the manipulation of a group as a unitary entity for higher-level cognitive purposes. In (3), we reify the three-symbol clusters just by counting them – we arrive at the number five only by counting each group of three as a single entity for this purpose. The groups emerging through similarity are reified when we observe that the O-based group is larger than the X-based group.

(3) X X X X X X   O O O O O O O O O O O O
I can offer only a few comments on how the proffered characterization applies to specific nouns. It can first be noted that large numbers of nouns clearly do designate groups of entities. A few examples are given in (4). Plural nouns also have this character.

(4) group, set, pair, collection, stack, team, orchestra, row, archipelago, trio, constellation, list, association, library, silverware, repertoire, herd, flock, colonnade, tribe, family, bunch, alphabet, chord, squadron, forest, six-pack, deck [of cards], choir, staff, [offensive] line, crew, colony, place setting, litter [of kittens], fleet, triptych, convoy, lexicon, audience

What about terms for physical objects, the category prototype? Can it plausibly be argued that something like a rock, a desk, or a person is conceptualized as a group of constitutive entities? Importantly, the proposed characterization does not require conscious awareness of grouping or constitutive entities; it is not implied that such entities be discrete or individually recognized. Indeed, what makes objects prototypical is precisely the fact that the grouping and reification are so natural and automatic (perhaps effected by low-level processing) that we are only aware of their product. While a rock does consist of substance discernible at multiple contiguous locations, our capacity for object recognition is such that we automatically pull these together to produce the conscious apprehension of spatial continuity. It is only when the same cognitive abilities are applied to discrete, individually recognized entities, as in (4), that we potentially become aware that something special is going on.

It should further be noted that the characterization makes no reference to space or to physical entities, hence it is applicable to conceptions representing any domain of experience and any level of abstractness. I have used it, for example, to describe various kinds of nominalizations and other abstract terms (Langacker 1991: 1.2). I certainly do not pretend to have fully demonstrated its general applicability, or to understand the details of how it works in all cases. The basic point, however, is to provide a plausible example of what a viable schematic characterization might look like, in terms of how abstract it must be and the necessity of referring to mental abilities rather than specific conceptual content (let alone objective properties of entities in the world).

An expression can profile either a thing or a relationship, both terms being understood in a maximally general way. Vaguely and impressionistically, we might say that things represent a “contractive” force, the capacity for pulling
entities together, creating oneness, whereas relationships represent the opposite: an “expansive” force, the capacity for “reaching out” so that an entity is not conceived in isolation, but as part of a configuration involving others as well. In the very general sense in which I use it, the term relationship does not imply that the entities related have to be discrete, individually recognized, or explicitly mentioned. I would say, for example, that the adjective *square* profiles a relationship even though it has just one linguistically expressed participant (its trajector), coded by the noun it modifies (e.g. *square table*). In this case the relationship (comprising parallelism of opposite sides, equal length of sides, equality of angles, etc.) obtains between facets of the single participant, not between separate participants.

A relationship can either be manifested instantaneously or require some span of time for its manifestation. The relationship coded by *square*, for example, is manifested instantaneously. This does not mean that it only endures for an instant, only that an instant is sufficient for its full manifestation. If a table is square through an indefinite span of time, it is nonetheless true that observing it at any single point in time during that span is sufficient to reveal that configuration. Relationships manifested through time (rather than instantaneously) typically involve change (and actual change necessarily occurs through time). As a limiting case, however, a relationship can be manifested through time merely in the sense of persisting or enduring through time without essential change.

We clearly have the capacity to conceptualize a relationship evolving through time and apprehend it as a unified whole. We view its successive temporal phases as morphing into one another, each developing organically out of its predecessor, not as separate and unrelated mental experiences. The natural way to mentally access a temporally evolving relationship is by means of what I call sequential scanning, sketched in Figure 15(a). Shown are five representative temporal stages of an arbitrary relationship, occupying successive positions in time (t). Through processing time (T), the conceptualizer (C) scans through these stages in sequence, only one being focused at any given instant. This is natural because it is the way we apprehend real world events in real time. If you see an apple fall from a tree, you see it in only one place at any one moment. Through short-term memory, however, we can also apprehend an event holistically, mentally superimposing its successive stages in scanning through them, as shown in diagram (b). This summary scanning results in all the temporal stages of the relationship being simultaneously available as a single gestalt, having been built up stage by stage through processing time. We engage in sum-
mary scanning, for instance, when we watch the flight of a ball and then conceptualize its trajectory as a shape.

We can now define a process as a relationship that is manifested through time and scanned sequentially. A verb profiles a process. This schematic definition makes no reference to any particular cognitive domain (other than time) or any specific conceptual content. It is thus abstract enough to apply to all members of the category. Moreover, it relies on only clearly evident cognitive abilities: the capacity to apprehend a relationship, and to track it sequentially as it unfolds through time.

At least as it applies to English, I have shown the descriptive elegance of this characterization in various published but widely ignored analyses (e.g. Langacker 1982, 1987a, 1991). Here I will merely observe that it affords a simple, natural, and explicit way to describe the semantic contrast between verbs and members of other grammatical categories, even when their conceptual content is quite similar. What, for example, is the difference between the verb resemble and the preposition like? Or between the verb fear and the adjective afraid? In each case my answer is that the verb profiles a temporally manifested relationship (i.e. one persisting through time) whereas the preposition or adjective profiles a relationship manifested instantaneously. While such a relationship does endure through time, a preposition or adjective does not profile its temporal extension, but only the relationship as it is manifested at any given instant during this time span. When we want to focus on the temporal extension of a relationship such as like or afraid, we do so by combining it with the schematic verb be, which extends the profiled relationship through time.
What is the difference between a verb, e.g. *jump*, and the corresponding infinitive, *to jump*? They have precisely the same conceptual content and profile the same temporally extended relationship. The primary difference, I suggest, is that the infinitive imposes a holistic view on the process designated by the verb, i.e. it construes the event by means of summary scanning. Moreover, the imposition of summary scanning is one step in the direction of converting a process into an abstract thing (which is why infinitives sometimes function as nouns), other steps being grouping and reification. Consider an event nominalization, for instance *a jump*, designating one instance of the process profiled by the verb. In this type of nominalization, the constitutive entities which are grouped and reified to form a thing are nothing other than the successive phases of the event—the relationships obtaining at each successive point in time. Nominalization is achieved when the profile is shifted from the constitutive relationships to the abstract thing resulting from their grouping and reification.

In sum, I suggest that the conceptual characterizations proposed for noun and verb ought to be taken seriously, for several reasons. First, they offer explicit and intuitively appealing conceptual characterizations of notions that have previously resisted semantic description. Second, they appeal to only obvious and independently established cognitive abilities. Third, they are descriptively successful, providing the basis for revealing analyses of related phenomena. Minimally, I hope to have shown that the impossibility of schematic conceptual characterizations has not in fact been established. Cognitive linguists in particular ought to be quite resistant to any claim that such fundamental and universal categories as noun and verb do not have conceptual definitions, and should do their best to come up with plausible candidates. If my own candidates are not accepted, they at least suggest the requisite level of abstractness and the kinds of mental capacities that might be considered.

3.3. Subject and object

Having resolved the issue of nouns and verbs, I turn now to subject and object. My treatment will have to be more limited, even though matters are more complex. The same two basic questions can be posed: Are these grammatical notions susceptible to schematic semantic characterization? And are they language universals?

Considering first the semantic question, the Cognitive Grammar position is simply stated: a subject is a nominal expression which specifies the
trajector of a profiled relationship; and an object is a nominal expression specifying the landmark of a profiled relationship. More precisely, the thing profiled by the nominal expression corresponds to the relational trajector or landmark, as shown in Figure 7. The notions trajector and landmark are themselves characterized in terms of focal prominence, as the primary and secondary focal participants in a profiled relation.

The conceptual characterization of subject and object is not something that is generally contemplated in Construction Grammar. Goldberg (1995) alludes indirectly to the Cognitive Grammar analysis when she states that argument roles are “constructionally profiled”:

(5) Every argument role linked to a direct grammatical relation (SUBJ, OBJ, or OBJ2) is constructionally profiled ... The definition of constructional profiling embodies the claim that direct grammatical relations serve to distinguish certain arguments semantically and/or pragmatically; that is, direct grammatical functions profile particular roles as being either semantically salient or as having some kind of discourse prominence, for instance, being particularly topical or focused. (Goldberg 1995: 48–49)

However, this is not at all equivalent to the Cognitive Grammar position. First of all, the terms trajector and landmark are not even mentioned. Also, the type of prominence in question is not the one called profiling in Cognitive Grammar, for that is specifically a matter of what an expression designates or refers to. While the trajector and landmark are part of an expression’s profile, their status as such constitutes another kind or dimension of prominence, one that occurs in addition to profiling. Moreover, the focal prominence constituting trajector or landmark status is specifically not identified with topicality or with focus in the usual discourse sense. It is a distinct factor which may tend to correlate with these discourse notions but is not reducible to them.

As for Radical Construction Grammar, Croft (2001) likewise neglects to mention the notions trajector and landmark. He denies both the universality of subject and object as fixed syntactic categories and the possibility of semantic definitions:

(6) Syntactic roles must be defined construction-specifically, and the patterns of distribution that they define are varied both within and across languages. Terms such as ‘subject’ and ‘object’ do not define some fixed category or syntactic structure ... Both syntactic and semantic characterizations are heterogeneous, varying within and across languages. (Croft 2001: 170)
Once more, then, Cognitive Grammar makes a radical claim not embraced by either Radical Construction Grammar or the less radical Construction Grammar. But does this claim have any chance of being valid? To assess this, we must first be clear about its nature. The terms subject and object are much less clear-cut than noun and verb in regard to their cross-linguistic application and even their applicability. I am not claiming that my definitions are appropriate for everything which might have been referred to by these labels in any language, nor are they limited to things so labeled. For obvious personal reasons, my point of departure is English, as well as other languages where it is generally agreed that subjects and objects need to be posited, and for similar reasons. I am not however saying that this classic conception of subject and object is universal, or that the standard way of defining them is adequate. Instead, I argue for schematic conceptual characterizations based on focal prominence, which are quite different from traditional characterizations based primarily on syntactic behavior. This grammatical behavior I take as being symptomatic of the conceptual import of subject and object, not definitional. It is on the basis of this more abstract, conceptually grounded characterization of subject and object that I look for their manifestation in other languages and frame the issue of their possible universality.

For convenience, let me focus the discussion primarily on subjects, mentioning objects only sporadically. A semantic characterization of subject is usually deemed impossible owing to the objectivist and level fallacies described earlier. The only candidates generally considered are notions like agent and discourse topic, but these are only appropriate at the prototype level—not every subject is a discourse topic, and agents are at best just prototypical for subjects. If a schematic characterization is possible, it has to be more abstract, and it cannot be tied to objectively discernible properties of the situation described (such as agency). Instead it has to be sought in cognitive processing, inhering in how we apprehend and construe a situation, not in the situation itself. A rationale for the proposed characterization in terms of focal prominence runs as follows.

In a conceptualist semantics, the degree of prominence conferred on various elements is a natural dimension of linguistic description and a way of distinguishing the meanings of expressions with comparable semantic content. The notions trajector and landmark (the participants accorded primary and secondary degrees of focal prominence) are required just for purposes of viable semantic description. Most obviously, without these descriptive constructs there would be no way to distinguish the meanings of many pairs of expressions which evoke the same content and profile the
same relationship: like/please, above/below, before/after, etc. This independently established factor in the meanings of relational expressions offers itself as a basis for characterizing the grammatical notions subject and object. I believe this characterization to be both intuitively natural and descriptively successful, although I cannot hope to show that here. Be that as it may, the conceptual prominence of subjects (and secondarily objects) provides a non-circular way of explaining their relative accessibility for grammatical purposes (which is sometimes referred to as “syntactic prominence”).

It is not the case, then, that in this respect Cognitive Grammar “simply ... build[s] a great deal of syntactic structure directly into ... conceptual structures” (Newmeyer 1990: 65, fn. 5). In confidently asserting that it does, Newmeyer fails to apprehend the inherent logic of the enterprise (further described in Langacker 1993a, 1999b). It is not a matter of making arbitrary claims about conceptual structure just to accommodate grammar. The only conceptual notions appealed to in Cognitive Grammar are independently shown to be both psychologically plausible and semantically justified.

Although trajector/landmark alignment is a necessary descriptive construct, its precise psychological character remains to be definitely established. I have myself characterized it in various ways, hopefully all consistent. My description of trajector and landmark status as stronger and weaker spotlights, which can be directed at different elements within a scene, is of course only metaphorical. There is an evident affinity to figure/ground organization in the sense of gestalt psychology (cf. Talmy 1978). If this is valid, the best way to draw the analogy, I believe, is by viewing trajector and landmark as primary and secondary figures, against the ground of other participants and the setting. From a more dynamic perspective, there is linguistic evidence for regarding trajector and landmark as being the first and second reference points mentally accessed in building up to the full conception of a profiled relationship (Langacker 1993b, 1999b, 2001a). This in turn leads to a characterization of trajector as a predicate-internal topic (as opposed to a discourse-level topic) (Langacker 2001b).

I suspect these will ultimately prove to be just different perspectives on the same basic phenomenon. In any case, trajector/landmark alignment is needed for semantic description and is reasonably characterized as some kind of focal prominence. As such, it pertains to a basic mental ability, or an aspect of cognitive processing, rather than to specific conceptual content or the nature of the scene described. It is thus appropriate for schematic
definitions of subject and object, applying to all instances, not just the prototype. It stands to reason that primary focal prominence would tend to be conferred on entities that are salient in other ways, hence the correlation with such notions as agent and discourse topic. These, however, pertain to the prototype level rather than a schematic characterization.

Unlike agent and patient, definitions based on focal prominence are not limited to canonical transitive clauses like (7a). They are equally applicable to the subject and object of imperfective clauses like (7b) and the subjects of “special” clause types motivated by various functional considerations, such as passives, “middles”, and “setting-subject constructions”, exemplified in (7c-e). There is no reason why a spotlight of focal prominence cannot be directed at a patient rather than an agent, or at the global setting rather than a participant (Langacker 1987c, 1993a).

(7)  
   a. The farmer killed the duckling.
   b. This soup has a funny taste.
   c. The farmer was criticized by animal rights groups.
   d. These towels fold easily.
   e. California experiences a lot of earthquakes.

A common objection to the characterization in terms of focal prominence consists of asking how it could possibly work in the case of “dummy” it (analogously for there and “idiom chunks”), as in (8). The presumption, of course, is that it is meaningless and thus refers to nothing at all. How can its non-existent referent be the most prominent element in the scene?

(8)  
   a. It appears that their strategy has failed.
   b. It’s windy in Chicago.

The objection is quite erroneous, starting from the assumption that it has no meaning. Bolinger (1977: 84–85) was very much on the right track in describing it as “a ‘definite’ nominal with almost the greatest possible generality of meaning, limited only in the sense that it is ‘neuter’ ... it embraces weather, time, circumstance, whatever is obvious by the nature of reality or the implications of context”. To this I added the suggestion that impersonal it profiles an abstract setting, a general conceptual analog of the spatial settings coded as subject in expressions like (7e). In more recent work I have sought to refine and further motivate the characterization in the context of a broader account of impersonals and other phenomena (Langacker 2002b, in press-b).
If it is granted that impersonal *it* designates an abstract setting, it might still be objected that something so tenuous could hardly stand out as the most salient element in a scene. This, however, is just another incarnation of the objectivist fallacy. It presupposes that meanings are determined by objective properties of the situation described, so that an abstract setting could function as subject only by virtue of being objectively discernible as the most prominent entity independently of how the situation is construed for purposes of linguistic expression. On the objectivist view, I would have to be claiming that *it* occurs as subject in (8) because we look at the scene, observe that an abstract setting is the most salient element there, and code it as subject to reflect this observed salience. But that is not at all how things are claimed to work from a cognitive perspective based on a conceptualist semantics. Instead, the focal prominence constituting trajector status is viewed as being conferred on an element for linguistic purposes and by linguistic means. By way of analogy, a passive construction enables the speaker to focus a patient rather than an agent, for any number of different reasons, not necessarily because the patient is intrinsically or objectively salient. By the same token, the existence of impersonal *it* and *it*-constructions enables the speaker – for whatever reason – to render the abstract setting prominent.

I would argue, moreover, that this is a very natural thing to do. Impersonal *it*-constructions are a special case of setting-subject constructions, which are prevalent and numerous (Langacker 1991: 8.1.3.2). A setting represents a natural reference point for accessing the elements it contains, and thus a natural starting point for describing a situation. The strategy – a common one in linguistic structure – is to first evoke a global setting and then "zoom in" to establish elements within it. This conforms to the dynamic characterization of trajector as the initial reference point mentally accessed in building up to the full conception of the profiled relationship.

In these limited remarks, I do not pretend to have demonstrated or even sufficiently explicated the meaning of impersonal *it* or the schematic characterization of subjects. Rather, my aim has been to clarify certain issues, to argue that a valid case against the semantic definability of subjects has not been made, and to suggest what kind of characterization ought to be considered. Right or wrong, the characterization proposed casts the question of universality in a very different light. On this point I only have space for a few brief observations.

Let me first say that the extent to which subject and object might be universal really is an open question. Moreover, resolving it empirically is hardly a straightforward matter if, as suggested, these constructs are characterized in terms of focal prominence. Doing so requires extensive and
sensitive analysis of numerous languages typologically very different from English and Standard Average European (SAE), arriving at optimal and well justified descriptions from the Cognitive Grammar perspective. While there has been some excellent work along these lines (e.g. Cook 1988; Kumashiro 2000), it is far too limited for any conclusions to be drawn about universality. I am not a typologist, and my own knowledge of cross-linguistic variation is also quite limited, so at this point I can only speculate. For whatever it is worth, I would speculate that some basis can ultimately be found in every language for ascribing trajectory status (primary focal prominence) to certain nominal elements, although in some languages it plays very little role in grammar or has a very different role than in SAE. I suspect that landmark status (secondary focal prominence) will turn out not to be a motivated descriptive construct for all languages. Whatever might be the ultimate empirical findings, I will happily accept them.

Bear in mind that my expectations are based on a particular view of what constitutes the essence of subjecthood, even in English and SAE – a schematic conceptual characterization in terms of focal prominence. Usual statements to the effect that there are no grounds for positing subjects in a certain language are based instead on semantic properties that are merely prototypical (agent, discourse topic), and more fundamentally on a cluster of characteristic grammatical behaviors (e.g. controller for verb agreement and various kinds of anaphora). The situation looks entirely different if these are interpreted not as the essential definition of subjecthood, but rather as being symptomatic of primary focal prominence. If we adopt this more abstract yet cognitively natural characterization of subjects, a considerably wider range of phenomena can be seen as manifesting it. If subject status is fundamentally a matter of focal prominence, only contingently associated with particular grammatical behaviors, the construct may well exhibit a greater degree of universality.

Let me offer just one, rather striking illustration. It concerns a phenomenon, observed in various Philippine languages, in which a particular clausal participant is singled out for special status of a sort not amenable to standard labels. The examples in (9), from Tagalog, were cited by Schachter (1976, 1977) in his argument that no single element in these languages could be identified as grammatical subject. He was of course assuming the traditional, SAE-biased view of subjects based on grammatical behavior, agentivity, and role as discourse topic. Since the element in question does not exhibit these properties, he called it the “topic”, nonetheless arguing that it cannot be characterized as a discourse topic; for this reason, others have referred to it more neutrally as the “trigger” (e.g. Wouk 1986).
a. Mag-salis ang babae ng bigas sa sako para sa bata.
   AF-will:take:out TR woman ART rice LOC sack BEN child
   ‘The woman will take some rice out of {a/the} sack for {a/the} child’.

b. Aalis-in ng babae ang bigas sa sako para sa bata.
   will:take:out-TF ART woman TR rice LOC sack BEN child
   ‘{A/The} woman will take the rice out of {a/the} sack for {a/the} child’.

c. Aalis-an ng babae ng bigas ang sako para sa bata.
   will:take:out-LF ART woman ART rice TR sack BEN child
   ‘{A/The} woman will take some rice out of the sack for {a/the} child’.

d. Ipag-salis ng babae ng bigas sa sako ang bata.
   BF-will:take:out ART woman ART rice LOC sack TR child
   ‘{A/The} woman will take some rice out of {a/the} sack for the child’.

The element selected as trigger can instantiate any semantic role, such as agent, theme, location, or beneficiary, respectively exemplified in (9). The choice is marked in two ways. First, the nominal so identified takes ang in lieu of either the article ng (for direct participants) or a preposition. Second, the verb is inflected to indicate the trigger’s semantic role. Here I use the labels AF, TF, LF, and BF for the inflection serving to focus the agent, theme, location, or beneficiary.

So what is this element called “topic” or “trigger”, which cannot be identified as either a discourse topic or a subject in the classic, SAE-based sense? In my view, it virtually begs to be called the trajector, i.e. primary focal participant. It seems like the perfect example of a spotlight of focal prominence that can be directed at different elements within a scene to render them salient. This focusing, moreover, obtains at the clause level and is thus distinct from a discourse topic, as well as being independent of any particular semantic role. I conclude, then, that Tagalog does have subjects, in accordance with the schematic conceptual characterization proposed in Cognitive Grammar. Schachter, of course, is perfectly correct that it does not have subjects as this notion has traditionally been defined.

I am therefore suggesting that SAE-type subjects represent just one manifestation of a more general linguistic phenomenon which has a unified conceptual characterization at the schematic level. The unity becomes evident once we look beyond the associated, language-specific properties (particular grammatical behaviors, correlation with discourse topic or semantic roles) and focus instead on the precipitating conceptual factor which attracts them – primary focal prominence, as explicated above.

If valid, apprehending this schematic commonality enriches our understanding of structural variation rather than replacing it. Obviously it does
not in any way diminish the interest and importance of typological investigation or careful attention to the specific details of individual languages. In this respect let me point out three apparent differences between the basic grammatical relations in a language like English and in a Philippine language like Tagalog. First, it is not evident to me that there is any need in the latter to posit a secondary degree of focal prominence, i.e. landmark status. It might very well be that objects – implying the systematic use of two degrees of focal prominence – are less universal than subjects. Second, it need not be the case in every language that trajector status is prototypically associated with agents. I believe, in fact, that in some languages (Tagalog perhaps being one) the default situation is for primary focal prominence to fall instead on what I call the theme (Langacker 1989, 1991: ch. 9, in press-c). Both agent and theme are intrinsically salient, though for different reasons, so each is a natural candidate to be conventionally selected as the unmarked choice of subject. Finally, in a language like Tagalog, there may be no reason to insist that verb stems specify a trajector as part of their lexical representation. A paradigm like (9) suggests that a stem is inherently neutral in this respect, with each inflectional option serving to direct the spotlight of focal prominence to a particular semantic role. If so, this is quite comparable to languages favoring lexical stems unspecified for profiling, in which case analogous remarks apply.

4. Lexicon and Grammar

Since the term is useful and unavoidable, I define lexicon as the set of fixed expressions in a language. However, this should not be taken as implying that the set is well-delimited, that the boundaries are discrete, or that lexicon and grammar are dichotomous. Cognitive Grammar shares with both Construction Grammar and Radical Construction Grammar the view that lexicon and grammar form a continuum of constructions (or symbolic assemblies), sometimes called a construction. In this section, I will examine and hopefully clarify some of the issues that arise in this domain.

4.1. Networks vs. discrete components

Linguistic theorists often talk about “the lexicon”, and ask whether something is “in it” or not, as if the term had a clear referent with definite boundaries. Yet there is seldom any attempt to examine this notion in a
theory neutral way, to spell out its putative properties, or to determine by serious empirical investigation whether a discrete entity with these properties actually exists.

One reason, I believe, is the attitude that lexical items and syntactic structure are so obviously different that placing them in different “components” of the linguistic system needs no explicit justification. And indeed, there is not very much in common between the lexical item *zebra* and the English passive construction. This attitude is not however justified by the observation. Showing that a particular lexical element and a particular grammatical element are sharply distinct does not establish that this is so for all elements of these putative classes. A sharp distinction will be evident if one examines just the opposite endpoints of what is actually a continuous spectrum of possibilities, or just the prototypes of two categories with no precise boundary between them. The clear contrast between focal green and focal blue does not imply that one can say precisely where green stops and blue begins when we examine more peripheral instances. For this reason people are often uncertain whether something is green or blue, and sometimes disagree.

Another reason theorists feel no need to demonstrate the existence of this bounded entity they call “the lexicon”, or to critically examine its nature and putative basis, is a widespread presumption that hypothesizing separate, discrete “components” is somehow more rigorous, more restrictive, or more scientific than simply positing a network or a continuous field of possibilities. This is not the place to comment on the powerful yet spurious reasons for this bias. It suffices to affirm that ultimately these matters have to be decided empirically, on the basis of linguistic evidence, not as a matter of a priori theoretical predilection.

What kind of evidence might one look for? If “the lexicon” truly exists as a discrete, precisely delimited entity, it should be possible to specify the particular properties that categorically distinguish lexical from grammatical elements. Moreover, the various properties should agree in picking out the same elements for membership in one component or the other, i.e. the boundaries established by these various properties should all coincide. The various parameters that might be considered for a categorical definition of “the lexicon” include fixedness, size, specificity, and regularity. While I cannot discuss them in any detail, even a preliminary assessment suggests that a coincidence of boundaries cannot be anticipated. From my standpoint, the burden of proof is on those who would seriously posit “the lexicon” as a discrete “component”. They need to supply a specific definition and empirical evidence that such an entity actually exists.
In my view, the only sensible way to define lexicon – a way that is both useful and approximates what is traditionally understood by the term – is to identify it with the set of fixed expressions in a language. By fixed, I mean that an expression is psychologically entrenched and conventional within a speech community (hence a conventional linguistic unit). Both entrenchment and conventionality are by nature matters of degree. Thus I do not see this parameter as imposing any sharp boundary. There is rather a gradient of familiarity (both individual and collective) leading from wholly novel expressions, at one extreme, to highly frequent lexical units, at the other. There are countless expressions of intermediate and uncertain status.

Size refers to whether an expression consists of an unanalyzable root, a polymorphemic stem, a full word, a multiword phrase, or an even longer sequence. Reflecting the term’s etymology, lexicon is often defined as a set of words: “The total list of words for any language is referred to as its lexicon” (Akmajian, Demers, and Harnish 1984: 54). Obviously, though, this is not what is usually meant in speaking of “the lexicon”, nor are lexical item and word considered to be synonymous in standard linguistic terminology. Expressions both smaller than words (roots and stems) and larger than words (phrases) are usually recognized as lexical items. Conversely, many words are novel expressions. Thus, although there may be some correlation, criteria based on size and on fixedness simply do not pick out the same set of elements.

Since they are taken as being expressions (as opposed to grammatical patterns), lexical items are phonologically specific. Semantically, they range along the full spectrum from highly specific to maximally schematic, as in (10):

(10) tack hammer > hammer > tool > implement > object > thing

For those who would make a distinction, semantic schematicity is one basis for distinguishing so-called “function words” or “grammatical markers” from true “lexical items”. I myself see a gradation there rather than a dichotomy, and while it is certainly true that grammatical markers as a general class are quite schematic compared to typical lexical items, there are many intermediate cases – formatives considered “grammatical” which nonetheless have quite substantial semantic content (e.g. modals, prepositions, quantifiers). There are also certain lexical items (e.g. entity) which are at least as schematic semantically as many grammatical elements. Of course, semantically specific expressions can be of any size, and can either be fixed or novel.
The invocation of regularity – actually irregularity – in defining lexicon goes back to Bloomfield (1933: 274): “The lexicon is really an appendix of the grammar, a list of basic irregularities”. This notion was carried over into generative grammar, for positing this “appendix” provided a convenient place to sequester anything that did not conform to the overall vision of a language as a set of general rules. To some extent the idealized conception still persists: that of syntax describing novel sentences in fully regular fashion, in contrast to lexicon, comprising irregular expressions (primarily words) which simply have to be listed. This idealized conception has always been highly problematic, both empirically and theoretically. Problematic, for instance, were lexically governed rules (like the so-called “raising” rules), where only certain of the seemingly eligible predicates occur in a particular syntactic pattern. Special new theoretical devices had to be invented to deal with them, such as rule features (Lakoff 1970). Special devices are required precisely because the assumption that language factors neatly into regular and irregular components is just that: an aprioristic – and false – assumption.

In any case, regularity is a complex notion involving at least three distinct factors. The first is generality: the extent to which the constructional schema describing the pattern is schematic rather than specific (e.g. whether it refers to the class of verbs as a whole, to a certain subclass, or to one particular verb). The second is productivity: the extent to which a constructional schema is accessible for sanctioning new instances (illustrated by the major vs. the minor patterns for marking the English past tense). The third is compositionality: the extent to which the meaning and form of the whole are predictable from those of its parts in accordance with sanctioning schemas.

With respect to generality, it is a basic insight of construction grammar that patterns characterized at all levels of schematicity occur in languages and need to be described. At the extreme, a constructional schema can specify a particular lexical item as one of its constitutive elements. Indeed, a lexical item can itself be regarded as a symbolizing pattern of minimal generality.

With respect to productivity, we can first observe that there is no absolute correlation with size. Despite the tendency for morphological patterns to be less productive than syntactic ones – so that morphology is sometimes thought to be “in the lexicon” – there are both productive patterns of word formation and syntactic patterns limited to a closed set of lexical items. Moreover, many instances of productive patterns establish themselves as fixed expressions, and thus count as lexical items, whatever their size. Ex-
amples include *I love you*, *Our speaker needs no introduction*, as well as that expression describing the official economic policy of the Bush administration: *tax cuts for the rich*.

With respect to compositionality, the orthodox view is that lexical items have to be listed because they exhibit some measure of semantic non-predictability, whereas novel expressions productively derived by syntactic rules are fully compositional. It is true that lexical items have to be listed – that follows from the fact that they are fixed expressions, hence psychologically entrenched as conventional units. I would however deny that lexical status correlates with semantic compositionality in this manner. On the one hand, many fixed expressions come as close to full compositionality as any expression does (e.g. *complainer, hot coffee, I love you*). On the other hand, the results of multifaceted research in cognitive semantics argue against the traditional assumption of full compositionality for sentential semantics. Though I cannot pursue the matter here, I suggest that fixed and novel expressions are roughly comparable in their degree of compositionality. What differs instead is merely the extent to which non-compositional aspects of their meanings are entrenched and conventionalized.

I have not discussed any of these points in full or even sufficient detail. Still, I see no reason to presume or suspect the existence of a discrete lexical “component” categorically distinguished by the sorts of properties usually considered. Cognitive Grammar agrees with Construction Grammar in positing networks of symbolic assemblies (hierarchies of constructions) encompassing both lexicon and grammar, with no essential distinction between them. I would however like to point out one substantial difference between the two approaches in this regard. It concerns the grounds for recognizing the existence of a construction and its status as a conventional linguistic unit.

In Construction Grammar, a construction is recognized only if some aspect of it is unpredictable from its component parts or other, independently established constructions (Goldberg 1995: 4). There is no such requirement in Cognitive Grammar, where an assembly is accepted as part of “the grammar” to the extent that it is psychologically entrenched and conventional in the speech community. The difference emerges in cases that are obviously learned as conventional units, but at the same time exhibit no obvious idiosyncrasy vis-à-vis other units. Take the sentence *I love you*. Every speaker of English knows this as a fixed, familiar expression. If I use it, I do not have to actively construct it from scratch by evoking component lexical items and combining them in accordance with the appropriate constructional schemas – it comes as a prepackaged unit. On the other hand, it
is fully analyzable and does instantiate the schemas in question. Moreover, it lacks any evident idiosyncracies that would preclude its being constructed anew in accordance with the schemas. It is therefore not a construction as defined in Construction Grammar. It is however a conventional linguistic unit as defined in Cognitive Grammar. Being a fixed expression, it even qualifies as a lexical item.

At one level, this point of difference is just a matter of how the terms construction and conventional linguistic unit are defined, not something to be resolved on empirical grounds. Still, I would like to ask whether this stricture imposed by Construction Grammar is either natural or necessary. The pivotal issue—previously identified—we ought to be clear about is what it means to say that something is “in the grammar” or “part of the language/linguistic system”. From my own standpoint, I would first offer the clarification that there is no such thing as “the grammar”, “the language”, or “the linguistic system” if we mean by this a discretely bounded entity, like “the lexicon” which I have just argued not to exist. If I use such expressions for expository convenience, it must nonetheless be understood that language recruits and incorporates phenomena which are not primarily linguistic, that there is no clear boundary between linguistic and non-linguistic units, and that belonging to a language is a matter of degree (Langacker 2003). While defining a language or grammar as a set of conventional linguistic units, I claim that each defining factor—being conventional, being entrenched as a unit, and even being linguistic—represents a gradation rather than a categorical distinction (Langacker 1987a: 2.1).

With that understood, we can still ask the question of what ought to be included as part of “the grammar” or “the language”. Here it seems to me that a structure which is clearly linguistic, familiar to all members of a speech community, and learned as a prepackaged unit can only be excluded arbitrarily. Why should something learned and regularly used in speaking a language not be considered part of “the language” (as if that term had any independent import)? To reinforce the arbitrariness of excluding it, imagine that a fixed, familiar expression like I love you undergoes some miniscule adjustment—perhaps it occurs so frequently that the vowel of you tends to be reduced phonetically to a slightly greater degree than is usual for that structural context. The difference is barely measurable and speakers are not aware of it. Yet this would represent an element of idiosyncrasy vis-à-vis other constructions, so by the Construction Grammar definition I love you would itself become a construction. But at what precise moment does this happen? At what scale of measurement does a barely detectable difference become one that causes a structure to jump from being outside the grammar
to being a construction inside the grammar? Why should this structure originally have no linguistic standing despite being used repeatedly, only to acquire full linguistic citizenship just by undergoing a barely detectable adjustment?

One response might be to claim that entrenchment and conventionalization always result in some measure of idiosyncrasy vis-à-vis other constructions. It can be argued that unit status invariably narrows the range of interpretive options in subtle ways, or that evoking something as a pre-packaged unit implies a kind of processing efficiency which makes it distinct from an otherwise equivalent non-unit structure. These are plausible suggestions which I might very well accept. However, this response would not be grounds for preserving the requirement of non-predictability, but rather would render it superfluous. If entrenchment and conventionalization are also assumed to be prerequisite for including something “in the grammar”, and if these invariably result in some measure of non-predictability, then the latter criterion plays no independent gatekeeping role.

Why, though, do we need a gatekeeper? What is the motivation for adopting the requirement of non-predictability in the first place? I would not presume to speak for the authors or proponents of Construction Grammar. I would however suggest that the matter merits (re)consideration, for it involves some foundational issues. I cannot help observing that this basic provision of Construction Grammar resonates with a motto from the transformational era, to the effect that “the shortest grammar is the best grammar”. This was the era of symbol counting and evaluation metrics, the notion that the most parsimonious description was the best description. It led inexorably to the position that regularly formed expressions were excluded from the grammar – they did not have to be listed, because they could be constructed by general rules.

Obviously, I would not challenge the basic scientific principle that a more parsimonious description is always preferable, other things being equal. It is not however the case that a more parsimonious description is always preferable, period. That is, other things are not always equal, so parsimony is not always appropriate as an end in itself with no consideration of other factors. One such factor is accuracy in regard to the target of description. If our objective is to characterize language as a psychological entity (not an idealized abstraction), to determine the actual nature of its cognitive representation, then representational parsimony becomes an empirical issue, not one that can be decided a priori. Suppose it is factually true that speakers learn a number of fixed expressions, and deploy them as prepackaged assemblies, even though they are strictly predictable and non-
idiosyncratic vis-à-vis other units. In this case, the most parsimonious description which accurately describes speakers’ linguistic knowledge is one that explicitly includes these units despite their predictability. Ignoring the possibility that certain familiar structures might coalesce as established linguistic units despite conforming to general patterns constitutes what I have referred to as the rule/list fallacy (Langacker 1987a: ch. 1).

One motivation for the requirement, I suspect, is that non-predictability gives the analyst a way of demonstrating that a construction exists and has to be described as such. If a structure has properties not predictable from other, independently established constructions, it must be a construction in its own right. That is certainly valid. One must not however confuse the issue of whether a construction actually exists as an established psychological entity with the very different issue of whether one can prove its existence to the satisfaction of other analysts. While the criterion of non-predictability serves to demonstrate a construction’s existence, a construction might very well exist even if it cannot be demonstrated in this manner. There may be some other way to show it (e.g. experimentally), or it might be possible to show it in principle if not yet in practice. Thus, while the requirement is perfectly reasonable at the practical level of investigating language and demonstrating that certain units must be posited, I find it problematic as a way of defining a linguistic unit or delimiting what constitutes “a language”.

4.2. Distribution

In his book on Radical Construction Grammar, Croft (2001) rightly argues that basic grammatical categories (or “parts of speech”) cannot be defined universally on the basis of participation in particular grammatical constructions, and conversely, that particular constructions define their own language-specific categories (represented by individual semantic maps on conceptual space). Croft and I agree that the basic parts of speech, like noun and verb, are language universals with a conceptual basis (though we may disagree on whether a schematic characterization is possible). We further agree that these are not the same as distributional classes, i.e. classes defined by privilege of occurrence in particular constructions. While general categories like noun and verb may be referred to in describing particular constructions or specifying the range of elements that may occur in them, a distributional class is usually not coextensive with a basic
category, nor is such a category universally definable in terms of distribution.

As I recall from the early days of transformational grammar, the failure of distributional classes to coincide with basic categories came as a surprise (given the presumption of fully general and productive rules) and engendered the need for a series of ad hoc and unsatisfactory theoretical devices. Perhaps because they came along later, the various forms of construction grammar have recognized the problem of distribution from the very outset and thus accommodate it in a natural and integral fashion. Each adopts a usage-based approach (Barlow and Kemmer 2000; Langacker 2000), which I first described as follows:

(11) Substantial importance is given to the actual use of the linguistic system and a speaker’s knowledge of this use; the grammar is held responsible for a speaker’s knowledge of the full range of linguistic conventions, regardless of whether these conventions can be subsumed under more general statements. [It is a] nonreductive approach to linguistic structure that employs fully articulated schematic networks and emphasizes the importance of low-level schemas. (Langacker 1987a: 494)

There are differences, to be sure. In particular, I have emphasized how this statement conflicts with the Construction Grammar proviso of non-predictability. Nonetheless, the general philosophy and perspective on distribution are very similar. I will discuss distribution from the standpoint of Cognitive Grammar and eventually note some points of difference with Construction Grammar.

Some basic features of a usage-based approach are as follows. All linguistic units are abstracted from usage events, i.e. actual occurrences of language use in their full phonetic detail and contextual understanding. This comes about by reinforcement of recurring commonalities, properties or configurations of properties shared by a number of usage events and apparent at a certain level of schematicity. Specific details which do not recur in this fashion fail to be reinforced and are therefore “filtered out” as units emerge in usage. Depending on factors such as type and token frequency, abstraction can be carried to any degree supported by the data. More schematic units may therefore coexist with more specific units in which they are immanent, resulting in schematic hierarchies. Depending on what recurs and what is filtered out, schematization proceeds in different directions, each pertaining to a particular facet of the organization of in-
stantiating structures. Because the same structure is often categorized in multiple ways, schematic hierarchies intersect.

To illustrate these points, I have sometimes used the diagram in Figure 16, pertaining to the English ditransitive construction (the ellipse on the left) as well as various uses of *send* (the ellipse on the right). Each box represents a schematic symbolic assembly. Thickness of the boxes indicates a rough estimation of the relative accessibility (or prototypicality) of these assemblies, reflecting frequency and degree of entrenchment. Obviously most details have been suppressed, and symbols like \( V \) and \( NP \) are merely abbreviatory. Even the more detailed representation in Figure 8 is just a first approximation. Moreover, the schemas shown are mere fragments of the networks one would have to posit in a realistic description. Thus the transfer schema represents just the central subcase in the network comprising the English ditransitive construction (as described by Goldberg 1989, 1995).

![Figure 16](image_url)

The constructional schemas on the left are reasonably posited as entrenched units abstracted from countless usage events. They are of course part of a much larger network of constructional variants, characterized at varying levels of specificity, reflecting the usage patterns for ditransitives. Collectively they describe the English ditransitive construction, which coalesces around particular predicates, notably *give*, which are predominant...
in the pattern at early stages of language acquisition (Sethuraman 2002; Tomasello 1992). The schemas on the right are abstracted from usage events where send repeatedly occurs in particular structural contexts. Reinforcement of recurring commonalities leads to emergence of these item-specific symbolic assemblies in the same manner as more general constructional schemas. Here too the schemas shown are probably just a fragment of the full network of variants comprising a speaker’s ultimate knowledge of this lexeme. If send has any kind of cognitive status that is independent of these structural frames, it arises through further abstraction and schematization. Shown at the top, this more abstract structure neutralizes the differences among the variants of the predicate occurring in each frame and should be thought of as being immanent in each of them.

Intersecting networks such as these provide the distributional information that constrains language use. Depending on a complex interaction involving a number of factors – including their relative accessibility, contextual priming, and degree of overlap with the target – particular schemas are invoked to categorize the corresponding facets of new expressions (Langacker 1987a: ch. 11, 2000). In some cases a higher-level schema representing a general pattern is sufficiently accessible to be invoked for the sanction of novel expressions. As an overall tendency, however, lower-level structures are more likely to be invoked for this purpose, if only because their greater specificity affords a greater degree of overlap with the target, which serves to activate them. Distributional restrictions emerge as a function of how the network is structured and accessed via this dynamic process.

Hence a usage-based model handles distributional restrictions without resorting to ad hoc theoretical devices (like rule features). The requisite information is acquired and represented in the same way that general patterns are. Consider how it is specified that a particular lexical item is allowed to occur in a certain construction. One possibility is that a constructional schema accessible enough to sanction new expressions refers schematically to a general class which the lexical item unproblematically instantiates. Suppose, on the other hand, that the construction is non-productive, so that only certain lexical items can occur in it, and that the members of this distributional class cannot be fully predicted. They must therefore be listed, i.e. speakers must learn specifically, for each permitted lexeme, that it does occur in this construction. Special devices – like rule features, arbitrary diacritics, etc. – have at one time or another been invented to identify the privileged lexical items. Nothing special is needed in a usage-based model of the sort
described. The information that *send*, for example, occurs in the ditransitive construction resides in the constructional subschema shown in the middle in Figure 16. This constructional variant – one node in the network of schemas describing English ditransitives – specifically incorporates *send* as its predicate. At the same time, this constructional subschema is one node in the network of schemas describing *send* and the structural frames in which it conventionally occurs.

It would of course be pointless to ask whether this subschema – \[[send]][[NP]][[NP]]\ – belongs to the network describing the ditransitive construction or to the network describing *send*. It belongs to both and can properly be viewed from either perspective. This is one more indication that lexicon and grammar form a continuum of symbolic assemblies such that any specific line of demarcation would be arbitrary.

4.3. Lexical and constructional meaning

A major contribution of Goldberg’s (1995) monograph on Construction Grammar is her demonstration that grammatical constructions are independently meaningful and often responsible for essential aspects of a complex expression’s meaning. Their meaningfulness is not even contemplated (let alone anticipated) in theories of autonomous syntax, especially when constructions are viewed as epiphenomenal. It is however quite natural in construction grammar, where constructions consisting of form-meaning pairings are the primary objects of description.

The point is forcefully demonstrated by cases where a verb’s conventional semantic value does not support its occurrence in a particular construction, yet it does occur there, and the resulting expression is understood as if it did have the requisite meaning. The additional semantic specifications can only be supplied by the construction itself. The parade example, of course, is (12). Unlike *push*, for instance, *sneeze* does not usually occur in the “caused-motion” construction, nor does it have the conventional meaning ‘cause to move by sneezing’. The import of (12), however, is indeed that Sam caused the napkin to move by sneezing. It is thus concluded that the sentence inherits this aspect of its meaning from the grammatical construction itself.

(12) Sam sneezed the napkin off the table.
Let us see how this works from the standpoint of Cognitive Grammar. We need to examine how *sneeze* combines with the caused-motion constructional schema despite a certain conflict in specifications: the verb in the schema profiles the causation of motion, whereas *sneeze* profiles only the occurrence of a bodily function accompanied by the emission of sound, air, and microbes (whose motion is not at issue). Their combination is a matter of categorization, as previously shown in Figure 9 for the case of an uncategorized lexical stem being used as a noun. Here *sneeze* is used as a caused-motion verb. Since it does not have all the elements expected for the verb in this construction, the categorizing relationship is one of semantic extension (for which I use a dashed arrow) rather than elaboration or straightforward instantiation (solid arrow).

The use of *sneeze* in this pattern is diagrammed in Figure 17(a). The box at the top represents the caused-motion constructional schema, consisting of a caused-motion verb, a nominal which specifies its landmark, and a relational complement that specifies its path of motion. In contrast to the verb in this schema, *sneeze* has just one focal participant, by definition the trajector. The diagram is meant to suggest the emission of sound etc., and since the expulsion of air is relatively forceful, it has at least the potential to induce some further occurrence. This potential, however, is only latent and not at all a salient aspect of the meaning of this predicate. The double arrow representing force is therefore unprofiled (hence not shown in bold).
When *sneeze* is used in this construction, it is categorized by the schematic caused-motion verb. Since the two conflict in the nature of their profiling and trajector/landmark organization, the categorizing relationship is one of extension (--->). Certain correspondences are nonetheless established in mapping the standard of categorization onto the target: their trajectors correspond, and the profiled causal component of the schema is identified with the notion of force and latent causal potential inherent (though backgrounded) in the verb. In diagram (b) I show the result of their unification, i.e. of apprehending *sneeze* as the causal predicate in this construction. The emergent predicate profiles the causation of motion and specifies the requisite force as that inherent in a sneezing event.

A main point made by Goldberg is that *sneeze* is not itself a caused-motion predicate and does not have the meaning in Figure 17(b) as one of its senses. Once we recognize that constructions are themselves meaningful, we can accommodate (12) while ascribing to *sneeze* only the basic
meaning sketched in diagram (a). I accept her point as being both valid and significant. What I show in Figure 17 is merely its implementation in Cognitive Grammar.

The question then arises, however, of far we want to push this basic approach. It appears that Goldberg wants to push it to the extreme, or at least quite far. Her general position is that we should attribute as much of an expression’s meaning as possible to the construction and as little as possible to the verb. Positing for the verb a specialized meaning appropriate for a construction it appears in is something that should be done only as a last resort. For verbs she pursues the policy of maximizing “semantic parsimony”. “More generally, ...the semantics of... the full expressions are different whenever a verb occurs in a different construction. But these differences need not be attributed to different verb senses; they are more parsimoniously attributed to the constructions themselves” (Goldberg 1995: 13). Citing the examples in (13), she further points out the circularity of positing a distinct verb sense for every construction the verb appears in just because it appears in them. Instead, the verb is “associated with one or a few basic senses which must be integrated into the meaning of the construction” (Goldberg 1995: 11). In particular, (13c) and (13f) are cited as instances of this circularity, suggesting that kick is not to be ascribed a caused-motion or a ditransitive sense. I further recall that once (in a personal conversation) Goldberg objected to Figure 16 because multiple senses were posited for send.

(13) a. Pat kicked the wall.
   b. Pat kicked Bob black and blue.
   c. Pat kicked the football into the stadium.
   d. Pat kicked at the football.
   e. Pat kicked his foot against the chair.
   f. Pat kicked Bob the football.
   g. The horse kicks.
   h. Pat kicked his way out of the operating room.

As general values, it is hard to fault the view that parsimony is good and circularity bad. For the issues at hand, however, I believe that not only axiological but also empirical considerations are relevant. I have already argued that the dictum “the shortest grammar is the best grammar” cannot be applied simplistically, in isolation from other factors. If our goal is to characterize language in a way that properly reflects its actual mental representation, maximal “semantic parsimony” cannot automatically be as-
sumed – the shortest possible grammar may not be psychologically realistic. We cannot just assume that language processing and linguistic representations are maximally efficient and non-redundant. Moreover, positing particular verb senses is not in principle the circular affair that Goldberg makes it out to be. There is also a fundamental conceptual issue that needs to be addressed: what precisely does it mean to say that a verb has a particular sense? This notion is hardly self-explanatory, but obviously crucial to the issue at hand.

Succinctly stated, Goldberg’s strategy envisages a minimalist lexical semantics and favors treating every verb use as being analogous to the caused-motion use of *sneeze*, as in (12). Insofar as possible, the semantic nuances associated with occurrence in a particular construction (e.g. choice of landmark, or the extent of what is profiled within the conceptual base) are analyzed as being inherited from the construction and thus excluded from the single, minimal meaning ascribed to the verb itself. Now actually, I have no idea just how far “insofar as possible” might be. Although (in fairness) the phrase is mine, I am left with no clear notion of the range of cases for which Goldberg is willing to accept construction-appropriate verb meanings, or on what basis she would draw the line. It does however appear that she resists positing such meanings in certain cases where the verb’s occurrence in the construction is conventionally well established. These include the occurrence of *send* in the constructions represented in Figure 16, as well as the use of *kick* in (13c).

Despite my admiration and affection for the new editor of *Cognitive Linguistics* (with upper-case *c* and *l*), I believe this attitude to be problematic. It reflects certain ghosts from our theoretical past, ghosts which we might have thought to be exorcised from cognitive linguistics (with lower-case *c* and *l*). One is the notion that the shortest grammar is necessarily the best grammar. Another is minimalist lexical semantics, with the expectation of monosemey and the possibility of circumscribing linguistic meanings. Yet another is the assumption that particular aspects of meaning are exclusively assignable to particular elements, which in turn suggests – quite erroneously – that meanings are non-overlapping (an entailment of the building-block metaphor). I am not accusing Goldberg of holding these views, but merely noting that her attitude is reminiscent of them and for that reason alone ought to be carefully scrutinized.

One reason it is problematic is that it fails to reflect the exceptionality of using *sneeze* in the caused-motion construction, our reaction to it as being a noteworthy example. I am not saying that such uses are uncommon or unimportant – Goldberg has done us a service in pointing out that it is not
abnormal and is possibly quite prevalent for verbs to be used in constructions that do not precisely match their already established meanings. I do though have trouble accepting the notion that most verb uses are comparable to that of *sneeze* in (12). I have to regard the caused-motion use of *sneeze* as lying toward one extreme of a continuous spectrum in terms of how familiar it is for the verb to occur in the construction and how well the verb’s meaning fits the constructional meaning. The caused-motion use of *send* lies toward the opposite extreme of the spectrum. In contrast to (12), a sentence like *He sent a package to his cousin* represents a usage of *send* that is thoroughly entrenched and fully conventional. There is no reason whatever to suspect its occurrence in this construction is in any way remarkable, unanticipated, or inconsistent on the basis of its meaning. Use as a caused-motion predicate is utterly normal in the case of *send*, jarring in the case of *sneeze*. *Kick* lies somewhere in the middle of the spectrum. Although it may not be a prime example of a caused-motion predicate, and its use in this construction might not be the first that comes to mind, expressions analogous to (13c) are natural and familiar. I am certain I have encountered *kick* employed as a caused-motion expression on many occasions.

Suppose it is granted that *send* and *kick* are indeed conventionally established as occurring in the caused-motion construction, but it is nonetheless argued that the causation of motion (or at least its relative prominence) is contributed by the caused-motion construction itself, in the manner of Figure 17, rather than being an intrinsic aspect of their meanings. I find this very dubious. Apart from being gratuitous, it reflects the assumption that a particular aspect of meaning necessarily has just a single source (this is one manifestation of the exclusionary fallacy, discussed in Langacker 1987a: 28–30). But most importantly, it begs the fundamental question which has to be answered before we can even begin to address the empirical issue. The question, once more, is: what precisely does it mean to say that a verb has a particular sense? The answer I offer is a generalized version of the one given earlier (in regard to whether a language has lexical nouns and verbs). For me this can only mean that there exists a symbolic unit whose phonological pole consists of the form in question (call it F), and whose semantic pole consists of the meaning in question (call it M). In other words, it is simply a matter of whether this form-meaning pairing [[F]/[M]] constitutes an entrenched unit conventional in the speech community.

By this definition – the only one I can imagine in a usage-based framework – *sneeze* does not have a caused-motion sense, while *send* certainly does, and *kick* very probably. The reason is quite simple: entrenchment and
conventionalization of a verb’s occurrence in the caused-motion construction is equivalent to the verb having a caused-motion sense. This follows as a matter of definition, given an explicit account of the relationship between constructional schemas and the corresponding elements of expressions that invoke them.

To see this, consider once more the occurrence of sneeze in the caused-motion construction, as diagrammed in Figure 17. Taking this to be a novel usage, indeed a noteworthy one, sneeze does not have a conventionally established meaning fully appropriate for this construction. Its use in this construction induces its construal as a caused-motion predicate. By virtue of being categorized as a caused-motion predicate, as shown on the left in diagram (a), it is apprehended as such a predicate, as shown in diagram (b). The structure on the left in diagram (b) does indeed exhibit the symbolic pairing of the form in question, namely sneeze, with a caused-motion meaning, roughly ‘cause to move by sneezing’. Being novel, however, this is just a fleeting, one-time occurrence, not an entrenched symbolic pairing. For this reason the box enclosing it is drawn with rounded corners. Lacking the status of a conventional unit, it does not conform to the definition above. Its formulaic representation would instead be ([F]/(M)), where parentheses indicate novel structures.

Imagine, now, that force-dynamic sneezing becomes a teenage fad (like wearing caps backward). Teenagers take to doing it in order to annoy their parents. They go around sneezing ostentatiously, and try to dramatize its effect by using the burst of air to move light objects. If this should happen – and it very well might if we keep using examples like (12) – expressions of this sort could occur very frequently. In proudly describing their outrageous behavior, teenagers would start using sneeze in the caused-motion construction not only repeated but habitually. As a consequence, the entire assembly in Figure 17 would come to be entrenched and conventionalized within the speech community. This entails the development shown in Figure 18, where sneeze, apprehended as a caused-motion predicate, assumes the status of a fixed, familiar unit. By the definition above, sneeze then has a caused-motion sense.

Figure 18
This has not yet happened for sneeze, at least in the general populace. It may be happening in the smaller speech community of linguists, particularly cognitive linguists concerned with the issues before us. Examples like (12) occur so frequently in our discussions that the caused-motion use of sneeze is quite familiar and no longer jarring. Be that as it may, send has certainly undergone this process (if, indeed, there ever was a time when it did not occur in this construction), and kick has undergone it to a substantial degree if not completely.

The question of whether a verb which regularly occurs in a particular construction has a meaning appropriate for that construction tacitly presupposes that lexemes have meanings independently of the constructions in which they occur, and conversely, that constructions exist independently of the elements that occur in them. I believe this is the wrong way to look at things. In a usage-based perspective, both lexical items and constructions represent abstractions from expressions in which they are immanent and indissociable, as suggested by diagrams like Figure 16. In some cases the abstraction may be carried far enough that a construction with no specific lexical content, or a lexeme divorced from any particular structural frame, achieves some cognitive status. To the extent that this happens, the constructional schema or the lexical unit is nonetheless connected to (and immanent in) the more specific assemblies from which it emerges. When a lexeme’s occurrence in a particular construction constitutes a conventional linguistic unit, it is therefore pointless to ask whether it “has” the appropriate meaning. How could it not?

Finally, this account avoids the pernicious circularity objected to by Goldberg (1995: 12), that of “positing a new sense every time a new syntactic configuration is encountered and then using that sense to explain the existence of the syntactic configuration”. That is not at all the game I suggest we should be playing. First of all, at this level of description it is not a matter of explaining the existence of constructions, but merely describing them. Second, it is not the case that a new sense is posited every time a new configuration is encountered. I do not, for example, posit a caused-motion sense for sneeze (except hypothetically as part of an imagined scenario). It is only when a certain usage becomes thoroughly entrenched and conventionalized, becoming an established linguistic unit, that a construction-specific meaning is said to emerge. Moreover, these factors remove the element of circularity. It is not a lexeme’s mere occurrence in the construction that leads one to posit the appropriate sense, but the demonstration that its occurrence there is both familiar to individuals (psychologically entrenched) and conventional within a speech community. In principle these
are independent factors that can be ascertained and even measured objectively (e.g. by experimentation and corpus studies). Given real-world constraints, we may not always be certain in practice whether a given lexeme has a particular sense, but neither is this necessarily very important (being in any case a matter of degree subject to change and variation). What is more important is to achieve a clear general understanding of how lexemes and constructions are related to one another and why their semantic contributions cannot be neatly separated.

5. Conclusion

In this chapter, I have dealt with a variety of notoriously difficult and contentious issues and adopted positions with respect to them which can only be described as radical. Even today, even among construction grammarians and cognitive linguists, many scholars fail to accept them or to judge them as being worthy of serious consideration. Yet in my view they are simple, natural, straightforward, and undeniably true. Why would one want to believe anything else? They ought to represent the default assumptions, abandoned only with great reluctance in the face of overwhelming evidence. I have tried to show that classic, seemingly powerful arguments against them are invalid because of how they frame the issues. More broadly, I have tried to clarify a number of foundational issues that arise in construction grammar and distinguish its varieties. I do not expect to have resolved them to everybody’s satisfaction, or to have argued any point in a way that would satisfy a skeptic. I do however think that if we are going to disagree, we should at least have a clear idea of what it is that we ought to be arguing about.

Notes

1. While it is convenient for analytical purposes to represent schemas as separate boxes, they are more realistically thought of as being immanent in the structures which instantiate them. Ultimately they reside in aspects of the processing activity which constitutes the instantiations.
2. These are however bipolar, symbolic structures.
3. I am not talking about recognized parts, such as body parts, as these are characterized relative to the whole, and not every object has discernible parts (e.g. a rock).
4. These can be seen as two sides of the same coin. Conceptualizing a relationship establishes connections between entities, and these very connections afford a possible basis for grouping them (Langacker 1987b).

5. Infinitival to also tends to have a future orientation (see Wierzbicka 1988: ch. 1).

6. We do have a language-independent capacity to organize a scene in terms of primary and secondary figures – see the discussion in Langacker (1999b: 32).

7. Figure 8 corresponds to a schema slightly more abstract than the one labeled \([[\text{TRANSFER}][\text{NP}][\text{NP}]]\), since it does not indicate that the theme was originally under the trajector’s control.

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Section 2
A usage-based Cognitive Linguistics
Lectal variation and empirical data in Cognitive Linguistics

Dirk Geeraerts

Abstract

Current developments in Cognitive Linguistics include a growing interest in empirical models of linguistic analysis, and a heightened awareness of the social aspects of language. It is argued that the methodological relationship between these two tendencies involves the following two fundamental points. First, if Cognitive Linguistics is indeed a usage-based approach, and if the usage-based nature of Cognitive Linguistics naturally entails an investigation of actual language use as attested in corpora of non-elicited language behavior, then Cognitive Linguistics will necessarily have to come to grips with the social variation that will more often than not manifest itself in its material basis, the corpus. Second, if Cognitive Linguistics embraces a social conception of language, it should not restrict itself to an intuitive methodology (as advocated by Itkonen 2003), but it should adopt the observational approach that comes naturally with the use of large textual corpora.

1. Social and/or empirical?

Current developments in Cognitive Linguistics include the following two tendencies. On the one hand, there is a growing interest in empirical models of linguistic analysis. On the other hand, the social aspects of language are coming to the fore in a more outspoken manner than they used to. The two tendencies have, however, not yet come together, in the sense that empirical research into language variation is relatively scarce within Cognitive Linguistics: Cognitive Linguistics has hardly gone in the direction of empirical research into the social, sociolinguistic aspects of language variation.

In this chapter, I will argue that the development of such a ‘cognitive sociolinguistics’ is a natural, if not indispensable, next step in the develop-
ment of Cognitive Linguistics. The argument consists of two parts. On the one hand, starting from the increasing tendency towards the use of empirical methodologies, I will try to show that the usage-based nature of Cognitive Linguistics (which may be identified as the driving force of the turn towards empirical methods) inevitably leads to the incorporation of social variation in the scope of the enquiry. On the other hand, starting from the emergent interest in the social nature of language, I will try to establish that such an approach unavoidably requires an empirical methodology.

The latter point might seem rather obvious for anyone familiar with the standards of enquiry that are generally applied in sociolinguistics, but Esa Itkonen’s intriguing work on the epistemology of linguistics (Itkonen 2003) describes a point of view that goes directly against an empirical, observational approach to language as a social phenomenon. Itkonen argues, in fact, that studying language from a social perspective should be based on intuition rather than empirical observation. Strangely enough, Itkonen couples a conception of language that is radically opposed to the Chomskyan view (viz. a social one rather than a psychological one) with an intuitive methodology that would seem to be rather close to the Chomskyan reliance on introspective judgements. Such a surprising combination invites a closer look.

A considerable part of the chapter, then, will be devoted to a discussion of Itkonen’s views. Before reaching that section of the chapter, however, I will first succinctly describe the two tendencies in current Cognitive Linguistics that make up the starting-point of the discussion, and I will develop the first part of the argument, viz. the idea that the adoption of an empirical methodology in Cognitive Linguistics inescapably leads to the recognition of language variation as a crucial aspect of linguistic structure.

The line of argumentation pursued in the chapter is based on conceptual analysis rather than empirical observation: epistemological issues concerning linguistics will be discussed at a relatively high level of abstraction. The chapter is part of a set of articles exploring the methodology of a usage-based linguistics and its relationship with variational, sociolinguistically oriented research. Tummers, Heylen, and Geeraerts (in press) present an overview of the methodological state of the art in usage-based linguistics, concluding that an overall increase in the empirical and technical sophistication of the research conducted under the heading of ‘usage-based research’ is called for. Heylen, Tummers and Geeraerts (in prep.), on the other hand, have a look at some of the most sophisticated usage-based research currently available, and argue that even in that work, the variationist perspective is not yet adequately implemented. Providing a background for
these two more technically oriented papers, the present chapter looks at the matter from a principled, epistemological point of view.

2. Current developments in Cognitive Linguistics

With the increasing success of Cognitive Linguistics, the research framework is developing in different directions. Some of the current developments are mainly theoretical in the sense that they involve the fairly detailed theoretical or descriptive models that Cognitive Linguistics works with. The rise of Construction Grammar, for instance, or the continuing interest in blending and mental spaces, belong in this category. Other tendencies rather involve the broad methodological and disciplinary frameworks that research into Cognitive Linguistics is situated in. Next to the rapprochement with neurological research (epitomized by Lakoff’s recent work), the most important developments in this category are the growing interest in empirical methods, and the increasing attention paid to the social aspects of language.

In this paragraph, each of these two tendencies will be briefly presented. Concluding the paragraph, it will be pointed out that the two tendencies have not yet converged: empirical research into the social, sociolinguistic aspects of language variation is relatively scarce within Cognitive Linguistics.

2.1. If we understand empirical methods to refer to forms of research that (like corpus linguistics and experimentation) do not rely on introspection and intuition but that try to ground linguistic analysis on the firm basis of objective observation, then we can certainly see an intensification of the appeal of such empirical methods within Cognitive Linguistics. It suffices to have a look at some of the thematic symposia organized over the last few years: the Empirical Methods in Cognitive Linguistics workshop held at Cornell University in May 2003, the theme session on the use of corpora in Cognitive Linguistics organized during the ICLC8 in Logroño, July 2003, the workshop on the necessity of experimental methods in semantics organized during the Twentieth Scandinavian Conference in Linguistics at the University of Helsinki in January 2004, the choice of experimental and empirical methods as the focus theme of the Seventh Conference on Conceptual Structure, Discourse, and Language at the University of Alberta in
October 2004 – all of these testify to the growing importance that the Cognitive Linguistics community attaches to an empirical methodology.

The theoretical background of this development is provided by the growing tendency of Cognitive Linguistics to stress its essential nature as a usage-based linguistics: the central notions of usage-based linguistics have been programmaticalized in different publications (Bybee and Hopper 2001a; Croft and Cruse 2004; Kemmer and Barlow 2000; Langacker 1990; Tomasello 2000), and a number of recent volumes show how the programme can be put into practice (Barlow and Kemmer 2000; Bybee and Hopper 2001b; Verhagen and Van de Weijer 2003). The link between the self-awareness of Cognitive Linguistics as a usage-based form of linguistic investigation and the deployment of empirical methods is straightforward: you cannot have a usage-based linguistics unless you study actual usage – as it appears in corpora in the form of spontaneous, non-elicited language data, or as it appears in an on line and elicited form in experimental settings.

As a first nuance, it has to be admitted that the empirical aspects of usage-based linguistics still often remain programmatic: in many cases, a lot more methodological sophistication will have to be brought in than is currently available. The type of quantitatively well-founded corpus-based investigations that may be found in the work of Gries (2003), Grondelaers (2000), Grondelaers, Speelman, and Geeraerts (2002), Speelman, Grondelaers and Geeraerts (2003), Stefanowitsch (2003), and Stefanowitsch and Gries (2003) is still rather exceptional.

As a second nuance, we should note that the recent rise of interest in empirical methods does not imply that empirical approaches were absent in the earlier stages of Cognitive Linguistics. The methodology of European studies in Cognitive Linguistics in particular has tended to be more corpus-based than the early American studies, which were predominantly introspective. The use of corpus materials (which seems to have come to the attention of the broader community of Cognitive Linguistics only since Kemmer and Barlow 2000) was already part of early European studies like Dirven and Taylor (1988), Geeraerts, Grondelaers, and Bakema (1994), Goossens (1990), Rudzka-Ostyn (1988), and Schulze (1988). Early experimental studies, on the other hand, are represented by the work of Gibbs (1994 and many more), and Sandra and Rice (1995). On a more general methodological level, a defence of an empirical approach is found in Geeraerts (1999). In this respect, what is changing is not so much the presence of empirical research as such, but rather the extent to which the belief in such a methodology is shared by Cognitive Linguists at large.
2.2. Language variation has been studied in Cognitive Linguistics (and adjacent approaches) primarily from three points of view: from a diachronic perspective, including grammaticalization research (see e.g. Bybee 2001; Geeraerts 1997; Heine 1991; Hopper and Traugott 1993), from a comparative and anthropological point of view (see e.g. Kövecses 2000; Levinson 2003; Palmer 1996; Pederson 1998), and from a developmental point of view (see e.g. Diesel and Tomasello 2001; Tomasello 2003). Language-internal variation and sociolinguistic diversity has been much less studied, but still, we may note a number of developments within Cognitive Linguistics that are likely to contribute to an increased interest in sociolinguistic research.

First, there is the interest in cultural models and the way in which they may compete within a community: see e.g. many of the papers collected in Dirven, Frank, and Pütz (2003), and earlier work collected in Holland and Quinn (1987). In works such as Lakoff (1996), this approach takes on a critical aspect that brings it close to the tradition of ideological analysis known as Critical Discourse Analysis. More examples of this approach may be found in Dirven, Frank and Ilie (2001), and Dirven, Hawkins, and Sandikcioglu (2001).

Second, it has recently been pointed out (Berthele 2001, Geeraerts 2003) that such models may also characterize the beliefs that language users entertain regarding language and language varieties. In this way, Cognitive Linguistics may link up with existing sociolinguistic research about language attitudes.

Third, there is a growing tendency in the theoretical conception of language entertained by Cognitive Linguistics to stress the social nature of language. Researchers like Harder (2003), Sinha (1999), Sinha and Jensen de López (2000), and Zlatev (2001, 2003) emphasize that the experientialist nature of Cognitive Linguistics does not only refer to material factors (taking embodiment in a physical and physiological sense) but that the cultural environment and the socially interactive nature of language should be recognized as primary elements of a cognitive approach.

It might seem that these socially oriented forms of Cognitive Linguistics would naturally lead to the adoption of the quantitative, empirical methodology that is dominant in sociolinguistic research at large. However, quantitative empirical studies of variational phenomena are relatively scarce in Cognitive Linguistics. In the realm of lexicological investigations, the research tradition started in Geeraerts, Grondelaers, and Bakema (1994) and
continued in works such as Geeraerts, Grondelaers, and Speelman (1999), Speelman, Grondelaers, and Geeraerts (2003), integrates theoretical ideas from Cognitive Linguistics with a variational perspective and a corpus-based methodology. Further, a number of researchers have started to investigate social variation outside the lexical realm: see e.g. the work by Kristiansen (2003) on phonetic variation, and the studies carried out by Berthele (2004) on differences in syntactic construal between dialects. Recent work by Grondelaers (2000) and Grondelaers et al. (2002) focuses on grammatical phenomena whose distribution is determined by a combination of internal (structural or semantic) and external (contextual or sociolinguistic) factors.

All in all, however, these attempts to merge a sociolinguistic interest with an empirical methodology within the overall framework of Cognitive Linguistics remain fairly isolated. In other words, although one might expect a convergence of the empirical trend mentioned in 2.1 and the social perspective, the two tendencies have not yet really found each other. But should they? In the next two paragraphs, we shall explore the possible motivations for (and against) a convergence of the usage-based approach and the variational approach.

3. Empirical implies social

There are at least two reasons why the empirical, usage-based approach in Cognitive Linguistics cannot evade the study of language variation.

3.1. The usage data that Cognitive Linguistics, as a self-styled usage-based approach, is confronted with, automatically include sociolinguistic variation. Let us assume, for the sake of simplicity, that the primary empirical source for a usage-based approach to linguistics consists of corpus materials. (This assumption is made for the sake of the demonstration only. Other empirical data, like experimental data, will obviously contribute just as well to the usage-based perspective.) More often than not, the corpus will not be internally homogeneous: because the texts collected for the corpus come from various sources, it will not be known in advance whether the variation that may be observed in the corpus is due to lectal factors or not. (The term lectal is used here to refer to all types of language varieties or lects: dialects, regiolects, national varieties, registers, styles, idiolects, whatever). As such, filtering out the effects of such factors will be neces-
sary for any Cognitive Linguistic attempt to analyse the usage data – even if the analysis is not a priori interested in lectal variation.

The work by Grondelaers mentioned at the end of the previous paragraph is a case in point. Referring to Ariel’s (1990) ‘Accessibility Theory’, he analyses the intriguing Dutch particle er as an inaccessibility marker: it signals that the clause-initial adjunct contributes less to accessibility than one might expect; in terms of processing cost, it signals something like “don’t invest too much in inferencing on the basis of the adjunct”. Grondelaers goes on to show that, accordingly, the presence or absence of er is determined both by grammatical factors (the degree of specificity of the verb, for instance) and by discursive factors (like noun phrase persistence). But from a variational point of view, even more is involved: there appear to be differences between the use of er in Belgian Dutch and Netherlandic Dutch, and these differences have to be assessed (and when they are significant, factored out) before further steps in the analysis can be taken. Overall, the variability in the use of er is multidimensionally determined by many factors at the same time – and factors of different kinds at that. Technically speaking, this implies that the quantitative analysis of the corpus data has to be of a multifactorial kind. (Specifically, Grondelaers uses logistic regression.)

3.2. But the line of reasoning in 3.1. is, if one wishes, a negative one: it indicates why a confrontation with lectal variation cannot be avoided once the usage-based position is taken seriously, but it does not give you any positive reasons for incorporating lectal variation as an integral part of the usage-based approach. So, what would be the compelling motives for a usage-based Cognitive Linguistics to include lectal variation?

The social aspects of meaning constitute a specific form of meaning. To understand why this is the case, we should have a look at the various types of lexical meaning that may be distinguished, but this in turn necessitates a methodological analysis of how different types of meaning may be distinguished at all.

Let us start from the observation that there is a marked bias in lexical semantics towards the study of denotational meaning, i.e. that part of the meaning of a word that contributes to the truth-functional and referential properties of the sentences (specifically, the statements) in which the word occurs. Although it is generally accepted that other types of meaning may be distinguished, there is no agreement as to the classification of those meanings, and there is not much continuity in the research devoted to it.
Existing attempts at classification generally suffer from unclarity about the principles lying at the basis of the classification. Furthermore, the existing classifications often differ considerably, terminologically as well as with regard to the distinctions they draw.

The denotational meaning of a word is also referred to as its denotative, referential, descriptive, cognitive or logical meaning. The denotational meaning of a word does not coincide with the word’s reference (the extra-linguistic entities, situations, relations, processes etc. that it refers to), but corresponds with its linguistic sense (the informative content of the word), or at least that part of its sense that contributes to the truth-functional properties of the larger expressions in which the word features (given the fact that the notion ‘sense’ may be used to indicate the word’s informative value as a whole, i.e. including non-denotational types of meaning). The same distinction is also expressed by saying that the denotational meaning of a word coincides with its intension as opposed to its extension.

If it can be accepted that the denotational meaning type is the basic one, criteria for distinguishing non-denotational meanings should take into account circumstances where the denotational meaning does not suffice for the description of the meaning of an item. There would basically seem to be two such criteria: distinct types of non-denotational meaning should only be posited, first, to describe the differences in informative content between lexical items that have the same denotational meaning, and second, to describe the informative content of lexical items that lack denotational meaning.

The first criterion is the basic one, in the sense that it has the widest range of application; it leads to the postulation of, for instance, an emotive type of meaning to explain the distinction between denotationally synonymous items such as *Mexican* and *greaser* or *Arab* and *carpet flyer*. The second criterion is a subsidiary one; as it applies mostly to interjections and interjection-like elements (such as *hi!*, whose value as a greeting expression is not a matter of denotational meaning), its scope is more restricted than that of the first criterion. The way in which the criteria are formulated presupposes that an independent characterization of the notions ‘denotational meaning’ and ‘informative content’ is possible. While the former has been given in terms of truth-functional properties, the latter involves the contribution of a word to the communicative value of an utterance as a whole.

Applying the first criterion to the distinction between the neutral term *Mexican* and derogatory terms such as *greaser* leads to the postulation of an *emotive* type of meaning. This kind of meaning (which is also called
‘expressive’ or ‘affective’) involves that part of the meaning of an item that communicates the speaker’s evaluation of, or his attitude towards the referent of the expression. According to the second criterion, an expression of pain such as ouch!, or an expression of disgust such as ugh! (which both have no identifiable denotational meaning) also illustrate the emotive type of lexical meaning.

The notion ‘stylistic meaning’ is necessary to distinguish between a neutral word such as bicycle and an informal word such as bike: they are denotationally synonymous, but the latter will normally be used in other, less formal circumstances than the former. As such, stylistic meaning appears to communicate something about the speaker’s assessment of the speech situation, including his relationship to the addressee (such as when an increase in the familiarity between speaker and addressee entails the use of more informal terms). To the extent that particular stylistic characteristics correlate with permanent speaker characteristics rather than with contextual variables (as in the case of typically lower class or upper class items), stylistic meaning communicates something of the speaker’s overall position within the speech community. Differences in emotive meaning may clearly correlate with differences in stylistic meaning (in the sense that, for instance, Mexican is stylistically neutral whereas greaser is not), but the distinction between bicycle and bike (where no emotive difference can be noticed) illustrates the independence of the notion of stylistic meaning.

Although gentleman as used in forms of address is denotationally synonymous with man, the latter cannot be substituted for the former in expressions such ladies and gentlemen. If, then, the discursive meaning of a lexical item is defined as that part of the item’s informative value that communicates something of the speaker’s interactive intentions with regard to the addressee, specifically regarding the establishing, maintaining, and completing of the communicative interaction itself, it should be clear that (taking into account the second criterion discussed above) expressions such as hallo?, hallo!, hi!, bye-bye, and so on similarly illustrate the notion of discursive meaning. Whereas the emotive and (to a smaller extent) the stylistic meaning types are quite common in classifications of types of meanings, the discursive type often passes unnoticed. It is included here to show how a systematic application of distinctive criteria might lead to improvements with regard to the existing classifications (but its inclusion is not meant to exhaust the possible modifications that such a systematic endeavor might entail).
Given this classification of types of meaning, the general argument will be clear. First, lectal variation lies at the basis of a specific, non-denotational type of meaning. The difference between, say, a dialectal form and a standard form is just as expressive as the difference between stylistic variants of the type described above. In fact, to the extent that stylistic variation shows up in the distribution of the relevant forms over different registers and communicative situations, stylistic variation is part of a broadly defined category of lectal variation – and conversely, the notion of lectal variation generalizes over dialects, sociolects, style levels, national varieties of standard languages, and so on. Second, given that lectal variation motivates a specific type of meaning, and given that Cognitive Linguistics profiles itself as a meaning-oriented form of linguistics, Cognitive Linguistics cannot but include lectal variation.

This meaning-based argument could be presented in different variants. It could be formulated, for instance, in terms of the functions of language (and Cognitive Linguistics, to be sure, is a functional theory). Language variation has a socially expressive function: it may signal group membership and social distance, and any functional theory will have to account for this specific function of language (a point long realized by Systemic Functional Grammar). Further, the argument could be recast in terms of the experiential conception of meaning that is typical for Cognitive Linguistics. The experiential foundation of language includes the social and cultural background of the language users, just like it does the physiological or neurological embodiment of cognition.

More important than the variants of the fundamental argument, however, are the objections that could be aimed against it. The basic objection would probably be that the semantics-based argument only applies to the extent that the expressive values of the lectal variants belong to the same language. Stylistic meaning involves variation within a single language system: the average language user is familiar with the different expressive power of *homosexual* and *queer*, and would be able to apply the difference functionally, by tuning his language to different communicative situations. Other forms of lectal variation, however, would not necessarily belong to the same linguistic system: dialects and standard languages, for instance, could be considered different language systems. If lectal variation of this type is taken to define different language systems, then an analysis of lectal variation would only have to be included in Cognitive Linguistics as a way of delimiting a specific language (or linguistic system) as the object of enquiry. That is to say, the necessity to identify lectal variation would again have a negative, delimitative motivation rather than a positive one.
Counterarguments are not difficult to find, however. While the overall structure of the argument is correct, its practical application relies on a questionable assumption, viz. that linguistic systems are easy to delineate. Where exactly does one linguistic system end and where does another begin? Would there be, for instance, a principled way of deciding whether to include stylistic variation in the language system and not other forms of lectal variation? We cannot rely on the view that stylistic variation could be consciously employed by most language users whereas dialect variation could not because most speakers master only one dialect. In actual practice, many language users have an active command of more than one sociolect and/or dialect, and actively switch between the various elements of their lectal repertoire. At the same time, the repertoire of lects of the individual speakers in a linguistic community is not the same. Different people master different dialects, sociolects, technical sublanguages, stylistic registers, and even if we consider a single lect as a linguistic system, the individuals’ knowledge of the lect may diverge considerably. Just think of the standard variety of any language: speakers command the variety to different degrees, and it would probably not correspond to our intuitive understanding of what the language (or the lect) is if we were to restrict ‘the language’ to the least common denominator of all the individual knowledges.

In short, homogeneity in a linguistic community is largely a fiction, and we’d better think of a linguistic community not in terms of a single repertoire of linguistic means of expression shared by all members of the community, but rather as a conglomerate of overlapping repertoires. In dialectology, such a model is known as a diasystem (Weinreich 1954), and it seems appropriate to extrapolate the notion to lectal variation at large. Within a diasystem, then, there will be more meaningful variation to cover than would be the case according to a more restricted conception of the notion ‘linguistic system’.

4. Social implies empirical

The preceding pages have shown that an empirical, more specifically, corpus-based approach to language inevitably implies a social perspective. But is the reverse the case as well? If one accepts the fundamentally social nature of language, is an empirical methodology inevitable? The whole contemporary tradition of empirical sociolinguistic research would seem to suggest that it is, but Itkonen (2003), in a book that can be read as a summa of his life-long involvement with the epistemology of linguistics, argues to
the contrary. According to Itkonen, linguistics – as the study of language as a social phenomenon – is based on intuition rather than observation. So could we counter Itkonen’s position? Let us first present his approach in more detail.

The primarily social nature of language (which is fully endorsed by Itkonen) entails that linguistic description is the description of conventions, of a system of social norms. Norms, however, have a highly specific epistemological status. Specifically, we have to take into account a distinction between rules and regularities. A rule, as describing what ought to be done, differs fundamentally from a regularity, which describes tendencies in what is actually done. A hypothesis about observable regularities may be incorrect (and may thus be falsified) but a rule cannot be falsified, it can only be broken:

We have to establish a distinction between a rule sentence A, which describes a rule (or norm), and an empirical hypothesis B, which describes an (assumed) regularity: A = “In English, the definite article (i.e. the) precedes the noun (e.g. man)” vs. B = “All ravens are black”. The difference between A and B consists in the fact that B is falsified – in principle – by spatiotemporal occurrences, namely non-black ravens, whereas A is not, and cannot be falsified. The utterance of a sentence like *Man the came in does not falsify A. Why? – because this sentence is incorrect (Itkonen 2003: 15)

But if rules are epistemologically different from descriptive statements, the methodology of studying norms is different from the method of the empirical, descriptive sciences. Referring back to Popper’s (1972) tripartite ontology consisting of physical states and events, versus psychological states and events, versus social rules and norms, Itkonen introduces an epistemological distinction between respectively observation, introspection and intuition. Intuition, the appropriate method for the investigation of norms, is basically an inspection of one’s own knowledge of the linguistic conventions. “When one is describing one’s own native language, data-gathering consists, not in experimentation/observation but in trying to remember something that one in principle knows already. Notice also that one does not try to remember what someone has said in fact, but what ought to be said” (Itkonen 2003: 40–41). Itkonen’s distinction between introspection and intuition correlates with his virulent opposition (sustained for over three decades already) to the Chomskyan conception of language. Itkonen exposes Chomsky’s psychologistic conception as an ontological as well epistemological category mistake. Language belongs to the world of
social norms, not to the world of psychological states – and hence intuition rather than introspection is required.

In actual practice, however, the ‘intuitive’ approach advocated by Itkonen does not seem to differ all too much from the ‘introspective’ approach of generativism: the basic data of linguistics consists of grammatical sentences, that is, sentences judged grammatical on the basis of one’s knowledge of the linguistic conventions. Itkonen’s rejection of Chomskyanism, in other words, is a metascientific rather than a practical one.

The fact, however, that an explicitly social conception of language may be associated with an ‘introspective’ (‘intuitive’ in Itkonen’s terminology) methodology, casts an interesting new light on the different epistemological positions that may be distinguished within contemporary linguistics. These positions are distinguished according to two dimensions: ontologically, according to whether language is considered a social rather than a psychological phenomenon, and methodologically, according to whether an empirical/observational rather than an introspective/intuitive approach is taken.

These dimensions define four positions, of which we have encountered three already. The fourth position is illustrated by a recent development within generative grammar, going in the direction of empirical, observational research. (For basic references, see Bard, Roberston, and Sorace 1996; Cowart 1997; Keller 2000). Recognizing the difficulties with individual grammaticality judgements, a survey-like approach is added to the generative methodology: rather than merely using the linguist’s own knowledge, grammaticality judgements are distilled from collections of judgements taken from many speakers of the language. Nowhere, however, do the proponents of this approach question the fundamental generative conception of language as a genetically determined psychological phenomenon.

The four positions, then, are as follows:
- social, – empirical: the basic Chomskyan approach
- social, + empirical: the observationally enriched generative approach
+ social, – empirical: Itkonen’s approach
+ social, + empirical: the approach defended here.

The point of view that I would like to uphold here does not deny the essentially social nature of meaning, but it does not accept that an observational methodology is, on grounds of epistemological principle, inappropriate for studying language from a social perspective. From a traditional sociolinguistic perspective, such a socio-empirical method would need no argumentation: it is simply the dominant attitude in contemporary sociolin-
From the perspective of Cognitive Linguistics, however, which is only gradually turning towards variational linguistics and a social conception of language, it may be useful to defend the socio-empirical method against the fundamental objections voiced by Itkonen. Although it is difficult to do full justice to Itkonen’s richly argued book in the context of a single paper, I will offer two arguments to defend the use of observational methods in the variational linguistics of language as a social norm. As in the previous paragraph, there is a gradation between the arguments. The first one (which will be presented only summarily) implies that the use of observational methods is at least legitimate in socially oriented forms of linguistics. The second argument (which will take up somewhat more space) implies that a non-intuitive analysis of linguistic conventions is not just legitimate but also indispensable. In both cases, the initial argument is relatively simple, but a refutation of Itkonen’s (presumably) counterarguments will require a more careful analysis.

4.1. If language is to be conceived of as a system of social conventions or norms, and if studying such norms by necessity has to rely on intuition, empirical sociological research would seem to be a contradiction. The observational investigation of social conventions does however exist, in the social sciences at large. So why would the observational investigation of language norms not be legitimate too? If we think of norms as patterns of expectations that regulate (whether consciously or unconsciously) the behavior of groups of individuals, studying their actual behavior will obviously shed light on the underlying norms. To be sure, such an observational approach is not necessarily restricted to behavior in the strictest sense: it is well known from sociolinguistic research that language attitudes (as a reflection of what people think they do or should do, in possible contrast with what they actually do) may and should be studied empirically as well.

Itkonen would probably counter that in all of these cases, the observational research is grounded on a pre-observational (and normative) knowledge of the conventions being studied.

Let us assume that we are about to start a series of experiments meant to discover those unconscious mechanisms that make it possible for people to understand facts of synonymy. Is it not obvious that we, as psychologists, must already understand the concept of ‘synonymy’? And is it not also clear that, since we possess this understanding before any experiments have been carried out, it must in some sense be of pre-experimental nature? (Itkonen 2003: 109)
But such pre-experimental notions could just as well be termed ‘pre-theoretical’, and then the argument loses its strength. Those who believe in an observational methodology would not claim that the empirical method is a purely bottom-up affair starting entirely from scratch. Rather, it is a process that may well find its basis on a pre-theoretical level, but that intends precisely to refine the pre-theoretical concepts in such a way that they may attain theoretical status. The pre-theoretical, pre-experimental notions are accepted as a point of departure, but they will be transfigured in the course of the enquiry. An investigation into ‘synonymy’, for instance, could reveal that what we pre-observationally assume to be a single phenomenon, will have to be split up into different, albeit overlapping phenomena (involving, probably, the denotational, connotational, collocational, variational properties of the words in question).

More generally, the relevance of an observational, corpus-based methodology for conceptual analysis (a fortiori, for the analysis of any pre-experimentally given notion of the type that Itkonen refers to) has been well established in prototype-theoretical lexical research. I have argued elsewhere (Geeraerts 1994, 1999) that the non-observational, intuitive approach to semantic analysis defended by Wierzbicka (1985 and many other monographs) and the Natural Semantic Metalanguage approach is demonstrably inferior to a corpus-based approach. Even when taking for granted that the semantic interpretation of the corpus data may have to be done largely intuitively, the very presence of the corpus materials constrains and enriches the interpretation process to an extent that cannot be achieved on a purely intuitive basis.

To see how this point applies to Itkonen’s normative conception of grammar, consider the following line of reasoning. First, we do not want to exclude contextual restrictions on norms: the choice of the correct linguistic expression may involve contextual factors of various (grammatical, semantic, discursive, pragmatic) kinds, and if that is the case, the sanctioning factors are part of the norm.

Second, given the relevance of such contextual factors, the intuitive acceptability of an expression will depend on the extent to which the language user will be able to spontaneously imagine the relevant context. Following Itkonen’s terminology, we should perhaps say that a speaker has to ‘remember’ the relevant context – given that the intuitive method is by definition applied ‘in vitro’, that is to say, independent of an actual spatio-temporal context of use.

But third, there is no guarantee that the relevant context can be easily imagined or remembered. Even when the speaker is in complete command
of the language, i.e. even when he would make all the right, correct, normative decisions in actual contexts of use, he need not be able to recall or reconstruct those contexts in an vitro situation. And when it is difficult to come up with a sanctioning context, speakers may hesitate to pass an unambiguous grammaticality judgment. In this sort of situation, the uncertainty would not be a primary datum, but would itself result, ironically perhaps, from the methodology chosen as a starting-point. Ironically, the intuitive method, being insufficiently precise with regard to the sanctioning contextual factors, would prime for uncertainty.

4.2. Although Itkonen talks of ‘intuition’ rather than ‘introspection’, the grammatical methodology he advocates is in essence identical to the approach that is the cornerstone of generative grammar – and, in fact, most traditional forms of grammatical analysis: to identify the grammatical patterns in a language by concentrating on sentences that pass the grammaticality test. This implies that all the standard objections against the use of ‘introspective’ grammaticality judgments (see Schütze 1996) could also be levelled against Itkonen’s ‘intuitive’ approach. In particular, the existence of uncertain grammaticality judgments (doubts and hesitations in one informant’s judgments) and conflicting grammaticality judgments (differences between different informants) will have to be taken into account. In the generative tradition, as mentioned above, the recognition of these difficulties has led to a modest acceptation of empirical data gathering, even though the step towards a less psychologistic and less rule-based grammatical model has not yet been taken. For Itkonen, however, the rejection of an empirical methodology is a matter of principle. Shouldn’t we conclude, then, that the well-known unreliability of a purely intuitive/introspective methodology radically undermines Itkonen’s position?

Things are not that simple, however, because Itkonen faces the difficulties by explicitly accepting the existence of borderline cases:

Certainty remains confined to the ‘core’ area of the language... The data known with certainty coincide with so-called clear cases, and the data not known with certainty coincide with less-than-clear cases. The boundary between the two is necessarily vague; “but to deny a distinction because of its vagueness is, of course, a semantic naïveté of the first order” (Pap 1958: 401; quoted in Itkonen 2003: 33–34)
This however raises the question – only marginally dealt with by Itkonen – what the status of borderline cases in the normative system could be. Why do borderline cases occur? I will argue that there are two suggestions in Itkonen’s book of ways to explain the existence of unclear cases, but that a closer scrutiny of each of them leads to the conclusion that an empirical investigation of the vague normative frontier is unavoidable.

4.2.1. Borderline cases (as reflected in the intuitive uncertainty of the language users) may be due to competing norms. Immediately following the quotation just given, Itkonen (2003) notes:

The fact that knowledge becomes less than certain can also be expressed by saying that in such a case the social control inherent to norms decreases, as was pointed out by David Hume (1972 [1740]: 236) in his discussion of (lack of) norms governing the situation where possession of an abandoned city has to be taken (Itkonen 2003: 34).

To get a better grasp of the argument, let us have a look at the original passage in Hume’s *A Treatise of Human Nature*.

Two Grecian colonies, leaving their native country, in search of new feats, were inform’d that a city near them was deserted by its inhabitants. To know the truth of this report, they dispatch’d at once two messengers, one from each colony; who finding on their approach, that their information was true, begun a race together with an intention to take possession of the city, each of them for his countrymen. One of these messengers, finding that he was not an equal match for the other, launch’d his spear at the gates of the city, and was so fortunate as to fix it there before the arrival of his companion. This produc’d a dispute betwixt the two colonies, which of them was the proprietor of the empty city and this dispute still subsists among philosophers.

The common, pre-existing norm involved in this case may be defined as “The group that is the first to (symbolically) occupy the abandoned city or the empty territory, takes lawful possession of it”. However, it appears that there is an unclarity in the accepted norm: should one say that he symbolically occupies the city who is the first to plant his arms, or he who materially gets there first?
While this type of underspecification of norms may indeed be the background of unclarities, there are two additional points to recognize. First, the unclarity gives rise to a debate in which competing specifications of the initially underspecified norm are compared. And second, the debate immediately takes on a social form: it is a debate between competing groups. What we see in Hume’s example is not merely underspecification, but the emergence, from the unclarity, of socially competing norms. An approach that prides itself on taking seriously the social aspects of language, cannot simply accept the unclarities as inevitable side effects of the principled underspecification of norms, but should take pains to analyse the social dynamism that such vagueness may trigger.

Given the recognition, then, that even within a community sharing an overall system of norms, competing norms may emerge (and subgroups may compete about norms), a further step needs to be taken, and competing norms have to be studied more systematically. However, the recognition of a possible competition between alternative norms, and the crucial role such competition may play in explaining the dynamics of language, are unfortunately absent from Itkonen’s discussion, as is a reference to Renate Bartsch’s (1987) fundamental work on linguistic norms. Bartsch explains that the ‘highest norm of communication’ may override more specific norms. The highest norm of communication is described as follows:

All specific linguistic norms are justified relative to the highest norm of communication, which is: ‘Express yourself in such a way that what you say is recognizable and interpretable by your partner in agreement with what you intend him to understand’. And, correspondingly, for the hearer it is: ‘Interpret such that the interpretation will be in agreement with what the speaker intends’ (…)

There are situations in which rigid application of a special norm N just hinders the satisfaction of the highest norm, or makes it difficult to conform to it. In such a case, correctness with regard to N has to be subjugated to correctness with regard to the highest norm (Bartsch 1987: 212)

Semantic change and prototypicality effects, for instance, arise from the local necessity to find an expression for a conceptual nuance or a novel idea. Using an existing expression with a new meaning, even if only slightly different from the conventional readings, is by definition a form of normative deviance, but only with regard to the conventions that instantiate the global communicative norm, not with regard to this highest norm as
such. With regard to the global norm itself, the deviant expression is entirely legitimate (assuming of course that it is successful). Innovation in language deviates from the existing conventions, but the deviation may be licensed by a higher norm.

Bartsch’s line of reasoning demonstrates that competition between norms has to be taken into account even if the norms do not (as in Hume’s example) correlate with social factors. Now, if we accept the existence of competing norms, normative uncertainty becomes all the more explicable: the tension between normative alternatives is likely to induce some hesitation on the part of the language user when prompted for a normative statement. This also implies that the existence of competing norms calls for an observational approach. The very hesitation of the individual language user indicates that his intuition breaks down, so to speak; a clarificatory analysis of the competing norms will therefore have to be based on a methodology going beyond intuition.

4.2.2. The emergence of undecided cases may be due to properties of the language user, i.e. the speaker may have an incomplete command of the language. Such a possibility is explicitly envisaged by Itkonen, who points out that the intuitive approach to linguistic analysis presupposes that one has mastered the language. On the one hand, as quoted earlier, “When one is describing one’s own native language, data-gathering consists, not in experimentation/observation but in trying to remember something that one in principle knows already. Notice also that one does not try to remember what someone has said in fact, but what ought to be said” (Itkonen 2003: 41). But on the other hand, “As long as a language is being learned, it is being discovered, but once it is known, it has to be remembered” (Itkonen 2003: 41). The intuitive certainty that grammatical methodology is based on presupposes mastery of the language. So, if there is uncertainty, this may be due to incomplete mastery of the language, to the fact, in other words, that someone is still in the learning stage.

But if we push this possibility to the extreme, we may have to recognize that no individual speaker has a complete command of the language. Consider vocabulary knowledge: who could claim to know all the words of the language? If we demarcate the lexicon of the language, for instance by using a reference dictionary, we would have difficulty finding speakers with an active (or even passive) knowledge of the whole vocabulary – perhaps not even the lexicographers compiling the dictionary would pass the test. If so, the ‘clear cases’ argument breaks down, at least if we assume
that the logic of the argument is of the ‘greatest common factor’ rather than a ‘lowest common multiple’ kind: the relevant clear cases are those that are shared by all speakers of the language, precisely because they are supposed to master the language. Following this logic, however, the common vocabulary might be very small, and a number of words that at least some of us would intuitively expect to be part of the language (procrastinate, phenakistoscope, planigale ...), might fall outside of it. Conversely, if we try to salvage the vocabulary, we seem to sacrifice the size of the linguistic community, in the sense that we might be left with just a few speakers with a sufficiently large lexical knowledge.

The only way out of the dilemma (forfeiting the speakers or forfeiting the words, downsizing the linguistic community or downsizing the vocabulary) would be to accept a diasystemic view in which, as mentioned earlier, the linguistic community is defined not in terms of a single repertoire of linguistic means of expression shared by all members of the community, but rather as a conglomerate of overlapping repertoires. But describing such a situation would necessarily imply adopting an empirical, observational methodology, precisely because the descriptive linguist could not lay claims to complete knowledge of the diasystem.

We see, in short, that the notion of a social diasystem that played an important role in section 3, where an empirical methodology was taken for granted but was shown to lead rather inevitably to a variational investigation of the language, turns out to be just as important when we reverse the perspective and argue, taking the social nature of language for granted, that an empirical methodology is indispensable for the social perspective.

5. Cognitive Sociolinguistics?

Two points have been argued in the preceding pages. First, if Cognitive Linguistics is indeed a usage-based approach, and if the usage-based nature of Cognitive Linguistics naturally entails an investigation of actual language use as attested in corpora of non-elicited language behavior, then Cognitive Linguistics will necessarily have to come to grips with the social variation that will more often than not manifest itself in its material basis, the corpus. Specifically, a variational analysis is unavoidable to factor out lectal variation from the corpus data, but it is also a necessary and natural part of Cognitive Linguistics, to the extent that lectal variation underlies a specific form of linguistic meaning.
Second, if Cognitive Linguistics embraces a social conception of language (as it is compelled to do if it is to avoid the pitfalls of epistemological solipsism), it should not restrict itself to the intuitive methodology advocated by Itkonen or the introspective approach inherited from generativism, but it should adopt the empirical approach that comes naturally with the use of large textual corpora and that may be enhanced by the use of surveys and experimental techniques. Specifically, an observational approach is legitimate to the same extent that it is in the social sciences at large, and it is inevitable in order to overcome the restrictions on an intuitive or introspective methodology, like the existence of competing norms and incomplete knowledge – in other words, in order to deal adequately with the diasystemic nature of the linguistic system.

From the two perspectives that we have considered (on the one hand, starting from an empirical methodology, and on the other, starting from a fundamentally social conception of language), an alliance between quantitative, variational corpus analysis and Cognitive Linguistics becomes evident. But what would be typical about this form of variationist studies? To what extent would it not only be the case that Cognitive Linguistics would by necessity have to include a sociolinguistic form of analysis, but would also contribute in a specific way to variational linguistics? To what extent could there be a ‘cognitive sociolinguistics’, with its own typical profile within the domain of variationist studies?

Some of the more immediate answers are easily derived from paragraph 2 and the literature cited there. Cognitive Sociolinguistics will focus on grammatical phenomena that receive specific attention within Cognitive Linguistics, as in Berthele’s dialectological research into syntactic differences. Or it will apply descriptive models that were developed in the domain of Cognitive Linguistics to variationist phenomena, as when Kristiansen draws a prototype-theoretical picture of phonetic variation, or when I use conceptual metaphors to identify linguistic attitudes.

But the discussion in the foregoing pages suggests a more profound convergence between Cognitive Linguistics and sociolinguistics. Throughout the discussion, we noticed the usefulness of the notion of ‘diasystem’ to describe the distribution of linguistic norms and linguistic behavior over a language community. But at the same time, we should recognize that the dialectic interaction between individual knowledge and collective norms remains largely undescribed. I would suggest, then, that this is precisely the type sociolinguistic question that could appeal to Cognitive Linguistics. If the individual’s knowledge of the language is not just a uniform, though perhaps partial, internalisation of a homogeneous and well-delimited set of
social norms, but if the very nature of these norms as a coordinative structure reveals itself in their uneven, clustered distribution over numerous individuals, then an elucidation of the interplay between the individual, cognitive level and the social, normative side of things would be an obvious task for Cognitive Sociolinguistics.

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Social cognition: variation, language, and culture in a cognitive linguistic typology

Enrique Bernárdez

Abstract

This chapter proposes to take linguistic variation and linguistic typology as central elements for the theory of Cognitive Linguistics. This implies the need to avoid taking one single language, English, as the point of reference and the fundament for the identification and definition of general, universal, linguistic and cognitive principles and processes. The need for a socio-cognitive view of language is emphasized, implying a view of cognition not limited to the individual and including its role for human activity, which at the same time influences the cognitive processes themselves.

1. The need for a typological study of language

Language exists only in variety: according to estimates, between 150,000 and 500,000 languages have been spoken through the history of modern man. And even if the precise number of existing languages is difficult to ascertain, it is obvious that linguistic variety is a consubstantial feature of human life in both the social and the individual spheres.

However, we usually talk about language, in the singular, and the concept of human language as the central concern for most linguists. It is however necessary to make an explicit distinction between language in general (Sp lenguaje) and “a particular language” (Sp lengua, idioma) (others, like Fuchs (1997: 6), have also made similar observations). Chomsky (1986) proposed the terms I-language and E-language respectively and somehow this particular distinction still seems to be hanging around even among non-Chomskyans. No such thing as I–language or “human (individual, internal) language” is accessible to observation, of course, and human language as such is a mere construct. Its assumed reality, however, is normally assigned the primary value. There is a widespread tendency to consider similar abstract constructs such as langue, competence or human language,
as the primary object of research. Maybe a consequence of the pervasive folk theory of essences (Lakoff and Johnson 1999), or of the traditional tendency to see what is most abstract, less in direct touch with “reality”, as most important. Or of the “theoretical point of view”, as defined by Bourdieu (1994), which, through its exclusive interest in artificial constructs, annihilates its object of study, a problem even more serious if we are not conscious of it (see Lizardo 2003):

We prefer to generalize and, of course, it is generalization that science is about, not the mere observation of describable phenomena. But in order to reach valuable generalizations about human language, that is, in order to be able to understand what human language can be, we have to study the variety of human languages –in the plural. Even if introspection has to be accepted as one basic tool of linguistic and cognitive study, it cannot be the only tool: it has to be supplemented by the careful scrutiny of language data. Cognitive and functional linguistics is a recognisably empirical discipline, and as our object, language, is multiple, our empirical study must equally be multiple, i.e., multilingual.

Of course, with such enormous variation it is impossible –and useless– to try and analyse all the existing and defunct but known languages one by one, without introducing some order in the apparent chaos of apparently infinite variation. When looking at the variety of languages spoken on Earth, and at their obvious similarities, the need arises to order and “classify” them: that is what we call typology, which is just another form of categorization. And although both fields are not necessarily coincidental and must not be confused, typology, as the identification and definition of languages types, goes hand in hand with the study of the universals of language: typology, so to speak, aims at discovering what is universal in hu-
man language, i.e., to go from languages to language, from idioma to language.

All this is well known, as things have been basically like this for a long time. But more recently the need has also arisen for the identification, description and explanation of the cognitive bases of language and linguistic variety. That is, we now expect to develop adequate linguistic typologies, which, furthermore, have a cognitive basis.

In this way we expect (1) to better understand language, etc. (as before the “cognitive revolution”); (2) to explain the universal and particular features of language, i.e., of language and languages, by referring to much more general principles, of a cognitive nature; (3) to understand the relation of language and the languages. The rest of this chapter will be devoted to this particular question, so that for now it will suffice to rephrase the question a bit more precisely: a cognitively based typology should try to understand why the universal features of human language are as they are while the individual languages show the immense differences they do show. Finally, (4) we expect our study of language and the languages to allow us to understand the universals –and varieties?— of human cognition; not only in as much as they may be directly related to language, but more generally: we expect to understand The way we think.

2. Relating language(s) and cognition

A nowadays undisputed fact about language is that it stands in very close relation to cognition. The problem, of course, is understanding and explaining the nature of that relation, as the answer depends, among other things, on how we choose to define language and cognition. As things now stand, in most varieties of Cognitive Linguistics it is an accepted fact that we can get to at least some knowledge of cognition through the study of language, and vice versa, i.e., that our knowledge of cognition—acquired by other, non linguistic, means—will improve our understanding of the language phenomenon.

The situation can be illustrated with an equation, language \(\sim\) cognition. The sign \(\sim\) can be read in different ways. If we interpret it as a right-pointing, one-directional arrow (language → cognition) we get something like the Sapir-Whorf hypothesis; a two-sided arrow (language ↔ cognition) implies that a mutual influence exists. A left-pointing arrow, finally (language ← cognition) sees language as a mere result of the operation of human general cognitive principles; a very strong hypothesis indeed that is
probably accepted by no one.\textsuperscript{3} There is another possibility: to interpret our equation as an equality: language = cognition, a proposal on which I am not going to say more. Let us sum up saying that, as Harder proposed, language is only partially autonomous: but the same holds for cognition: “cognitive facts should not be understood as autonomous, any more than linguistic facts should” (Harder 1999: 198). At the same time, a certain level of autonomy does exist. The arrow that points both ways seems to be the preferred option.

Turning back to the problem of linguistic variety, given that we draw conclusions on human cognition from our study of human language, if we considered only one language, a perverse change in the equation could take place: a particular language \(\approx\) human cognition.\textsuperscript{4} The result of this error could be summarized in the words of Bateson (2002: 2212) in his devastating review of Pinker’s (2002) latest book: “[W]hat Pinker happily calls human nature is in reality individual nature and depends critically on the circumstances of that person’s life”.

Studying language on the basis of one or only a few languages is indeed dangerous, as we could tend to assign to a certain language-specific feature a universal value.

3. The need for a tertium comparationis

Any comparison, be it of languages or of anything else, needs a neutral standard, what is termed a tertium comparationis. Seiler’s (2000) words are sufficiently clear:

...language universals research and language typology involve cross-linguistic comparison. For any type of comparison there must be two comparanda and one tertium comparationis, and for a scientifically based comparison both comparanda and tertium comparationis must be made explicit....

Clearly, in comparison between any two languages the tertium comparationis cannot itself be an individual language. But this simple logical requirement is violated ever so often in universalistic and typological work. Over the centuries the practice has been to take one language as the standard. In former times it was Latin, now it is mostly English (Seiler 2000: 28)

In a certain way the choice of Latin was not too bad, because Latin, as a “dead language” without native speakers is a “very well defined” language: its structures, lexis, etc., are sufficiently fixed, it is socially relatively neutral and
has no internal variation in itself. However, it also was a bad choice because it belongs to a particular type of language, it is linguistically non-neutral and the reality of other languages was frequently distorted by our trying to understand “exotic” phenomena through the Latin lenses. To this, another danger was added: the Latin language was taken to reflect logical thinking, in such a way that whatever did not fit the Latin structures, was also incorrect from the point of view of thinking itself. That is, universal thinking—we would now prefer “cognition”—was seen as derived from a single language.

To avoid this, a number of more or less formalized comparison standards were proposed in the twentieth century, and some of them probably deserved more widespread success. Let us just mention some of those which made explicit reference of their typologizing interests: Šaumjan’s Generative Applicative Grammar; Dik’s Functional Grammar; Apresjan and Mel’čuk’s Sense ↔ Text model; Van Valin’s Role and Reference Grammar, or Thom’s Morphodynamics or Cognitive Semiotics as developed by Petitot, Brandt and others (see Bundgård, Egholm, and Skov 2003). I will not enter into the reasons for not following any of these paths (or others in a similar vein). Of course, no “perfect” metalanguage for comparison exists; the problem, in my view, is that we have practically abandoned any efforts to approximate one. A few promising proposals may be around, however, in Cognitive Linguistics, and such recent proposals as Neural Grammar could eventually become one such possible metalanguage, even more so as it would be a language-independent, cognition based metalanguage; but this model has not been sufficiently developed yet and it still lacks much cross-linguistic basis. Also Croft’s (1999) Radical Construction Grammar is also at its very beginnings. Langacker’s graphic system of conceptual and linguistic representation can undoubtedly be used as a very good neutral metalanguage, although it seems a bit cumbersome to use and print. Seiler (2000: 19) emphasises the similarities between his own approach and Ronald Langacker’s Cognitive Grammar.

The fact remains that nowadays English is in widespread use as the –seldom challenged– tertium comparationis. This embodies a number of risks:

3.1. English, as any other language, is culturally loaded

The forms of expressions in English are as much culturally co-determined as those of any other language. Let me quote Enfield and Wierzbicka (2002) who, while studying the linguistic expression of emotions, write:
While much work on emotions has assumed that (scientific?) English provides clear and non-ethnocentric terminology for the description of emotions in different ethnolinguistic spheres, some recent research has questioned this assumption. It has been shown that most linguistic categories (words, constructions) referring to emotions in natural languages embody complex and culture-specific configurations of ideas about how thoughts, feelings, and bodily processes may be normally (i.e., conventionally, in a given social realm) related. English-language “technical” terminology is no exception, and it must thus be recognised that English-language descriptions of emotion are also “folk descriptions”, not culture-independent (Enfield and Wierzbicka 2002: 2–3).

I would extend these observations to other areas of language, including a significant part of the grammar of any language. A clear example of the existence of cultural preferences accompanying the use of the structural possibilities of a language is the so frequently mentioned tendency to avoid explicit expression of agents – as such agents – in the Polynesian languages, Indonesian, and many other Asian languages, but also, although not so dramatically, in Spanish (Bernárdez 1997a; Mintz 1994; Mosel and Hovdhaugen 1992; Sneddon 1996); this tendency leads to a generalized preference for intransitive constructions, which has a number of interesting consequences in other parts of the grammar (Cook 1991; Duranti and Ochs 1990). Another example could be the need for very precise cultural information in order to be able to use the –a– and –o– possessives in the Polynesian languages (Duranti and Ochs 1990: 19, fn.5; see also Mosel and Hovdhaugen 1992); Gary Palmer (1996) analyses other cases. Similarly the interrelation of cultural construal and metaphorical and metonymic conceptualization, also in the grammar, as shown by Georges Lakoff in the case studies of his 1987 book, witnesses the interrelation of language, cognition, and culture. In fact, a detailed analysis of most constructions, whenever form, meaning, and use are considered at the same time –and they have to– leads to having to include cultural elements. The only way to avoid it is a purely formal grammar à la Chomsky, where those constructions are rejected from the “core of grammar” which may seem to need any kind of semantic, pragmatic, or cultural information.

Let us briefly review a case, which may be interesting in this regard. We are sufficiently familiar with the English causative, which uses the verb to have followed by a past participle. A superficially similar construction exists in Portuguese, where it is a kind of passive formed with the auxiliary ter “have” and the past participle of a verb.
This construction could seem rather straightforward; its structural analysis is fairly simple and apparently unproblematic. We could be tempted to interpret it similarly to its English gloss, which has been the object of detailed study. But what does this Portuguese construction mean? Let us first consider another example which is deemed as unacceptable by many Brazilian (probably also Portuguese) speakers but whose English counterpart seems quite straightforward:

(2) *Ô Pedro, você tem seu carro revisado todo mês?
   ‘Hey, Pedro, (do) you have your car checked every month?’
   (Dominique 2003)

Are the English and Portuguese constructions “the same” in any interesting sense, i.e., apart from their purely formal, even semantic similarities, as both seem to share a formal structure and a basic causative meaning? The Portuguese construction is only used when the subject of ter has no control on the action, which is moreover generally realized against the subject’s will and performed by others (the agents, whether explicit as in (1) or implicit as in (2)) with the intention to harm the subject; the decision on which agents can realize which harmful actions on which subjects is a cultural one: a matter of control assignment, but also of possible “ill-will” in stipulated (social, cultural) conditions: if according to cultural expectations a certain type of person cannot be expected to willingly harm others in the way marked by the particular verb, the construction cannot be used. Dominique compares this construction with the Japanese adversity causative construction, but what separates both, in addition to their formal dissimilarity, is the cultural decision as to the adequate subjects, actions, agents, and circumstances: ill-doing in Portuguese and Japanese are two culturally different phenomena.

A neutral metalanguage for comparison would avoid these problems: it could be organised on the base of form, in which case all the constructions with verbs of possession would fall under the same heading; or the same basic meaning, which could lead us to talk of causative constructions, irrespective of their (syntactic, etc.) form; or the cultural prerequisites, which would lead to a basically anthropological view of language organisation and diversity... and analyse both constructions in terms of the possible
ways in which a subject can be affected by an action carried out by others but whose final locus is the subject herself.

3.2. English is a typologically “rare” language

If we take English as the tertium comparationis, we may be comparing languages on the standard of some “linguistic rarity”. Maybe this claim needs to be justified.7

Certain English grammatical constructions are extremely infrequent cross-linguistically, as is the case of the passivization of oblique arguments, as in these famous examples:

(3) This pen has been written with (the subject is an instrument).
(4) This table has been slept on (the subject is a locative).

A similar construction does occur in other languages, for instance in the Philippines. There is a significant difference, however, because in these languages as opposed to English, the verb bears an explicit mark of its having an instrument as its subject or, more appropriately, as the sentence topic (see Siewierska 1991: § 4.3.1); as is well known, the grammatical status of the Subject in these languages is a matter of dispute.

Also the use of dummy auxiliaries is quite infrequent, as is the obligatoriness of an expressed syntactic subject; or the resultative constructions which, while having their counterparts in other Germanic languages, are far more frequent and unrestricted in English: Icelandic has examples like (5):

(5) Og svo kyssti ég hann blóðrjóðan (Sjón 1994: 67)
    and then kissed I him blood-red
    ‘and then I kissed him red’

but no direct version of English (6) seems possible:

(6) She laughed herself sick.

The same happens in other areas of language, where English has apparently gone in the direction of complete, unrestricted generalization of most grammatical constructions. Take also other frequently quoted and discussed examples in the Cognitive Linguistics literature of the last few years. We all know about those ham sandwiches on the run. The study of
metonymy uses such illustrations very frequently as, through them, we expect to arrive at some universal principles of linguistic metonymy and, beyond language, to some principles of human cognition. Admittedly, examples of a roughly similar nature could be found in other languages, but the general, universal, panlinguistic, cognitive discussion is very much centred on the English speaking ham sandwich. This metonymic use is extremely infrequent and I have not been able to find any other language where such expression would normally be acceptable, in spite of a few restricted examples in specific contexts. For instance, in French (but rarely in Spanish, for instance), the following could be usual in the context of the waiter serving the food to the customers sitting at a table:

(7)  *Le sandwich au jambon, c’est vous?*
  ‘The ham sandwich, is it you?’

But I am not so sure about (8):

(8)  *?Le sandwich au jambon s’en est allé sans payer.*
  ‘The ham sandwich is gone away without paying’.

Certainly, the following would only be acceptable in Spanish in very extraordinary conditions; otherwise it is of greater interest for the study of humour than of general cognition because what walks away is the food, not the customer, i.e., the metonymic reference does not hold:

(9)  *La tortilla de patatas se fue sin pagar.*
  The omelette of potatoes itself-went without paying.
  ‘The potato omelette left without paying’.

Interestingly enough, this type of metonymic reference seems to be in the process of becoming acceptable in some languages, as Greek (Kostas Kanakis, personal communication 2003) in the context of American-style fast food restaurants. Something quite similar seems to be happening in Spain, although it is not yet established, even in such places. I have never found any such examples discussed in any language but English and wonder whether in cases like these we are studying human cognition or just a peculiarly English possibility of nearly limitless metonymic reference. It would be much more interesting, in my opinion, to try to explain why that metonymy (as many others) is possible in English but not in other lan-
languages, instead of using the delinquent sandwich to investigate something as supposedly universal as cognitive metonymy.8

Something similar happens in other cases, also because quite frequently linguistic discussions are restricted to constructions taken from English, which serves as the basis for cognitive generalization, and their results are then simply checked out in other languages: against the background of English, i.e., using English as the standard of comparison. We have to be clear as to whether at some point we are studying a peculiarity of English or something much more widespread.

But let us look at this problem from a different linguistic angle. We shall take Portuguese again. This time, a rare feature of this language and its brother (or sister), Galician, but of very frequent occurrence.

In Portuguese and Galician, there exists a form of the verbal infinitive labelled “personal” or “inflected” infinitive, that marks its own agent (subject) with the personal endings normally used in finite verb forms (with the exception of the first person singular, which remains unmarked); for instance,9

(10) Bom seria andarMOS nus como as feras.

‘It would be fine for us to walk around naked like the beasts’.

(Cunha and Cintra 1984: 486)

The personal infinitive is used if and when the speaker “feels” it is necessary, or convenient, to specify the agent of the action expressed in the infinitive, if and when it is different from the infinitive of the main, finite verb. Some basic tendencies can be identified: for instance, “when the infinitive appears before [the main verb], there is a strong tendency to inflect it. ...[t]he distance separating the main verb and the infinitive also affects the possibility of using the inflected form” (Álvarez, Monteagudo, and Regueira 1986: 394; my translation). But no “fixed rules” are possible, a characteristic that has lead some grammarians to assign it a more “stylistic” than “grammatical” nature (Cunha and Cintra 1984: 487). We could be tempted to advance a historical “explanation” and say that the personal infinitive construction is not yet fully grammaticalized, what is not saying much, as from the synchronic point of view the fact remains that the only way to explain its current meaning is to say that the selection of the personal infinitive or its noninflected counterpart depends on whether the speaker considers it necessary, or just convenient, to make explicit mention of the agent of the action signified by the infinitive.
Now, what kind of universal principles could we posit on the basis of the Portuguese inflected infinitive? Should we begin discussing it in the terms of its cognitive representation—which necessarily has to be universal, as human cognition should show no differences? If not, why not?

So English is a typologically rare language, but Portuguese, and certainly all languages, also features some quite infrequent constructions. But... which language (type) is “the most frequent one”? Or, which individual construction reflects basic cognitive processes in relation to language? The tendency to take English as a sufficient basis for the positing of universal features of human language and cognition has been recently critically analysed by Golumbia (2004) in connection with nonconfigurationality as defined and studied by generative grammarians. From his paper one can draw the conclusion that at least some seemingly theoretical discussions in generative linguistics are due, in fact, to their taking the English language as the sole point of reference for the proposal of universal principles; or, in other words, that linguists try to force other languages’ constructions and grammatical structures into the patterns of the English language. It is by now quite clear that this tendency has been an obstacle for the development of generative linguistics. We may also have to face the same danger in Cognitive Linguistics.

If we had an adequate tertium comparationis, the relation between the English and Icelandic, or the English and Cebuano constructions could be made clear and, on its basis, progress towards the identification of universals of language and cognition could be made. If we try to see the constructions in other languages through the lenses of one particular language, we might be just doing “contrastive grammar”, whose aim is the teaching of foreign languages, instead of general, Cognitive Linguistics.

3.3. The problem of granularity

We know English fairly well, so that our analysis can be—and usually is—very fine-grained; such fine-grained analysis is deemed necessary in Cognitive Linguistics and, in fact, it is one of its main features. But many other languages are not always so well known, or we linguists do not care so much about detail when dealing with less-known languages, sometimes including our own, especially when moved by a theoretical interest, so that we sometimes may be comparing quite disparate things: something extremely limited in its geographical, social or contextual extension, etc., i.e., belonging to a very specific variant of a language, with something else in
another language, taken as an unproblematic, unlimited, general form of expression: that is, we are sometimes comparing things that are in fact in-comparable. Not to mention those cases (they do exist, even if such a way of doing things may seem impossible in linguistics!) in which data of some language are only analyzed... in their English translation.10

While discussing an English construction, Claudia Brugman (1996: 49), comes up with the following example:

(11) ??Glenn Dickey had it that Nolan Ryan was pitching this week.

She explains that the question mark reflects the fact that for this sentence to be fully acceptable, the hearer has to know that Glenn Dickey writes a baseball column in the San Francisco Examiner; with this background (cultural in the strictest sense of the word) the sentence can be understood metonymically. Some extremely precise conditions for the full acceptance of (11) have been given: it is acceptable for a reader of the San Francisco Examiner who is moreover interested in baseball. But in a different paper of the same collective book (Fauconnier and Sweetser 1996), a sentence like (12) is simply labelled as “Spanish”:

(12) No creo que te he enseñado una foto, de mis padres... Espera, que la tengo guardada aquí.

‘I don’t think I have-IND shown you a picture of my parents…Wait, I have it, here’. (Mejías-Bikandi 1996: 166)

Whereas (13) is marked as very odd:

(13) ??No creo que te haya enseñado una foto, de mis padres.... Espera, que la tengo guardada aquí.

‘I don’t think I have-IND shown you a picture, of my parents… Wait, I have it, here’. (Mejías-Bikandi 1996: 166)

The reality is just the opposite: the vast majority of Spanish speakers, in any part of the Spanish-speaking world,11 accept (13) while unanimously rejecting (12) without hesitation.

Mejías-Bikandi’s non-conditioned interpretation might perhaps be acceptable to some speaker of Spanish in limited contexts (although I very much doubt it, see Aliaga and Bustos 1998; Bernárdez 1997a, 1998).12 The same happens with the author’s analysis of the alleged opposition between (14) and (15).
(14) \textit{No es cierto que Pedro está enfermo.}  
‘It is not the case that Peter is-IND sick’.

(15) \textit{No es cierto que Pedro esté enfermo.}  
‘It is not the case that Peter is-SUBJ sick’.

The interpretation of both constructions has been known for quite a long time and does not have much to do with the author’s analysis: (14) refers to the falsity of someone’s statement that Pedro is sick, whereas (15) denies the fact itself. This is unanimously accepted by linguists of any theoretical persuasion, from traditional to generative and functional grammar (see Bernárdez 1997a for further references). There is no difference in the degree of certainty or in the accessibility of the corresponding spaces.

Are examples like (11) and (12-15) at the same level? Are they equally valid for building a linguistic-and-cognitive argument? Obviously not. Can we compare the conditions of use for a grammatical construction as stipulated in (11) with those for the (supposed) use of the Spanish indicative-subjunctive opposition in (14-15)? Obviously not.

We have to choose a neutral tertium comparationis where the issue of granularity is set as an invariant so that it does not play a role. It will then be a matter of the detailed investigation of the corresponding construction in the particular languages, an investigation that will have to provide sufficiently fine-grained analyses.

3.4. What do we do when we translate a sentence?

A standard –and necessary, and valid- method for data elicitation is translation. But one has to be very much conscious of the cognitive principles involved in this type of cognitive and linguistic activity. L’vóvskaya (1997) analyses in detail “the factors that determine translator’s activity” (chapter 3) and the “types of bilingual activity” (chapter 4). The process of translation is an extremely complex one, but most linguists usually ignore this complexity and tend to take the process, and its results, as straightforward and even automatic and faultless. I think linguists working cross-linguistically should necessarily acquire some knowledge on the translation process and its cognitive bases.

For example, if one takes an English transitive sentence construction with an overt, clearly expressed agent and then tries to elicit its translation in another language, the result will frequently be a sentence with an overt agent, as the interpreter will be trying to produce the expression he sees as
closest to the original. This will be taken as the linguistic form of expression of transitive constructions in that language, at a pair with its English counterpart, and consequences will then be drawn. Quite frequently, however, the elicited construction can just be the literal rendering of an English sentence in complete isolation (cultural, linguistic, contextual), while in normal conditions, it would never be used by speakers of the language. But it can also happen that the interpreter provides us with a construction that bears no formal resemblance to the English one, as she is now attending to meaning only—and probably to the reigning social and contextual conditions (a good example can be found in Duranti and Ochs 1990: 20 fn.11).

In most cases the elicited literal translation will be one possible grammatical construction in that particular language, not necessarily the best equivalent of our source (English) construction—in terms of form and/or meaning. If we attend to matters of usage, things can be much more different and misleading. One will be tempted to answer that the elicited sentence, being a possible construction in the language under scrutiny, is an acceptable example and fulfils all the conditions for linguistic (including cross-linguistic) study; and that it can serve as a basis for cognitive generalizations, together with its English counterpart. The usual response will come up: we are dealing with language and cognition, not with matters of language use. But this is not necessarily true.

Let us analyze an example, in relation with the macrotypology “verb-framing vs. satellite-framing”. It is clear from the bibliography that English, as the other Germanic languages, favours the expression of the manner of movement, action, etc., in the verb, while Spanish, as a Romance language, expresses the manner of movement in a satellite—if at all, because quite frequently such information is simply deemed superfluous and left out. Take the following sentence:

(16) He crawled out from under the table.

It would normally correspond to Spanish (17)

(17) Salió a gatas/gateando de debajo de la mesa.

(he) exited crawling from under of the table

But in certain contextual conditions, (18) is also possible:

(18) Gateó (hacia) (a)fuera desde debajo de la mesa.

(he) crawled towards out(side) from under of the table
Both expressions are quite different in usage: in (17), the event is seen as a whole and Spanish speakers do not focus on the manner of the action; this is the most usual case. In (18), however, the speaker wants to emphasise the manner of the verb; one can make up a context, for instance in a narrative, where (18) could be the adequate, even the most convenient or even the only possible form of expression.

Spanish could be equally classifiable as verb-framing or as satellite-framing, usage being the decisive factor for the selection of one or the other. Of course, we know that this distinction is not an absolute one, but normally a matter of degree, and in these terms we could just say that Spanish usually occupies a position towards the “satellite-framing” end in a continuum, while under certain conditions being able to move towards the “verb-framing end”.

But let us take a very brief look at a similar group of verbs, the “verbs of hitting”, analyzed by Palancar (1999). While English and Norwegian encapsulate the “manner of hitting” in the verb itself, Spanish prefers to use a verb with a very general meaning, not always explicitly that of “striking, hitting”, such as pegar, “glue/stick to”, dar “give” and so on, an a nominal direct object specifying the specific type of hit applied, as botellazo “a hit with a bottle”, patada “a kick” etc.; in this way, Spanish can be extremely precise. But we also have verbs incorporating the manner or, probably more frequently, the instrument, such as abofetear “to slap one’s face”, patear “to kick”, apalear “to hit with a stick”, etc. Now, a possible translation of the English sentence (19) could be (20), but also (21)

(19) She kicked him.
(20) Le dio una patada.
(she) to-him gave a kick
(21) Lo pateó.
(she) him kicked

Which one is the equivalent of (19)? Both, of course, although differences do exist between (20) and (21) and both are used differently. Sometimes the difference is a matter of register: abofetear belongs to a higher register than the more colloquial dar una bofetada ‘give a blow on the face’; puñetear meaning dar un puñetazo ‘hit with fist’ is probably geographically restricted, whereas patear ‘to kick’ points to repeated, rather brutal kicking, not to a single kick as in dar una patada. But notice that abofetear can also have that implication of repetition, but not necessarily so: it can as well refer to a single hit. It all depends on a number of cultural conditions:
we usually hit each other in certain preferred ways, so to speak, and this is reflected in the selection of language forms.

Another example: Cristóbal (in press) elicited Basque speaking children’s version of the story used by Slobin and colleagues in their study on thinking for speaking. Translation was not used in this case, however, but free verbal construction on the basis of a series of drawings. She found that whereas most children began their telling using stative constructions (as “There is a boy on a tree” and the like), in a few cases the children began with an active construction: “a child has climbed a tree”. The key for this apparent anomaly was that the child was then trying to tell a tale, instead of just “verbalizing the drawings”. Symptomatically the typical story beginning was added, *egun bat... ‘one day...’*, which did not appear in the more “canonical”, stative narratives. In this case, the selection of the stative or the dynamic expression is a matter of text type, i.e. of the socially sanctioned verbal activity to be carried out. A “context-free” elicitation of data, i.e. one in which no attention is paid to the possible use that linguistic expression, can be, and usually is, misleading.

Moreover, frequently the translator is seen as free from errors and inconsistencies (mere wishful thinking!). Of course, this does not apply to anyone who has been confronted with the elicitation of data in the context of linguistic fieldwork. In fact, sometimes an error in the linguistic analysis of some phenomenon can be traced back to a error in translation by an informant. Unfortunately, as Dixon (1997, especially ch. 9) rightly points out, theoretical linguists much too often lack, and have no interest in acquiring, any experience in translation, data elicitation or, even, they may be incapable of using any foreign language at any level. Data elicitation frequently takes place in the artificial context of a room and its main goal is to learn how some English construction is expressed in a different language, not how that language really works.

When using English as the tertium comparationis, the usage conditions of the English linguistic data are also “inherited”, together with their degree of frequency and their cultural load. This is inevitable, as it is a sheer impossibility to abstract from all these aspects when dealing with a real-life language. But how can we develop a completely neutral standard? Let me quote Enfield and Wierzbicka (2002) again; as in our first quotation above, what they say is equally valid for the kind of problem analysed here:

The unconstrained use of the English lexicon in the discussions of “human emotions” has been defended in the name of the tenet that nothing we ever say can be truly culture-independent, and that, consequently, the search for
a universal, global perspective on human emotions is misconceived: yes, there is an Anglo bias in using ordinary English as our metalanguage for discussing emotions, but this is inevitable, so we had better simply accept it (Enfield and Wierzbicka 2002: 3)

4. Individuality vs. collectivity in language and cognition

I have been talking of grammatical constructions, metonymic reference, the interpretation of linguistic utterances, the use of language and the cultural and contextual conditioning of both use and structures. It may look as if I am just mixing things up.

As was seen at the beginning, we usually expect to devote our attention to language organization, grammar, structure, or whatever you may prefer to call it, keeping questions of use neatly separated. This neat separation is being abandoned nowadays, with the development of “usage based” models of grammar:

A usage-based theory, whether its object of study is internal or external linguistic system, takes seriously the notion that the primary object of study is the language people actually produce and understand. Language in use is the best evidence we have for determining the nature and specific organization of linguistic systems. (Kemmer and Barlow 2000: xv)

Kemmer and Barlow (2000: viii–xxii) characterize usage-based models as sharing “a set of characteristic assumptions”: (a) The intimate relation between linguistic structures and instances of use of language; (b) The importance of frequency; (c) Comprehension and production as integral, rather than peripheral, to the linguistic system; (d) Focus on the role of learning and experience in language acquisition; (e) Linguistic representations as emergent, rather than stored as fixed entities; (f) Importance of usage data in theory construction and description; (g) The intimate relation between usage, synchronic variation, and diachronic change; (h) The interconnectedness of the linguistic system with non-linguistic cognitive systems; (i) The crucial role of context in the operation of the linguistic system.

Of course, such a view of language and grammar is not new at all, as most of these assumptions have been a familiar element of some functional models, as also of many versions of textlinguistics, for quite a long time; but it does represent a significant shift in the “dominant trends” of linguistics. Be it as it may, it enables us not to have to justify the possibility and
convenience of taking usage as a central element of language, including the much more restricted area traditionally called “grammar”.

Now, it is this usage-based grammar that has to be the focus of typological research, instead of the traditional emphasis on form or the mere pairing of form and meaning in absence of any context or conditions of use and usage. The examples analysed above show that a number of quite different parameters have to be included in the explanation of linguistic constructions (for an example, see Bernárdez 1997b), especially when considering their relation with constructions in other languages. Apart from form and meaning, it is necessary to consider, as in the case of the verb- vs. satellite-framing constructions above (examples 10-15), the cultural preferences for expression, i.e., the favoured usage. Similarly in the study of metonymy, for instance, it is not only whether something is possible at all (like understanding references to the delinquent sandwiches), but why it is that languages differ so widely in the type and extent of metonymic reference they are willing to accept. This view of typology, of course, is not new. Let’s recall Seiler’s (2000) UNITYP project’s proposals, as well as Lazard’s RIVALC (“Recherche interlinguistique sur les variations d’actance et leurs corrélats”) project (1994), to cite only two especially significant approaches.

This perspective allows at the same time an explanation for the existence of variety itself: variation is the inescapable consequence of use. Even if we might accept that human cognition is invariable –but that may be too strong a hypothesis, if due attention is paid to the reality of biological systems–, which would prevent variation and change, the constantly varying conditions of interaction, as the basis of linguistic use, have variation and change as their immediate consequence. A fact that has also been central in the study of linguistic change, as is well known: historical change is tightly linked to variation, in language as everywhere else.

Another interesting point is that, whereas we could –perhaps– see cognition as an internal, individual phenomenon, and study at least some parts of language in the same spirit, whenever we try to look at language use we enter into the arena of activity, which is necessarily associated with collective interaction. This demands a closer look, albeit much too briefly due to lack of space.

4.1. Individual thinking, collective action?

The distinction we have been dealing with is in the last term one between the individual and its inner states on the one hand and, on the other, the collectivity, i.e. the individuals in interaction, in an active, externalised
state. Or between thought, which we assume to be a purely individual matter, and action, which necessarily implies an outward movement of the individual: toward its environment and toward other individuals. We assume that the individual cognition “produces” something, so to speak—of course, no conduit metaphor is intended here—which is then “put to action”: for instance, a certain construction which is then used in communicative interaction with other individuals. Thinking would thus be an individual affair, whereas activity is necessarily interactional.

We tend to assume that the individual, “inward”, autonomous thinking enjoys some kind pre-eminence over the supra-individual, outward activity; and over any kind of cognition directed towards immediate action or interaction. An idea, by the way, that has extremely old roots in Western thinking (not only in the West, though). This view is not necessarily right, however; see for instance Harder’s (1999, 2003) comments on the limited autonomy of cognition (also Geeraerts 1999; Semin and Smith 2002; Tomasello and Rakoczy 2003, and further references below), or Bourdieu’s (1980, 1994) emphasis on the “logic of practice”. Many philosophers and psychologists have also emphasised the social, active nature of the human psyche including its “higher cognitive functions”; and we should remember the inseparability of cognition and emotion, as demonstrated by Damasio (1994, 1999). Sinha (1999) proposed the term “neural solipsism” for the view of cognition as a purely neural issue, without any consideration of things external.

In the last twenty years we have witnessed a significant widening in the scope of cognition: from a purely internal view as in “first generation cognitive science”, to the nowadays firmly entrenched view of cognition as embodied (for some recent discussions, see the contributions to Cognitive Linguistics 13 (3) (2002), as well as Hirose 2002; Riegler 2002; Semin and Smith 2002; Sinha and Jensen de López 2000). Embodiment means that cognition cannot function without the physical reality of the body, which is then open to the environment.

But we have to widen our understanding of cognition even further. We have to include situatedness and the role of activity in cognition. I am not going to enter into the details of this view (a more detailed presentation is to be found in Bernárdez in 2004, in press) which, interestingly, goes back in a way to some much older proposals, especially those of the Soviet school of psychology of the 1920’s and 30’s as represented mainly by Vygotski, Luria, Voloshinov and Leont’ev (for recent evaluations of the theory and its historical background, see Cole, Engeström, and Vásquez 1997; Frawley 1997; Luria [1976] 1987; Ratner 2000). In their view, cognition is
impossible to dissociate from interaction, understood as social activity. Michael Tomasello’s recent work (1999, 2000a, 2000b; Tomasello and Rakoczy 2003) points in the same direction:

Following the lead of Vygotsky …, Bruner …, Cole …, and other cultural psychologists, my view is that what makes human cognition unique, more than anything else, is its collective nature. (Tomasello, 1999)

That is, all of the many artifacts that enable and empower human cognition (…) are the joint product of many people working over many years, combining and accumulating skills and knowledge. (Tomasello 2000a: 357).

In fact, Tomasello’s view of imitation, attention to other people’s actions and development of a “theory of mind” as the central element in the acquisition of language by children, also as opposed to the shortcomings of those same social activities in apes, witnesses the extraordinary importance of social, i.e. collective activity, for the development of individual cognition, both in the ontogeny and the philogeny. In a similar vein, palaeontologists point to the richness of the social interaction of Homo Sapiens as opposed to Neanderthals as the main reason for the prevalence of the former (Arsuaga 1999, 2001; Arsuaga and Martínez 1998), instead of the – after all, impossible to demonstrate– pre-eminence of any a priori cognitive abilities (after all, the Neandertals had a bigger brain!).

In Cognitive Linguistics, mainly but not only when dealing with the multiplicity of human languages and their nearly limitless variability, the situatedness of cognition has to be integrated in our research. According to the school of situated cognition:

Behavior can only be understood in the context of complex real-world situations. An important focus of research should therefore be the relationship between people and the external world (and how the behavior of people is coordinated with the external world) without the mediation of mental planning (i.e., without explicit inferencing over descriptive models of the world and human behavior). (Mandelblit and Zachar 1998: 253)

Thus, in situated cognition attention is paid to collective behavior and activity. The individual’s cognition bears the imprint of the types of social activity an individual can be expected to carry out. And the individual’s cognition will heavily depend on the conditions of activity itself (see espe-
cially León 2002; also Alterman and Garland 2000; Clark 1999; Hirose 2002; Ratner 2000; Semin and Smith 2002). But what is more, the (individual) cognition of all the individuals participating in similar collective activities will develop in similar directions, in dependence of the activities. We can say that in relation to a particular activity, all the participating individuals will collaborate in such a way that one can speak of distributed or collective cognition. Mandelblit and Zachar (1998: 254) say on distributed cognition:

Cognitive activity may involve processes internal to the single individual, the individual in coordination with a set of tools, or a group of individuals in interaction with each other and a set of tools... The different individuals and tools constitute the unit of cognition rather than merely modifying or amplifying the internal structures of a single mind. (Mandelblit and Zachar 1998: 254)

Now, these observations are fit for human activity and cognition, but also for language. In fact, this view is the modernisation and development of the paradigm of the study of language as (social) activity (in connection with the Soviet psychological school; see Leont’ev 1971). We may summarise things as follows:

1) Human languages exist only in the form of social activity
2) Linguistic activity is essentially collective, cross-individual, i.e., it is not simply carried out inside a (social) group, but the reasons for its realization, the form of its realization and the results of the activity itself are collective, social in nature; in other words, the process of linguistic activity cannot be understood solely in terms of the individual. At the same time, language is a part of each individual’s cognitive system and the link between both aspects has to be the centre of our research.
3) As a direct consequence of its social aspect, language is an inherently historical phenomenon. Only if exclusive attention is paid to the individual aspect can history be forgotten. But, at the same time, due attention has to be paid to the apparent atemporality of an individual’s cognition and language. The tension between both inseparable aspects of the same phenomenon was in part the object of study of the Soviet school of psycholinguistics in the 1920’s and 1930’s, which was able to show that even at the level of the individual, change is inescapable: individual cognition was in fact affected by changes that were primarily social in nature. Phenomena that are nowadays usually examined solely at the individual level, like metaphor and metonymy (but see Yu for an alternative non-individualistic
view of metaphor), when examined in historical depth, show in how far most of our individual, contemporary metaphors and metonymies are in fact the result of social, historic crystallisation. This tension between the historical and the ahistorical, apart from its philosophical and methodological interest, is also the object of research by the theories of complex systems.

4) Linguistic activity (linguistic use) determines linguistic forms, i.e., linguistic structures. In a double process:
   1. as in any form of activity, a number of alternatives exist; one (or more) of them are selected as the preferred form(s) of activity in stipulated contextual conditions; and
   2. these preferred forms of activity are then integrated in the whole life of the individual: they can correspond to Bourdieu’s habitus. Being “incorporated” –or embodied, in this sense–, they become a part of that individual’s cognitive abilities for action (Lizardo 2003).

5) Through cognitive integration in the individual mind, those preferred forms of language activity, of language use, are then gradually entrenched in the individual’s mind, up to a point where their originally immediate relation with activity is lost, and they become a part of what we like to see as “cognition” tout court, i.e., individual cognition.

4.2. Is language variation possible at all?

In our view, linguistic variation (and change) is the direct result of the character of language as a social activity, where the contextual conditions of the activity itself and the conditions imposed by the participation of a number of individuals in a common activity. This is also the origin of our construct “language” as opposed to the real languages, the idiomas: language would be what is left after peeling off everything directly related to social cognition and activity. Apparently, what is left is very little indeed. According to Hauser, Chomsky, and Fitch (2002), the only element in human language that seems to satisfy this condition is recursivity.

We do not have to explain why variation exists. We have to explain why something –if anything– does not show interlinguistic variation. This would be the only type of cognitively interesting linguistic absolute universals (a problem which worries typologists like Matthew Dryer 1997).
4.3. What is to be compared in cognitive linguistic typology: the comparanda

Our proposal also shows what the comparanda have to be: not simple linguistic forms or pairings of form and meaning, but the whole system of form-meaning-conditions of use, together with the intention or purpose of use. In this sense, my proposal would be to develop a cognitively based model of language on the general principles of something like Seiler’s (2000) UNITYP project, which shows language forms in terms of their functions, i.e., of the activities they are to carry out, and of the possible and preferred linguistic techniques used to do that. A more detailed reinter-pretation of Seiler’s model in these terms will have to wait for another opportu-nity.

4.4. The lessons from biology

Our proposal can find confirmation outside linguistics and cognitive science proper in two areas: the study of collective animal behavior and the physiological means for collective interaction. Remember that one of the main features of the Cognitive Linguistics enterprise is that confirmation has to be sought from different, independent disciplines. Some very brief notes will have to suffice here.

First, animal behavior. It is clear that animals—not only apes, or even primates– are able to coordinate themselves to carry out an activity (Con-radt and Roper 2003; Rands et al. 2003; Visscher 2003). Human beings dispose, thus, of an extremely old mechanism for the coordination of behavior among individuals. Further than that, this type of coordination has to be studied with the means of self-organisation theories (Bernárdez 1995; Kelso 1995; Thelen and Smith 1994).

Second, the physiological apparatus. Apart from other points of interest, the so-called Mirror Neuron System identified first in apes, then in humans (Ferrari et al. 2000; Iacoboni et al. 1999; Kohler et al. 2002; Rizzolatti and Arbib 1998; Stamenov and Gallese 2002) shows that we dispose of a special system whose main function is to identify (visually or acoustically) our own actions with those carried out by another conspecific. Not only if the action is completely carried out, but also when it is simply intended. We are thus pre-wired for social interaction, for identifying ourselves in other people’s actions.
5. Conclusions and prospects

This chapter has been mainly devoted to posing a problem and exposing a danger for the Cognitive Linguistics enterprise. We have to be fully conscious of the need to (1) study linguistic variation, while avoiding excessive, sometimes even exclusive focus on one single language, usually English; linguistic typology has to be firmly incorporated into Cognitive Linguistics, not as a simple addition and extension of examples but as a fundamental component of cognitive linguistic theory: No individual language can serve as the basis for the identification and study of cognitive linguistic principles and processes, but the multilingual reality of the world itself. (2) Special, and preponderant attention has to be paid to language use and usage, which necessarily has to be seen as a form of (cognitive) activity. The results of the theories of practice and activity, with a very long and rich tradition, have to be integrated in the methodological and theoretical apparatus of Cognitive Linguistics. I have tried to show that a view of cognition and language in the terms of socially embodied activity is inescapable and that only by operating in this form can the problems mentioned above be avoided.

Notes

1. This chapter is a revised and extended version of parts of the plenary talk delivered at the 8th ICLC. I thank all those who gave me their criticism and advice. Special thanks go to Paco Ruiz de Mendoza.

2. In as far as it implies a way of thinking which suspends practical need and puts to work tools of thought which were built against the logic of practice, […] the scholastic point of view runs the risk of annihilating its object and engendering mere artefacts whenever it is applied, without a previous critical reflection, to practices which are the product of a completely different perspective. The scholar who does not know what defines him as a scholar, that is, who ignores the “scholastic point of view”, risks the danger of assigning his own scholastic view to the heads of his agents; of assigning to his object what belongs to the way of apprehending, to the way of knowing. (All translations are by EB except if noted otherwise.

3. The double arrow can mean that both language and cognition are developed jointly, which is probably to be associated with the view of the mind as a tabula rasa or “blank slate”. As Hull (2002: 251) rightly points out, nobody believes in such an idea nowadays, so that “surely Pinker is beating a straw man with a dead horse”. As for the equality sign, it obviously means that language and
cognition are just two faces of the same thing (a familiar paraphrase: thinking is language). Neither interpretation can be accepted.

4. Also Catherine Fuchs (1997: 6): it is quite risky “d’hypostasier cette langue, et de généraliser indûment de la langue aux langues, puis des langues au langage”. (To hypostasize this particular language and unduly generalize from that language to languages, then from languages to human language).

5. Warning: In all the glosses, the English translation will seldom be idiomatic, and they will frequently be ungrammatical. In other words, I am using English as a neutral, artificial metalanguage!

6. Dominique found most of his examples in written media; the contexts were explicit as to the negative interpretation of the instances of this construction; this was then corroborated by speakers. For some others, however, there is no necessarily negative association.

7. Over 20 years ago, Bernard Comrie (1981: ch. 11) made a similar claim.

8. I attempt a first such analysis in Bernárdez (in press).

9. In small caps, the personal ending attached to the infinitive, which always ends in –r.

10. One such case is Sanders and Redeker (1996). In this paper, a Dutch text is analyzed by reference to its (abbreviated) English translation; the original text is not even reproduced in a note and all references are to the English forms, as if both languages were one and the same. Already Propp criticized in his On the historical roots of tales, the publication, in the US, of collections of Indian tales and other traditional texts in their English version only which then served as the basis for historical, cultural, anthropological and literary studies.

11. Except among bilingual speakers, especially English-Spanish, who can show a systematic reorganization of the mood system under heavy pressure from English. They lack or have also altered other Spanish grammatical constructions. See Bernárdez (1997a) and the discussion and references therein.

12. Mejías-Bikandi himself (personal communication) recognized the extremely limited validity of examples like these, which unfortunately form the bulk of his article. They may be restricted to some young speakers from the Spanish Basque country, but according to specialists on the variety of Spanish spoken there, this could only be expected in speakers heavily influenced by Basque. However, in spite of their being wrong as examples of the use of the Spanish subjunctive, the examples and their interpretation continue to be quoted without any caveat whatsoever, as if they characterized “Spanish”.

13. Some very important differences separate both methods; Slobin’s (1990, 1996) use of drawings serves to avoid the problems associated with linguistic translation. This type of method is usual among cognitive psychologists, whereas linguists seem to favour translation, although usually no explicit reasons are given for such choice.

14. The “strictly monolingual” linguist is a new species, unheard of since the beginning of modern linguistics (and even long before) and which originated in a very limited habitat, although it has proved extremely adaptive.
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Section 3
A mental-process-oriented Cognitive Linguistics
Embodied action in thought and language

Raymond W. Gibbs, Jr.

1. Introduction

Cognitive Linguistics is a special discipline within the cognitive sciences because it explicitly seeks explanations of linguistic structure and behavior not as if these were distinct from cognition, but as if they arise from, and continue to be a part of, human cognition and experience. I claimed back in 1996, based on a talk delivered to the 2nd ICLC, that:

Much of the work in cognitive linguistics is unique because it attempts to infer something about conceptual knowledge based on the analysis of systematic patterns of linguistic structure. These analyses of systematic patterns in language suggest a variety of conceptual and pre-conceptual structures including idealized cognitive models, image schemas, metaphoric and metonymic mappings, mental spaces, radial structures, and so on. This emphasis on the content of what people know and the bodily experiences that give rise to such knowledge is quite different from the major focus in cognitive science on the general architectural form of human thought and language. (Gibbs 1996: 40).

The idea that much of our knowledge arises from bodily experiences has caught on within cognitive science. My aim in this chapter is to present an overview of embodied cognition that is, in my view, completely compatible with the basic tenets and findings of Cognitive Linguistics, and perhaps broadens them in certain ways. I particularly emphasize the importance of full-scale bodily action in the creation and sustaining of perceptual, cognitive, and linguistic activities. The second part of the chapter describes three related psycholinguistic projects that I am currently engaged in that experimentally investigate the roles of real and imagined bodily action in people’s understanding of metaphorical language. My message here is that significant aspects of how people make sense of, and immediately comprehend, metaphorical language is accomplished by embodied simulation. Thus, people do not simply activated pre-existing
knowledge about embodied metaphors when understanding verbal metaphors. Rather, people construct image-schematic understandings of various concepts and abstract situations by simulating what it must be like for their own bodies to engage in particular actions. These embodied simulations are essential parts of how people conceptualize ideas and events, and are a fundamental part of the process by which they interpret language in real-time.

2. What is embodiment?

Embodied cognition is a hot topic these days in cognitive science, but scholars have many different ideas as to what constitutes “embodiment”. Some suggest that embodiment is ultimately a matter of brain structure and activity and that brain-imaging is the best method for understanding the embodied mind. Other scholars view embodiment as a matter of situated action in which human cognition is studied solely in terms of the behaviors that people exhibit in specific socio-cultural contexts. Still other cognitive scientists, mostly in philosophy, assume that embodiment refers to phenomenological experience (i.e., people’s felt, subjective sensations as they act in the world) apart from specific contexts and brain functioning. To a large extent, scholars’ opinions about the locus of embodiment in cognition tend to mirror their own methodological preferences for studying perceptual, cognitive, or linguistic behavior. Neuroscientists tend to privilege the brain and some peripheral aspects of the central nervous system, anthropologists focus on cultural-specific behaviors, cognitive linguists concentrate on the embodied nature of linguistic structure and behavior, and psychologists tend to study the role of different bodily actions on various cognitive activities. Each perspective has its own strengths and limitation. My own work, as presented below, also embraces certain methodological choices that may limit the generality of my empirical findings.

Nevertheless, embodiment, in my view, encompasses the total interactions of the brain, body, and world as a self-organized, dynamical system (Kelso 1995). Cognition is situated enaction, or a history of structural couplings that “brings forth a world” either by taking part in an existing world, as happens during development and maturation, or by shaping a new one, as happens over the history of a species (Varela, Thompson, and Rosch 1991; Thompson and Varela 2001). Because enaction consists partially in coupling, the agent and the world are not really separate, since they are “mutually specifying”. A person’s world is determined by the agent’s behavior and the sensori-
motor capabilities that allow the individual to cope with a local situation. What people perceive depends upon what they are able to do, and what they do, in time, alters what they perceive. Perception, cognition, and action are linked together as successfully emergent and mutually selecting patterns (Berthoz 2000).

This image of embodiment departs radically from the tradition separation of mind and body that has been most dominant in cognitive science. Most importantly, my view emphasizes how the entire person in action is the best way to conceptualize human cognition, as opposed to the standard view of cognition as abstract mental representations and processes that compose only one part of personhood. At the same time, my view differs from the contemporary aim of reducing embodiment to brain activity. There is certainly much to be gained from studying brain activity during linguistic and cognitive processing. In many case, work in cognitive neuroscience seeks to establish patterns of correlation between neural activity and cognition. But as Roger Sperry (1939) warned over 60 years ago,

> An objective psychologist, hoping to get at the physiological side of behavior, is apt to plunge immediately into neurology trying to correlate brain activity with modes of experience. The result in many cases only accentuates the gap between the total experience as studied by the psychologist and neuronal activity as analyzed by the neurologists. But the experience of the organism is integrated, organized, and has its meaning in terms of coordinated movement. (Sperry 1939: 295)

Sperry’s emphasis on whole organism movement is echoed more recently by Scott Kelso (1995) who has argued,

> It is important to keep in mind... that the brain did not evolve merely to register representations of the world; rather, it evolved for adaptive actions and behaviors. Musculoskeletal structures coevolved with appropriate brain structures so that the entire unit must function together in an adaptive fashion... it is the entire system of muscles, joints, and proprioceptive and kinesthetic functions along with appropriate parts of the brain that evolve and function together in a unitary way. (Kelso 1995: 268)

The brain is certainly part of an integrated dynamical system devoted to the moment-by-moment embodied dynamics of everyday life. Viewing the brain simply as an informational processing or computational device, however, ignores the centrality of animate form to human thought and language. Understanding embodied experience is not simply a matter of
physiology or kinesiology (i.e., the body as object), but demands recogni-
tion of how people dynamically move in the physical and cultural world
(i.e., the body experienced from a first-person, phenomenological perspec-
tive).

Cognitive linguists have already made an important contribution to un-
derstanding the embodied mind through their recognition of least three
levels of embodiment: the neural, the cognitive unconscious, and the phe-
nomenological (Johnson 1987; Lakoff and Johnson 1999).

Neural embodiment concerns the structures that characterize concepts
and cognitive operations at the neurophysiological level. Our concepts and
experience are fundamentally embodied within the brain. Yet the neural
level alone cannot explain the bodily basis of language and cognition.
Brains do not simply receive input from the environment and provide out-
put in the form of instructions to the body. Neural assemblies operate in
relation to the entire body as it functions within concrete situations.

The cognitive unconscious consists of all the mental operations that
structure and make possible conscious experience, including the under-
standing and use of language. The cognitive unconscious makes use of and
guides the perceptual and motor aspects of our bodies, especially those that
enter into basic-level and spatial-relation concepts. It includes all our un-
conscious knowledge and thought processes. The body is crucial at this
level, because all of our cognitive mechanisms and structures are grounded
in patterns of bodily experience and activity.

The phenomenological level is conscious, or accessible to conscious-
ness. It consists of everything we can be aware of, especially our own
mental states, our bodies, our environment, and our physical and social
interactions. This is the level at which we feel experience, of the way
things appear to us, and of qualia, that is, the distinctive qualities of experi-
ence such as a toothache, the taste of chocolate, the sound of a violin, or the
redness of a ripe bing cherry.

Understanding the ways that brains, bodies and world interact to pro-
duce intelligent behavior demands that we recognize all three levels, but
they are not independent of one another. The details of the character of the
cognitive unconscious and of conscious experience arise from the nature of
neural structure. We would not have the spatial-relations concepts we have
without topographic maps or orientation-sensitive cells. The neural level
significantly determines, together with experience of the external world,
what concepts can be and what language can be. People are not just brains,
or neural circuits. Neither are they mere bundles of qualitative experiences
and patterns of bodily interactions. Nor are they just structures and opera-
3. Some implications of Embodied Cognition Perspective

The general view of embodied cognition proposed here has several concrete implications for how cognitive scientists understand different aspects of mind and language. Although the problems discussed here are different from those typically studied by cognitive linguists, it is important to see how cognitive science research is consistent with some of the recent work in Cognitive Linguistics.

First, human minds evolve with neural resources that are primarily devoted to perceptual and motoric processing, and whose cognitive activity consists largely of on-line embodied interaction with the environment. Perception and action are not independent, but tightly linked in successfully emergent and mutually specifying patterns. Perception is not something that only occurs through specific sensory apparatus (e.g., eyeballs and the visual system) in conjunction with particular brain areas, but is a kinesthetic activity that includes all aspects of the body in action. Furthermore, perception is tightly linked to subjunctive thought processes whereby objects are perceived by imagining how they may be physically manipulated.

The function of vision, for example, is to keep the perceiver in touch with the environment and to guide action, not to produce inner experiences and representations. At any given moment, the environment affords a host of possibilities: I could grasp the object, sit on that chair, walk through the door. These are examples of affordances: relations of possibilities between actor and animator (Gibson 1966, 1979). Affordances enable animals to recognize what prey they may eat, predators that may possibly eat them, what trees may be climbed to escape danger, and so on. These properties of objects are its affordances, which become variously salient given our particular interactions with objects. Our perception of affordances is relative to the perceiving object, so that, for example, in looking at a window one perceives not just an aperture, but an aperture that presents the possibility of one’s looking through it. Perception and embodied action are, therefore, inseparable in the perception-action cycle (Neisser 1976), in which explo-
ration of the visual world, for example, is directed by anticipatory schemes for perceptual action.

There is various empirical research that supports this idea of a tight link between perception and action. For example, one of the most important developments in cognitive science over the last 10 years is the discovery of “mirror neurons” in the frontal lobes of humans, and other primates. Mirror neurons are specialized brain cells that show activity both when a person performs an action and when it observes the same action performed by another (possibly conspecific) individual. Research has demonstrated that mirror neurons are activated when individuals watch others perform bodily movement, observe others feeling pain and different emotions, hear voices and music, and see gestures (Stamenov and Gallese 2002). Other studies show that visual perception is rooted in both real and anticipated bodily movement, called “sensorimotor contingencies” (O’Regan and Noe 2001), and that speech perception is accomplished partly through the activation of the motor programs involved in speech production (Liberman and Mattingly 1985). Although cognitive scientists continue to debate these findings and their implications, there is an important trend in the literature to view many aspects of perception as being fundamentally coupled with action. A significant part of how we understand the behaviors of others is accomplished through real and simulated body actions (i.e., activity within the cortex and body that does not lead to actual body movement), sometimes described in terms of “as-if-body” loops (Damasio 1994, 1999, 2003).

A second implication of embodied cognition, as portrayed above, is that concepts of the self, and who we are as persons, are tightly linked to tactile-kinesthetic activity. The boundaries of the self and of personhood are not stable, but are shifting, permeable, and partly structured by social and environmental contingencies. People’s experiences of themselves as “persons” are clearly intimately related to their ordinary bodily experiences. Our sense of agency, ownership of our mental acts, unity, and continuity are tightly linked to the regularity of recurring body activities. But it is generally possible to conceive of personhood as an emergent property of brain, body, and world interactions. These dynamic couplings suggest that understanding the “self”, and our sense of who we are as individual persons with controllable minds and bodies requires special attention to these couplings, not just to brains, bodies, or world as separable entities.

Empirical studies suggest that we have self-schemas that are rooted in our experiences of embodied possibilities. Thus, people’s self-knowledge emerges from the correlation of visual, tactile, and proprioceptive abilities. People are, for example, more accurate at predicting a dart’s location when
watching video clips of themselves throwing the dart than when watching a clip of someone else tossing the dart (Knoblich and Flach 2001). People even better recognize light-displays of their own movements than they do of other people, despite rarely seeing their entire bodies in motion (Knoblich 2002). Our sense of our bodies as our own depends less on its differentiation from other objects and bodies, than to its participation in specific forms of intermodal correlation (van den Bos and Jeannerod 2002).

A third implication of the embodiment perspective is that many abstract concepts are partly embodied as they arise from embodied experience and continue to remain rooted in systematic patterns of bodily action. Cognitive linguistic research surely demonstrates that systematic analysis of the language people use to talk about the world and their experiences is an excellent way to discover the structure and contents of the embodied mind. Within cognitive psychology, one important project has focused on how perceptual processes guide the construction of concrete and abstract concepts. The best example of this work is the development of the theory of “perceptual symbol systems” (Barsalou 1999). Perceptual symbols are derived from the representations generated from perceptual input systems, but are acquired by performing operations on perceptual representations and are similar to these operations. Thus, perceptual symbols are schematic, yet maintain some of the structure of the perceptual representations from which they were derived. Unlike amodal concepts, perceptual symbols are non-arbitrary, because they bear similarity relations to the objects they represent, they include information from the five senses, along with proprioceptive and kinesthetic information. Perceptual symbols are not necessarily conscious images, but are unconscious states of perceptual systems specified neurally.

For instance, the representation of a chair might be specified as a configuration of neurons active in the visual system, rather than as a conscious mental image. These perceptual representations are not necessarily holistic, but can reflect selective aspects of a perceptual state extracted via selective attention and stored in long-term memory. Thus, selective attention might focus on the form of an object, storing only its shape in memory, and not its color, texture, position, size, and so forth. This schematic extraction process not only operates on sensory states, it also works on internal mental events, extracting aspects of representation states, motivational states, and emotions. When there is no sensory input, activation of the conjunctive neurons partially re-enact the earlier visual stimuli. These re-enactments, or simulations, are specific skills that serve as the foundational mechanism for providing context-specific representations of a category. Once this sche-
matic perceptual representation becomes established in memory, it can function as a symbol supporting memory, language, and thought.

Perhaps the most interesting aspect of perceptual symbol theory is the idea that conceptual processing involves sensorimotor simulations. Under this view, concepts are not understood, and stored, as abstract, disembodied symbols, because crucial elements of relevant perceptual and sensorimotor information are used in conceptual processing. Much evidence is consistent with this claim, such as cognitive neuroscience work that concepts are grounded in sensory-motor regions of the brain (Stamenov and Gallese 2002). For example, functional imagery studies demonstrate that processing man-made objects activates the left ventral premotor cortex (Grafton et al. 1997; Martin et al. 1996). Comprehension of man-made, and natural, objects may therefore depend on motor-based knowledge of object utilization (action knowledge). This suggests that concepts are not represented in taxonomic categories, but differ in the kinds of embodied actions they recruit in varying tasks.

Perceptual symbols theory assumes that even when participants receive nonpictorial materials, and are not asked to use imagery, they nevertheless perform perceptual simulations spontaneously. Concepts arise as on-the-fly simulation of events (Barsalou 2003). In standard categorization tasks, for example, people first simulate referents of the concept perceptually and then scan their simulations to produce the required information (e.g., list the features of “chairs”). Participants’ responses in typical categorization task do not, therefore, reflect the pure amodal contents of some pre-existing, taxonomic mental representation. For instance, imagining a chair in a living room evokes a very different chair than imagining a chair in a jet. Perceptual symbol theory suggests that if a conceptualization attempts to simulate a perceptual experience, then it should typically simulate a situation, because situations are intrinsic parts of perceptual experience. These re-enactments or simulations are not necessarily complete. But each conceptualization represents a category in a way that is relevant to the background situation, such that different conceptualizations represent the category differently. In this way, perceptual symbols theory suggests how concepts differentially arise in the moment from a tight coupling of cognitive and motoric processes.

A fifth implication of adopting an embodied perspective on human cognition is that language understanding recruits many of the same processes used in planning and executing actions. I present specific evidence in support of this claim below in regard to metaphor understanding. But a different approach, titled the “indexical hypothesis” (Glenberg and Robertson
2000) specifies how language referring to some situation becomes meaningfully embodied. First, words and phrases are indexed or mapped onto objects or perceptual, analogical symbols (Barsalou 1999). Second, affordances are derived from the objects or perceptual symbols, not the words themselves, which are then meshed under the guidance of intrinsic constraints, context, and syntax.

Research consistent with this perspective demonstrates, for example, that literal action in one direction will interfere with the comprehension of a sentence implying action in an incompatible direction (Glenberg and Kaschak 2002), and that making appropriate hand shapes (pinching one’s thumb and forefinger together) primes people’s verification of literal sentences, “such as throw a dart” (Klatzky et al. 1989). More generally, psycholinguistic work now shows that language understanding makes use of the same neural and embodied systems that plan and guide human action.

A sixth area of research consistent with the embodied cognition perspective indicates that cognitive processes are not located exclusively inside a person’s skin as computations upon mental representations (e.g., propositions, productions, mental images, connectionist networks), but are partly constituted by physical and bodily movements and manipulations of objects in real-world environments. Thus, people employ various “complementary strategies” to alter their environment to enhance their reasoning abilities. These strategies involve embodied action, such as using one’s hands to manipulate Scrabble pieces or to do arithmetic using pencil and paper, that help people improve their thinking and memory needed to solve problems (Kirsh 1995; Kirsh and Maglio 1994). A different example of work consistent with this theme shows that people making a complex recipe engage in embodied action using external resources (e.g., physically manipulating some amount of cheese) rather than figuring out the exact amount needed using arithmetic (Brown, Collins, and Duguid 1989). Students can solve physics problems more effectively, in regard to ideas about space, time, and speed, when allowed to move their bodies in various ways, thus connecting static representations of motion directly to their own embodied action (Liljedahl 2001). Most generally, formal reasoning skills are not independent of people’s ability to physically manipulate their own bodies and the external environment. The body provides valuable resources for off-loading cognition such that mind is distributed across brain, body, and world interactions.

Finally, emotion and consciousness arise from bodily movement. Most cognitive theories admit that an important body component in the emotion process is the readiness to take action. This readiness to act is a corporeal,
felt urge to do something, approach someone, strike someone or something, touch someone, run away from something, and so on. Emotion is not identical to simple action like kicking, embracing, running, etc., but reflects a change in potential attitudes, or an affective sense of such action (Sheets-Johnstone 1999). Research shows, in fact, that people distinguish between different emotions terms (e.g., love, guilt, humiliated) in terms of the different, sometimes subtle, bodily movements they evoke (Manaster, Clelland, and Brooks 1978). Diary studies show that when people imagine specific emotions, these often correspond to very specific changes in body movements and posture (Wallbott 1998). One way to characterize the felt dimension of emotional experience is in terms of “affective space”, or the space we move through as we experience different emotions (Cataldi 1996). Consciousness is also clearly associated with basic sensory and motor processes (Newton 1995). People experience consciousness when sensorimotor imagery in working memory, consisting of sensory and motor associations, distributed across the cortex, in combination with ongoing somatosensory input. Even higher-order consciousness is closely tied to feelings of simulated enactment (Shannon 2002).

This overview touches on only a few selected topics in cognitive science, but suggests that there is a clear trend in which various aspects of human perception, cognition, and language are tightly linked to embodied action.

4. Embodiment and metaphor

Cognitive linguistic research has strongly argued that language reflects important aspects of human conceptualization and thus is not independent from mind (i.e., as a separate module). Systematic patterns of linguistic structure and behavior are not arbitrary, or due to purely linguistic generalizations, but are motivated by recurring patterns of embodied experience (i.e., image-schemas) that are often metaphorically extended (Gibbs and Steen 1999; Lakoff and Johnson 1999). There is now a large literature describing how image-schematic structures motivate the existence of a vast number of abstract concepts as these are evident in language. Much of my own research in experimental psycholinguistics on embodied cognition directly examines the role of embodiment in people’s use and understanding of metaphorical language (Gibbs 2005). This research takes off from some of the basic findings within Cognitive Linguistics to demonstrate the psychological reality of embodied action in motivating why various words
and phrases mean what they do, and in how people use and immediately understand of language. An important theme of this work is its suggestion that understanding metaphorical discourse, for example, depends not on the activation of pre-stored abstract concepts, even if these are partly structured by image-schemas. Instead, people create embodied simulations of metaphorical concepts on-the-fly during their interpretation of discourse. The following sections describe three different projects, all of which are still in-progress, which generally demonstrates the fundamental importance of embodied action in thought and language.

5. Imagining metaphorical actions

Mental imagery is a natural cognitive ability that can also reveal important insights into conceptual processing. It is easy to form mental images of people engaging in concrete actions, such as chewing the gum, swallowing a pill, coughing up blood, and breaking off a branch. But is it possible to form coherent mental images for physically impossible actions, such as chewing on an idea, swallowing one’s pride, coughing up a secret, or breaking off the relationship? At first glance, it seems odd to associate ideas with chewing, secrets with coughing, and so on. But cognitive linguistic research has shown how people ordinarily conceive of abstract concepts in physical terms and can apply various embodied actions to these objects/concepts as a result. For example, ideas are physical objects, such as food that can be chewed on and digested in order to gain valuable information from. The aim of the first project was to explore via mental imagery tasks whether people have embodied metaphorical understandings of abstract concepts.

Participants heard a specific phrase that was either metaphorical (e.g., “grasp the concept”) or nonmetaphorical (e.g., “grasp the branch”). They were then given 10 seconds to form a “mental image of doing or engaging in this action”. Immediately afterwards, the participants answered a series of questions that were designed to probe their constructed images. The first question asked

“How easy was it to form your mental image for this phrase?” Participants gave their responses by picking a number on a 7-point scale, where 1 indicated “not easy” and 7 indicated “very easy”. Participants were urged to use all portions of the rating scale in making their responses. Analysis of the data for this first question revealed, not surprisingly, that people found
it significantly easier to form mental images for the nonmetaphors (4.52) than they did the metaphor (3.80).

The second question participants answered was “How easy to feel the action in your image?” Once more, participants responded that it was easier to sense the actions in the nonmetaphors (4.57) than the metaphors (3.64). This finding is quite reasonable given that the nonmetaphorical phrases referred to real-world physical actions, while the metaphors referred to actions that could not physically be performed in the real-world. In fact, responses to the third question, “How difficult is it to actually perform the action?” support this in that people gave much higher ratings to the nonmetaphors (4.07) than the metaphors (2.42).

The remaining questions more directly probed the contents of people’s mental images for the metaphorical and nonmetaphorical phrases. Question 4 asked “What is particularly noticeable in your image?” Not surprisingly, people gave a wide variety of responses to this question. But these varying answers could be roughly divided into two groups. The first set of answers made some specific reference to the participants actually participating in the action. For example, when one participant was given the metaphorical phrase “chew on the idea”, she noted “My jaw goes up and down as I chew”. People actually gave far more of these specific reference to participating in the action responses for the nonmetaphors (63%) than to the metaphors (29%). This result again makes sense given that people found it easier to image the specific action performed in the nonmetaphorical phrases.

The other set of responses provided a conceptualized description of the action. For instance, when a person was presented with the metaphor “stretch for understanding”, he said that the most noticeable thing in his image was “there is much stretching going in both in terms of the ideas being stretched out to see if they are true and me stretching to better see of examine the idea”.

This response provided an excellent example of how embodied metaphor constrains the kinds of mental images that people construct when hearing metaphorical action statements. The participant essentially noted that IDEAS ARE OBJECTS that can be physically inspected, by stretching them out to more effectively examine them, and that UNDERSTANDING IS GRASPING because the person must extend his or her body to better control the object, and thus better understand it. Overall, people gave significantly more conceptualized description of the action responses when they were presented with the metaphors (71%) than the nonmetaphors (37%). This too makes sense given that the nonmetaphors can be under-
stood simply in terms of the physical actions they depict without any mental mapping of knowledge from a different domain of experience. The metaphors, on the other hand, are understood in terms of mappings from embodied source domains onto abstract target domains, which influence what participants find most notable in their mental images for these figurative phrases.

The final question asked participants “Why is this concept (e.g., idea) sometimes associated with this action (e.g., chewing)?” Once again, participants gave a wide range of answers in response to this question, and these were roughly classified into two groups. The first set of responses focused on providing a concrete explanation of the relevant process or action. For instance, when one participant heard the nonmetaphorical phrase “chew on the gum” she responded with “That is what you do with gum-chew on it”. Another participant was presented with the metaphorical phrase “put your finger on the truth” and responded “because that is what you do in explaining the truth”. Both these responses concentrate on the conventional relationship between some object or concept and some action or process. Yet none of these responses provide in-depth insights into the underlying relationship between a concept and an action. The data revealed that participants gave significantly more concrete explanation of the process answers to the nonmetaphors (59%) than to the metaphors (19%).

The other group of answers specifically provided an analogous, conceptual explanation as to why some concept was sometimes associated with some action or process. For instance, for the metaphorical phrase “chew on the idea”, one person said “Chewing is related to a slow methodological activity and it could be related to turning something over in your mind to better understand it”. Overall, people gave analogous, conceptual explanations significantly more often to the metaphors (77%) than to the nonmetaphors (36%). This result is as expected, assuming that people’s mental images for metaphorical action phrases are constrained by their embodied, metaphorical understandings of the target domains referred to in these expressions (e.g., ideas, concepts, feelings). Nonmetaphorical phrases are not understood via embodied metaphorical knowledge in quite the way that metaphorical phrases are, and people are therefore far less likely to focus on these underlying conceptual, embodied motivations in constructing mental images for realistic physical actions, such as chewing the gum.

There are several important conclusions to be drawn from these findings. First, people’s mental images for metaphorical actions provide excellent evidence for their embodied understandings of what these phrases metaphorically mean. Previous research showed that people can readily form
mental images for idiomatic and proverbial phrases (e.g., “spill the beans” and “let sleeping dogs lie”) that have realistic physical interpretations (i.e., one can actually spill some beans) (Gibbs and O’Brien 1990; Gibbs, Strom, and Spivey-Knowlton 1997). We argued earlier that people’s mental images for these figurative phrases were significantly constrained by the underlying conceptual metaphors that linked the surface forms of utterances with their figurative interpretations. The new empirical results presented here suggest that people can form mental images, and have distinct intuitions about them, for metaphoric phrases referring to physically impossible actions such as chewing on ideas, grasping concepts, etc.

I do not claim that people necessarily engage in these imaginative processes every time they hear these familiar, conventional phrases. After all, the highly conventional nature of many of the metaphorical phrases studied here suggests that these are easily understood, and current research suggests that people need not form explicit mental images of metaphorical language, or any other type of language for that matter, during on-line processing of these expressions in ordinary discourse (Gibbs 1994). But asking people to slow down and form explicit mental images for metaphorical and nonmetaphorical language still reveals significant differences in people’s intuitions about why these phrases have the specific meanings they do, including the important role of embodied metaphor in constructing simulations of different metaphorical actions.

Most importantly, the present results indicate that people can clearly, and easily, engage in simulations of bodily actions to figure out why metaphorical phrases, which refer to physically impossible actions, nonetheless have the specific meanings that they do (even in a task that presents these phrases to participants without additional context).

6. Bodily movement and metaphor comprehension

A different line of research investigated the possible influence of bodily action on people’s speeded processing of simple metaphoric phrases, as “stamp out a feeling”, “push an issue”, “sniff out the truth” and “cough up a secret”, each of which denote physical actions upon abstract items. Wilson and Gibbs (2004) hypothesized that if abstract concepts are indeed understood as items that can be acted upon by the body, then performing a related action should facilitate sensibility judgments for a figurative phrase that mentions this action. For example, if participants first move their arms and hands as if to grasp something, and then read “grasp the concept”, they
should verify that this phrase is meaningful faster than when they first performed an unrelated body action. Our hypothesis was that engaging in body movements associated with these phrases should enhance the simulations that people create to form a metaphorical understanding of abstract notions, such as “concept”, even if “concepts” are not things that people can physically grasp. People’s conceptual understandings of what a “concept” is, for example, need not be completely embodied and metaphorical. However, our suggestion is that some simulated construals of “concept” are rooted in embodied metaphor that may be highlighted by engaging in body actions relevant to what people mentally do with ideas.

Participants in this study first learned to perform various specific bodily actions (e.g., throw, stamp, push, swallow, cough, grasp) given different nonlinguistic cues. Following this, participants were individually seated in front of a computer screen. The experiment consisted of a series of trials where an icon flashed on the screen, prompting the participant to perform the appropriate bodily action. After doing this, a string of words appeared on the screen and participants had to judge as quickly as possible whether that word string was “sensible”.

Analysis of the speeded sensibility judgments showed that participants responded more quickly to the metaphorical phrases that matched the preceding action (e.g., the motor action grasp was followed by “grasp the concept”), than to the phrases that did not match the earlier movement (e.g., the motor action kick was followed by “grasp the concept”). People were also faster in responding to the metaphor phrases having performed a relevant body moment than when they did not move at all. In short, performing an action facilitates understanding of a figurative phrase containing that action word, just as it does for literal phrases. A second study showed that same pattern of bodily priming effects when participants were asked to imagine performing the actions before they made their speeded responses to word strings. This result reveals that real movement is not required to facilitate metaphor comprehension, only that people mentally simulate such action.

Most generally, people do not understand the nonliteral meanings of these figurative phrases as a matter of convention. Instead, people actually understand “toss out a plan”, for instance, in terms of physically tossing something (i.e., plan is viewed as a physical object). In this way, processing metaphoric meaning is not just a cognitive act, but involves some imaginative understanding of the body’s role in structuring abstract concepts. People may create embodied simulations of speakers’ messages that involve moment-by-moment “what must it be like” processes that make use
of ongoing tactile-kinesthetic experiences. These simulations processes operate even when people encounter language that is abstract, or refers to actions that are physically impossible to perform.

7. Embodied simulations in understanding metaphorical narratives

The research described above offers empirical findings that seem very compatible with the possibility that image-schemas maintain their embodied roots and help create imaginative construals of linguistic meaning. I now describe in some detail an interesting new line of research that provides more direct evidence in favor of the idea that image-schemas as different kinds of simulated action. This work focuses primarily on the image-schema of SOURCE-PATH-GOAL. In this work, college students listened to one of two kinds of stories about romantic relationships, as shown below:

Smooth Journey
“Imagine that you are a single person. A friend sets you up on a blind date. You really like this person and start dating a lot. Your relationship was moving along in a good direction. But then it got even better. The relationship felt like it was the best you ever had. This continues to this day. No matter what happens, the two of you are quite happy together”.

Interrupted Journey
“Imagine that you are a single person. A friend sets you up on a blind date. You really like this person and start dating a lot. Your relationship was moving along in a good direction. But then you encountered some difficulties. The relationship did not feel the same as before. This lasted for some time. No matter how hard you two tried, the two of you were not getting along”.

These two stories describe relationships as being like a journey, as indicated solely by the statement “Your relationship was moving along in a good direction” in the fourth line of each story. Although no other part of the two stories refers to journeys in any way, the two stories differ in the kind of metaphorical journey (i.e., source-path-goal schema) that each relationship takes. The first story gives the impression of a smooth, uninterrupted journey, and the second of a more difficult, perhaps interrupted, journey. My basic hypothesis was that people understand these two stories
not by merely activating a RELATIONSHIPS ARE JOURNEYS conceptual metaphor, in which the source domain is structured by the SOURCE-PATH-GOAL image-schema. Instead, people imaginatively simulate themselves in the journey and actually experience some embodied sense of the SOURCE-PATH-GOAL schemas as part of their understanding of the stories. If this is the case, listening to these different renditions of the RELATIONSHIPS ARE JOURNEYS conceptual metaphor should have different embodied effects on the people who understand them.

To test this idea, I first asked a group of students to read the two stories and then answer a series of questions that were designed to tap into the students’ intuitions about the SOURCE-PATH-GOAL image-schema at play in these stories. The first question asked, “Which relationship progressed further?” to which 90% of the participants responded the smooth journey story (the stories were not actually labeled like this). The second question was “Which relationship was progressing faster at the beginning?” which provoked a split in the participants’ responses with 45% saying the smooth journey story and 55% the interrupted journey story. The third question was “Which relationship is progressing faster at present?” to which 90% of the participants picked the smooth journey story. The fourth question asked, “Which relationship progressed more along a straight line?” to which 60% picked the smooth journey story. Finally, the participants were asked, “In which relationship were the individuals heading in the same direction?” to which 80% selected the smooth journey story.

It is important to note that there is nothing in the individual stories that directly assert anything about the distance, speed, extent, and direction of the journeys traveled. All of these inferences were drawn on the basis of people metaphorical understandings of the stories as referring to RELATIONSHIPS ARE JOURNEYS. The data clearly suggest that the couple in the smooth story had progressed further overall, were doing so faster at the present time, were moving more along a straight path, and were headed in the same direction, compared to the couple depicted in the interrupted journey story. The question, then, was whether these detailed SOURCE-PATH-GOAL image-schematic understandings of the stories had any embodied influence on people as they imaginatively constructed their interpretations.

I examined this possibility in the following way. Groups of college students individually participated in an experiment on a large athletic field at the University of California, Santa Cruz.

Each experiment began with a student standing on one spot looking out at large yellow ball that was placed exactly 40 feet away. As the students stood and stared out at the yellow ball, they were read one of the two sto-
ries above. Immediately after hearing the story, the participants were blindfolded, and asked to walk out to the yellow ball while they were “thinking about the story” they had just heard. At that point, students began to walk out to where they thought the yellow ball was and then stopped when they thought they were right at the ball. Once they stopped, an experimenter nearby asked each participant to rate on a 7-point scale how they felt at the moment. After this, the blindfold was removed, and the experiment was over. The experimenters then measured how close the student actually was to the yellow ball, and how far away from a straight line each participant wandered from the starting point to the yellow ball.

Did students walk differently having heard the smooth journey as opposed to the interrupted journey story? In fact they did. According to the preliminary study, students hearing the smooth journey story assumed that the relationship progressed further than the one in the interrupted journey. Indeed, in the walking study, blindfolded students who heard the smooth journey story walked past the yellow ball by almost 4 feet on average, while the students who heard the interrupted journey undershot the yellow ball by more than 1 foot, a statistically significant difference. This difference in walking distance was not due to participants being happier or in a better mood because they simply heard a more positive story as indicated by the fact that the students who heard the interrupted journey actually gave higher mood ratings than did those in the smooth journey condition. I am not sure how to explain this mood difference between the two story conditions. At the very least, though, these mood ratings eliminate the alternative explanation that longer walking distance was due to the participants being momentarily happier.

A different version of this experiment had college students listening to the same stories, again looking out at the yellow ball. This time, however, students were blindfolded, but instructed to only imagine themselves walking out to the yellow ball as they thought about the story, and to press a stop watch as soon as they imagined themselves arriving at the ball. Interestingly, the identical pattern of effects was obtained as found during real walking. It appears, then, that thinking about the two stories differentially affected people’s imagined walking, and it did this for both real and imagined motion.

This line of research is still in its infancy. But the findings observed in these experiments strongly suggest that image-schematic reasoning in narrative comprehension involves the construction of embodied simulations. These simulations are embodied because of the functioning of “as-if body” loops that are part of people’s immediate understanding of other individu-
als’ actions, including those associated with overt communication. One implication of this view is that people’s aesthetic appreciation of language is itself embodied. Instead of people first understanding language, and then having emotional/aesthetic responses to it, people experience as part of their immediate simulated construals of meaning. Thus, we feel something when read or thinking about a successful or interrupted relationship journey because of the embodied “as-if” simulations that created during our image-schematic (e.g., SOURCE-PATH-GOAL) construals of each respective relationship.

8. Conclusion

Body action is not divorced from human perception, cognition, and language. Contrary to traditional disembodied views of thought and language, many aspects of how people think, including about abstract ideas, and speak are grounded in pervasive patterns of bodily movement. These actions provide the original motivation for symbolic thought and language, but also continue to sustain these embodied representations such that higher-level symbols are never totally abstract. At the same time, people engage in imagined bodily actions as they create context-specific simulations of both concrete and abstract concepts and interpret embodied construals of other’s communicative messages (Davis and Stone 1995).

All of these conclusions are consistent with cognitive linguistic research, and its recent advocacy of understanding embodiment at three levels of analysis (Feldman and Narayanan 2004; Lakoff and Johnson 1999). I have emphasized in this chapter the importance of whole-body action in the creation and sustaining of perception, cognition, and language use, and suggested that human thought and language, most generally, must be studied and understood in terms of brains, body, and world interactions. This perspective provides a slight corrective to some cognitive linguistic work that tends to assume that conceptual and linguistic representations are abstracted away from bodily experience, or more specifically that image-schemas become part of people’s enduring conceptual representations. My take on this is that image-schemas are as much created on-the-fly, perhaps as part of people’s simulations of meaning, as they are activated from long-term memory. In this way, metaphor understanding is accomplished as a kind of embodied simulation in which target domains are immediately construed as subjective, felt source domain as a person tries to make sense of the discourse.
Finally, the work described in this chapter provides another source of evidence in support of the “cognitive commitment” within Cognitive Linguistics, in which cognitive linguists seek explanations of linguistic structure and behavior in line with contemporary empirical findings on human cognition from cognitive science. Not only does much of the work on embodied action in thought and language fit into the main themes of Cognitive Linguistics, and its emphasis on embodiment. But Cognitive Linguistics, through its demonstrations of the embodied grounding for many aspects of language, has created a intellectual climate for cognitive scientists, like myself, to empirically investigate using different experimental methods the precise ways that embodied experience motivates both language and thought.

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1. Introduction

The question of conceptual interaction has been a relatively important area of interest in Cognitive Linguistics, especially in work carried out by Mark Turner and Gilles Fauconnier in relation to mental space theory and the notion of ‘blending’ or ‘conceptual integration’ (see Fauconnier and Turner 1996, 1998, 2002; Turner and Fauconnier 1995, 2000). Blending theory has had an enormous impact on the cognitive linguistic community. It is generally seen as complementary to the standard cognitive model theory propounded by Lakoff (1987) and his associates (see Lakoff and Johnson 1999) to the extent that it basically explores the same range of phenomena (metaphor and metonymy included). The crucial difference is the greater emphasis of blending theory on the process of meaning construction, while the standard theory of metaphor and metonymy is predominantly a theory of meaning representation.

There are some aspects of mental space theory that have been challenged in Ruiz de Mendoza (1996, 1998), in particular those connected with the apparent irregularities and asymmetries found in blended mental spaces. In this connection, we propose an alternative account that explains such irregularities and idiosyncrasies in terms of the activation and principled combination of multiple source and target input spaces. These are projected and integrated into single composite source and target spaces that thus become available for metaphoric, metonymic, or other related cognitive operations. As complementary to this proposal, we take up previous work on conceptual interaction patterns carried out by Ruiz de Mendoza and Diez (2002) and examine their role in projection tasks. Since interaction patterns place constraints on conceptual projection and integration, they need to be taken into account by mental space theory. However, inter-
action patterns are only one kind of constraint on conceptual projection. They allow us to know about interaction possibilities but they reveal nothing about the kinds of cognitive operation that underlie the projection and integration of conceptual structure from different mental spaces. So we shall also address the issue of how such operations govern the flow of information into what we call the projection space and they ultimately determine the final form it takes.

2. Mental spaces and blending

According to Fauconnier and Turner (2002: 40), a mental space is a small conceptual packet built up provisionally as we think and talk for the purpose of local understanding and action. It must be noted that a mental space is a dynamic construct that derives its structure from a non-dynamic conceptual repository. In this respect it differs from the notion of ‘idealized cognitive model’ – put forward by Lakoff (1987) and widely accepted nowadays in the cognitive linguistics community – which is used to refer to different forms of conventional knowledge such as Fillmore’s (1985) frames (conceptual structures with processes, roles, and participants), Johnson’s (1987) image-schemas (such as the notions of ‘container’ and ‘path’), metaphor, and metonymy (Lakoff and Johnson 1980, 1999). In fact, some mental spaces (like metaphoric inputs) import their structure from frames or image-schemas, while others (like blends) are the result of an integration process, like the one triggered off by a metaphoric or a metonymic mapping.

Blending theory is a theory of conceptual projection and integration of mental spaces. In metaphor processing and production, it is proposed that there are usually four mental spaces involved. Two of them, which would roughly correspond to the traditional source and target domains of Lakoff and Johnson’s (1980, 1999) metaphor theory, are called input spaces. Input spaces have elements that correlate on the basis of the generic structure that they have in common; this structure constitutes a generic space. There is a fourth space, the blended space or blend, which derives its structure from the correlated inputs. Blends exploit and develop counterpart connections between input spaces and in so doing integrate simple related events into more complex events. Blends are dynamic (during blending conceptual work involving the activation of new spaces and the modification of previously activated ones may be required) and they may have structure that is not provided by the input spaces. In fact, they may even contain “emerg-
gent” structure inconsistent with that of the input spaces. The four-space model is diagrammed in figure 1 below.

![Figure 1. Turner and Fauconnier’s four-space model](image)

By way of illustration of how this model works, consider the following example taken from Fauconnier and Turner (2001). In it, a clipper, *Great America*, which currently sails from San Francisco to Boston, is involved in an imaginary race against the *Northern Light*, which did the same journey in 1953. In order to understand this situation, we need to combine the following mental spaces: one input space for the passage of the Northern Light in 1953; another for the passage of the present run by the Great America; a generic space, which extracts structure common to the two input spaces (i.e. a ship makes a journey of a certain duration from a source to a destination); and the blended space into which the Northern Light and the Great America are projected as taking part in a race. The blended space has emergent structure that does not exist in any of the input spaces, where there is no competition between two ships, but only two separate journeys carried out on different dates.

A different but comparable situation is provided by the analysis of the expression *You could see the smoke coming out of his ears* (Turner and Fauconnier 2000: 136). In terms of Turner and Fauconnier’s analysis, if we postulate a cross-domain mapping in which the source consists of a con-
tainer (typically a pot or a kettle) with boiling water and the target a person’s head, there arise some inconsistencies: boiling water gives off steam, not smoke, which is naturally released through an opening which, unlike the ears, is not found on the sides of the container. The natural solution for Turner and Fauconnier is to think of the blend as inheriting part of its structure from the source input and part from the target input, while it also has emergent structure produced by the blend itself.

3. The combined input hypothesis

The existence of emergent structure and of non-correspondences is a peculiar feature of blends in Turner and Fauconnier’s proposal. However, this hypothesis, which we shall call the emergent structure hypothesis, has been questioned by Ruiz de Mendoza (1996, 1998), Ruiz de Mendoza and Díez (2002), and Ruiz de Mendoza and Santibáñez (2003). These authors give alternative accounts of some of Turner and Fauconnier’s best-known examples of metaphor in terms of the activation of multiple source inputs which, after being combined and integrated into one single source, correlate with relevant elements of the metaphoric target. We shall refer to Ruiz de Mendoza and Díez’s proposal as the combined input hypothesis.

In order to show the explanatory power of the combined input hypothesis, we shall consider again the example of the race between the Northern Light and the Great America. Under this hypothesis, the race frame is not created by the blend, but derived from pre-existing, already available knowledge about races, i.e. from an extra input space, and, if this is correct, a revision of their explanation is required. In this alternative view, the Northern Light vs. Great America example requires the activation of three input spaces: one containing the journey of the Northern Light; a second one providing a characterization of the journey of the Great America; and the third one supplying information about races. Once the two clippers have been assigned the racers’ role in the projection space (the blend in the standard four-domain model), whatever the two clippers do will have to accord with the conceptual structure of the domain of races. This situation is represented in figure 2 below.

Let us now go back to the sentence You could see the smoke coming out of his ears. We analyze this example in terms of the activation of two combinable source inputs: one selects its structure from the CONTAINER image-schema; in the other there is a burning object or substance (e.g. firewood) which produces smoke. The target input has a very angry person. External
signs of anger (sweat, redness) in the target correlate with external signs of combustion inside the container (smoke, heat) in the composite source. Figure 3 below captures the essentials of this process.

In the *combined input hypothesis* the presence of more than one combinable source or target input is not always necessary. Thus, it is often the case that one single source is able to provide all the structure needed to correlate all relevant elements of the metaphoric source and target. Let us consider in this regard Grady, Oakley, and Coulson’s (1999: 103) discussion of the metaphor *This surgeon is a butcher*, which a faithful application of what we have labeled the emergent structure hypothesis. According to Grady, Oakley, and Coulson (1999), Lakoff’s traditional two-domain model of metaphor would give an account of this expression in terms of direct projection from the source domain of butchery to the target domain of surgery. This projection would be guided by a number of counterpart mappings: from ‘butcher’ onto ‘surgeon’, from ‘animal’ onto ‘human being’, from ‘commodity’ onto ‘patient’, from ‘cleaver’ onto ‘scalpel’, among others. However, these authors believe that there is a crucial meaning element that is eluded in the traditional analysis: the suggestion that the surgeon is incompetent.

In their view, this notion is not projected from the source to the target, since butchers are typically competent at what they do. Grady, Oakley, and Coulson (1999) conclude that the idea that the surgeon is incompetent is emergent structure, peculiar to the blend, which results from contrasts between surgeons and butchers, a factor that goes beyond a cross-domain mapping. Thus, the blend combines the surgeon’s goal of healing his patients with the butcher’s means of achieving his own goal of cutting flesh. The blend does not import either the butcher’s goals or the surgeon’s conventional means of performing surgery.
Figure 2. Imaginary race between the Northern Light and the Great America
The problem with this analysis is that it makes the strong claim that in the blend there is actual integration of conceptual elements from the source and target. However, such integration would involve an interpretation of This surgeon is a butcher in which the surgeon, in doing surgery, actually performs the same movements as a butcher cutting up an animal. If there is no actual integration of elements but only correlation and contrast, we can make the weaker but more plausible claim that there is only similarity between the way a butcher and a surgeon work. Thus, we think of the surgeon using his scalpel in a careless or clumsy way; a comparable way of using the cleaver is not careless in a butcher’s activity, since much less accuracy is required. In any case, the idea
that the surgeon in this metaphor is incompetent is not emergent structure any more than other implications that follow naturally from the correlation and consequent comparison of the metaphorical elements in correspondence. For example, another implication of the metaphor concerns the probable poor state of the patient after the figurative butchery; and still another is the surgeon’s lack of concern for or perhaps his unawareness of his own incompetence. These observations lead us to conclude that while it is correct to state that the blend has emergent structure (i.e. new structure arising from correlation and contrast), it is not accurate to maintain that this structure is the result of integrating non-corresponding elements.

It must be observed that integration in the combined input hypothesis is limited to cases of multiple source or target domains. In examples like the surgeon-butcher metaphor there is no integration but only correlation and contrast. We see some of the characteristics of one domain in terms of some of the characteristics of another domain. This allows us to derive meaning implications that are projected into the blend. The blend is thus the repository not only for explicit but also for implicit knowledge. This issue will be addressed in some more detail in section 6 below.

To sum up, the difference between the two conceptual projection hypotheses is evident from the comparison between the standard model as represented in figure 1 above and the diagram in figure 4 below.

Figure 4. Combined input hypothesis
The *combined input hypothesis* preserves some of the most relevant characteristics of Turner and Fauconnier’s account. Thus it retains the notion of ‘mental space’ as a dynamic construct which derives its structure from an idealized cognitive model or from other mental spaces. It also retains the basic correlational structure between source and target inputs and the notion of ‘generic space’ as a mental space containing generic structure abstracted away from source and target. Finally, it makes use of the notions of ‘projection’ and ‘integration’ as two crucial cognitive operations involved in conceptual interaction. However, there are a number of significant differences between our own account and Turner and Fauconnier’s. We make the following claims:

- The label ‘blend’ may not be retained. It is more accurate to use the alternative term ‘projection space’. Unlike a blended space or blend, a projection space is the result of ongoing cognitive activity, not the creator of such an activity.
- Projection spaces (i.e. the counterpart of Turner and Fauconnier’s blends) do not contain structure inconsistent with the structure projected from the input spaces. The apparent existence of emergent structure is explained in terms of the activation of multiple conceptual spaces that interact according to a range of possible operations and constraints.
- Projection spaces are not dynamic in the sense that Turner and Fauconnier postulate for blends, i.e. by being able to create their own emergent structure independent of the structure provided by the input spaces. Instead, we consider projection spaces to be the outcome of previous cognitive activity.
- Cognitive operations like integration, correlation, and contrast play a prominent role in regulating the outcome of the projection process. Other operations are also considered (see section 4 below): domain expansion, domain reduction, strengthening, mitigation, completion, counterfactual conditioning, and probably others.
- Conceptual projection is also constrained by conceptual interaction patterns (see section 5 below).
- Projection spaces may become inputs for further conceptual projection operations, as in implicature derivation processes (see section 6 below). These operations abide by all the constraints indicated above.

There are, in our view, three clear advantages of the *combined input hypothesis* over the emergent structure hypothesis. One is that there is no need in it to postulate the existence of non-correspondences or inconsist
cies in the correlational structure of the metaphor. Another is that a projection space is, in consonance with the nature of other mental spaces, the result of cognitive activity and not the producer of such activity. The third one is that the operations of correlation and integration are assigned their proper places: in the combined input hypothesis, correlation takes place before conceptual structure is integrated into the projection space; in the emergent structure hypothesis, correlation is partly a matter of the blend, as the result of an irregular projection system.

From our discussion so far, it will have become evident that the notion of ‘cognitive operation’ plays a central role in the creation of projection spaces. In what follows we shall examine in greater detail the implications of this notion for our account.

4. Cognitive operations

By a cognitive operation we mean a mental mechanism whose purpose is to derive a semantic representation from a linguistic expression (or of other symbolic device, such as a drawing) in order to make it meaningful in the context in which it is to be interpreted. Here a brief terminological digression may be in order. The terms ‘cognitive’ and ‘conceptual’ sometimes seem to be used rather interchangeably in Cognitive Linguistics. For example, many cognitive linguists would accept to use ‘conceptual mechanisms’ as synonymous with ‘cognitive mechanisms’. However, it may be wise to reserve the term ‘cognitive’ to refer to mental processes and the term ‘conceptual’ to talk about the outcome of such processes. Thus, it should be preferable to speak of conceptual interaction, if our focus is on the different interaction patterns that emerge out of cognitive activity. By the same token, it would be more appropriate to talk about cognitive mechanisms to underscore their dynamic nature. The notion of ‘cognitive model’, first proposed by Lakoff (1987), was conceived as having both a processual and a resultative aspect. As an organizing principle (e.g. a metaphoric mapping), it has a dynamic nature. In this case, the term ‘cognitive model’ would seem to be more felicitous. On the other hand, a cognitive model is often seen as the result of the activity of an organizing principle (e.g. a metaphor). It may be suggested that the term ‘conceptual model’ may be used in the latter case.

Metaphoric and metonymic mappings seem to be clear cases of cognitive operations. However, saying that a mapping is a cognitive operation, although correct, is an oversimplification. Let us see why. A cognitive
mapping is defined as a set of correspondences between two (conceptual) domains. In metaphor the mapping is carried out across discrete conceptual domains; in metonymy, the mapping is internal to one domain, i.e. there is a domain-subdomain relationship where a subdomain may map onto the domain it belongs to or, conversely, a domain may be mapped onto one of its subdomains. The fact that metathoric mappings are domain-external and metonymies are domain-internal has important consequences in terms of the kinds of cognitive operation that support the mapping.

4.1. Correlation and contrast

Metaphors may be classified from various perspectives, such as the ontological nature of the domains involved, their degree of genericity, the complexity of the metaphoric operation, the number of correspondences in the mapping, and the nature of the correspondence between source and target. The typological issue has been addressed in some detail in Ruiz de Mendoza and Otal (2002: 43–50). Here we are only concerned with the last of the perspectives mentioned above. In this connection, Grady (1999) has distinguished between correlational and resemblance metaphors. The former involve a correlation between different but naturally co-occurring dimensions of experience, as in CONSCIOUS IS UP/UNCONSCIOUS IS DOWN (e.g. Get up, He fell asleep, He sank into a coma), which correlates the experience of humans (and most mammals) rising up when they awake and lying down when they go to sleep. The latter take place when source and target have comparable attributes, as in John is a lion, where we think of John as having the kind of instinctual courage and fierceness that we observe in lions.

The previous examples have allowed us to see that comparing and correlating are different forms of cognitive operation which underlie metaphoric mappings. In our view, these two operations may combine to yield a complex range of meaning implications. Consider the metaphor Journalists dug up some interesting facts. In it we see the discovery of unknown information by journalists in terms of diggers finding hidden objects (typically treasures or archeological remains) by removing them from the ground. Journalism and treasure-hunting have enough features in common to license the metaphor INVESTIGATING (A PROBLEM) IS EXPLORING (A LANDSCAPE). But in our example, this metaphor works in combination with the correlational metaphor KNOWING IS SEEING, which is based on the primary experience of getting information through vision (Lakoff and Johnson
The combination of the two metaphors allows us to derive the implication that, just as an object which is taken out of the ground becomes accessible to visual inspection and therefore to intellectual apprehension, whatever the journalists have been able to reveal is now available for other people to know.

4.2. Expansion and reduction

Generally, metaphoric mappings work on the basis of many correspondences, although some metaphors only seem to exploit one correspondence, as in *My tender rose abandoned me*, where only one relevant attribute of roses (i.e. the kind of feelings it evokes by virtue of its beauty, scent, and color) is at work in the mapping from plant to person. Metonymic mappings are also based upon one correspondence. In this case, this is the consequence of the domain-subdomain relationship that is definitional of metonymies. Thus, it would be impossible to map more than one element of a subdomain onto the domain to which it belongs, or conversely to map a whole domain onto more than one of its subdomains. In this view, one of the domains involved in a metonymic mapping acts as a matrix domain for all the subdomains which depend on it. The term ‘matrix’ captures the two crucial ideas of structured dependency and primariness that characterize domain-subdomains relationships. In *The child broke the window*, ‘window’, the matrix domain, maps onto ‘window pane’ (one of its subdomains). In *He gave me a hand*, ‘hand’ maps onto ‘help as if with the hand’, where ‘hand’ is an instrumental notion within the domain of ‘help’; as such, ‘hand’ is a subdomain of the matrix domain ‘help’.

The two kinds of metonymic relationship between a matrix domain and its subdomains have allowed Ruiz de Mendoza (1997, 2000) to make a distinction between source-in-target and target-in-source metonymies. In the former the source is a subdomain of the target, while in the latter it is the target that is a subdomain of the source. The distinction might at first sight seem inconsequential, but it is easy to see that this is not the case once we examine the different cognitive and communicative roles assigned to each of the two choices.

Consider again the target-in-source mapping from ‘window’ to ‘window pane’. The role of this mapping is to bring into focus that part of the matrix domain that is relevant for interpretation. By highlighting this relevant domain we perform a cognitive operation which results in the reduction of the conceptual domain involved in the metonymy. Conceptual reduction by
highlighting is an economical operation for the speaker: it is the addressee’s task to determine the relevant subdomain. The economy of this kind of metonymy is evident from a sentence like *Marlboro has decided to challenge the new anti-smoking campaign*, where it is difficult to pin down the right target with accuracy. Thus, it is completely unnecessary for both speaker and addressee to know who is actually responsible for the policy of Marlboro in relation to the anti-smoking campaign. It is enough to assume that the decision has been made by someone who has the authority or the responsibility to do so. In fact, it would be fairly unnatural, even cumbersome, for the speaker to use a longer description like “the person or persons in charge of dealing with anti-smoking campaigns”. In much the same way, it would be unusual in many contexts to be explicit as to what part of the window has been broken if it is the window pane that we are referring to (cf. *The child broke the window pane*), rather than other parts of a window like the frame (cf. *They even had to break the window frame to make their way into the house*). Note that the pane is the most prominent and breakable part of a window, which makes this element the easiest to access by means of metonymy.

Now think of the mapping from ‘hand’ to ‘help provided as if with the hands’. What we have here is domain expansion, a cognitive mechanism by means of which a subdomain is developed into its corresponding matrix domain. This cognitive operation is the exact reverse of domain reduction. Thus, while domain highlighting reduces the semantic scope of a conceptual representation, domain development gives rise to an expanded conceptual domain. Like reduction operations, domain expansion is economical for the speaker too, but for a different reason. Here the speaker works by providing limited information under the assumption that it will be developed by the hearer into the relevant conceptual representation. It is also economical for the hearer since it is his task to determine the actual scope of the resulting domain in such a way that potentially non-relevant material is left out.

### 4.3. Completion or saturation

Utterances may have incomplete and expanded versions. The context of situation provides us with the conceptual material that is used to expand an utterance into a fully interpretable form. For example, the utterance *John’s not good enough* demands completion in such a way that it is specified what it is that John is not good for (e.g. *John’s not good enough for an*
Completion operations have been studied in the pragmatics literature under different labels. Bach (1994) uses the label ‘completion’, but Sperber and Wilson (1995) deal with this phenomenon as another form of enrichment, while Récanati (1989) favors the label ‘saturation’. Completion is not to be confused with what we have called domain expansion. The former is a grammatical phenomenon: there are some constructions (e.g. be good for, be enough for, be ready for, be ready to, finish + -ing) which can dispense with the prepositional object. If not present in the expression, the prepositional object has to be supplied from the context for the utterance to be interpreted. Domain expansion, on the other hand, is not a constructional problem but a purely conceptual one where part of a domain stands for the whole matrix domain to which it belongs.

4.4. Mitigation

Let us now think of scalar concepts like height or weight. If taken literally, the sentence John is as tall as a mountain describes a factual impossibility. However, in a non-literal interpretation we understand that what is meant is that John is extremely tall, so much so that we feel impressed. John is as tall as a mountain is actually a hyperbolic expression, an exaggeration that is intended to be evident to the addressee. In this respect, it is interesting to note that the semantic impact of this hyperbolic statement is the result of a cognitive mapping from mountains to people. We understand the impressiveness of John’s tallness in terms of the impressiveness of the height of a mountain. However, this mapping is different from most parallel metaphoric mappings. Thus, in John is a lion, where we see a form of human behavior in terms of corresponding animal behavior, it is possible to think of John’s courage as rivaling or at least equaling a lion’s attributed courage. This is not the case in John is as tall as a mountain. A human being and a mountain could not possibly have the same size. There is a clash, which needs to be solved, in the topological structure of the two domains. So, after the mapping operation takes place, it is necessary to carry out a mitigation operation that adapts the scalar notion of height to human standards.

In general, hyperbolic statements require mitigation operations. Thus the predicate in This suitcase weighs tons, as uttered by a person who has to carry the weight, is to be mitigated into ‘a lot’. However, mitigation is not, of itself, enough to understand the meaning implications involved in this sentence. There is a previous mapping from extremely heavy things
(i.e. objects which actually weigh tons) to heavy suitcases (i.e. objects which may weigh a few pounds). In the mapping, we see the physical and psychological effects of the weight of the suitcase on the protagonist (i.e. the person who has to carry its actual weight) in terms of the effects that we believe would be caused by an object which weighs several tons (frustration, anger, impotence, among others).

4.5. Strengthening

Scalar concepts are not only amenable to mitigation but also to the converse operation, which may be called **strengthening** or **reinforcement**. Sperber and Wilson (1995) have already identified this cognitive operation under the label of ‘enrichment’ in the context of Relevance Theory. For them, enrichment is one of the tasks which, together with linguistic decoding operations, allows to derive a form of pragmatic inference called **expli-catures** or explicitly communicated assumptions (see Ruiz de Mendoza 2002; Ruiz de Mendoza and Pérez 2003, for a detailed discussion of the compatibility of this aspect of relevance theory with Cognitive Semantics). Sperber and Wilson discuss truisic and vague expressions like *some time* and *some distance* in sentences like *It will take some time to repair your car, sir* or *The park is some distance from here*. In principle, *some time* and *some distance* may refer to any stretch of time or space. But in some contexts the former will mean ‘a (fairly) long time’ and the latter ‘a (fairly) long distance’. For example, if a person takes his car to be repaired and he is warned that it will take “some time” to do his car, he will have to assume that the repair work will be considerably longer than she expected. For Sperber and Wilson this kind of inference is a development of the blueprint provided by the linguistic expression and it is obtained through enrichment. An enriched representation contains the same information and more than the initial representation. Récanati (1989) uses the label ‘strengthening’ to refer to the same phenomenon.

4.6. Counterfactual operations

Counterfactual sentences have traditionally been considered a subcase of so-called **contrafactive utterances**, i.e. expressions that commit the speaker to the falsity of the proposition or propositions expressed by one or more of its constituent clauses. *Wishes* are the other subcase of contrafactive utter-
Counterfactuals take the form of unreal conditional statements (e.g. *If I had tried harder, she would still be alive*), while wishes are based on the hypothetical conditional form (e.g. *I wish I had tried harder; she would still be alive*). Evidently, whether we have a counterfactual statement or a wish, the conceptual relationship between the propositions expressed is basically the same, so, for the sake of simplicity, we shall discuss these processes by referring to if-conditional counterfactuals.

Fauconnier (1994) sees counterfactuality as a matter of forced incompatibility between the mental space set up by the protasis of the if-conditional expression and the mental space in which this if-conditional is embedded (what he calls the *parent space*). A parent space may be determined linguistically (e.g. “John believes” in *John believes that I really tried hard*) or inferred pragmatically (in a context in which it is evident that the speaker did not try hard enough, this information is the parent space for *I really tried hard*). In the default interpretation of the sentence *If I had tried harder, she would still be alive*, the parent space has the information that the speaker did not try hard enough. The counterfactual space, which describes a situation in which the speaker does try hard, is thus incompatible with its parent space. The second clause (the apodosis) designates a state of affairs that is only possible in the counterfactual space.

Let us now consider the following counterfactual expression, discussed by Fauconnier and Turner (2002: 470) in the context of blending theory:

(1) If Clinton were the Titanic, the iceberg would sink.

The context for this sentence is the time when President Clinton seemed to be surviving political damage from a number of sexual scandals and the film *Titanic* was popular. For Turner and Fauconnier, there is a partial cross-space mapping between two input spaces: one features President Clinton and his scandals; in the other, the purportedly unsinkable Titanic hits an iceberg and sinks. Clinton is the counterpart of the Titanic and the scandals are the counterpart of the iceberg. Then, there is a blended space where Clinton is the Titanic and the scandals are the iceberg. The blend draws part of its structure from the Titanic input space (the source, where there is a voyage by the Titanic which runs into something enormous in the water) and part from the Clinton input space (the target, which provided the blend with its causal and event shape structure). In the blend, the Titanic is unsinkable after all and it is possible for ice to sink. These inferences do not come from the source, where the Titanic does sink, or from the target,
where Clinton merely seems to be surviving the scandals. In the blend, instead, the scandal-iceberg is the greatest conceivable threat and the Clinton-Titanic survives even this kind of threat. This structure is, according to Turner and Fauconnier, constructed in the blend and projected back to the target input to reframe it and give it new and clearer inferences.

The Clinton-Titanic example is an interesting case of counterfactual statement. Counterfactuals are usually equated with conditional statements that have a false antecedent. However, we believe that not all conditionals of this kind have the same status. Thus, the sentence *If I had been born a woman, I’d hate short skirts* is an impossible conditional since I was born a man. But the false situation described in the antecedent is conceivable: people can be born male or female. Or think of Lewis’s (1973) well-known example *If kangaroos had no tails, they would topple over*. We know that kangaroos have tails but it would not be impossible to conceive of a situation in which kangaroos have no tails (think of malformations). These conditionals spring from an implication whose reason we can understand, not from imagining an alternative world. Conditionals of this type contrast with what we may call a *pure counterfactual*, like the Clinton-Titanic example, in two ways:

(i) In a pure counterfactual, the antecedent (*protasis*) is not only impossible but also unconceivable (i.e. Clinton could not possibly be the Titanic); in fact it has a metaphoric element in it, i.e. we are required to map the event of the Titanic hitting the iceberg onto the situation in which Clinton is faced with one scandal after another.

(ii) In a pure counterfactual, the consequent (*apodosis*) describes an impossible situation or event (e.g. sinking ice). This is not necessarily the case in an impossible conditional, where the consequent may be true or not. For example, in *If I had been born a woman, I’d hate short skirts*, we do not know if the speaker would actually have hated skirts had he been born a woman.

It may be observed that there are limiting cases of impossible conditional like *If I had been born a cat, I’d hate cat’s food*, which partially resemble pure counterfactuals. In this example, it would be a matter of controversy whether it is possible or impossible for a person to be born a cat (this will even depend on cultural beliefs like reincarnation). However, this possibility or impossibility is immaterial to the extent that there is no meta-
phoric element in the protasis and the apodosis does not describe something impossible.

Note also that both impossible conditionals and what we call pure counterfactuals convey some sort of speaker’s emotional reaction. But this reaction derives from different sources in each case. In an impossible conditional, it is related to the incompatibility between what is expressed in the protasis and the context in which this information is embedded. In a pure counterfactual, the speaker’s emotional reaction is connected to the incompatibility between the protasis and the apodosis.

Since counterfactuals express impossibilities, it should not be surprising to find that they share a number of relevant properties with hyperbole. Thus, while sometimes hyperbole describes possible – though highly unlikely – states of affairs, it will usually present the hearer with an impossible state of affairs (except in a fictional world). In effect, it is possible to imagine a suitcase that weighs tons. Think of a giant suitcase specially made with the purpose of breaking a record for the Guinness. However, it is impossible to find a man that is literally as tall as a mountain. In both cases, a hyperbole communicates a situation or a state of excess that either bothers or impresses the speaker. Counterfactuals are evident impossibilities intended to create in the hearer basically the same effects. Thus, in the Clinton-Titanic example, the speaker expresses his astonishment at Clinton’s ability to survive an extremely difficult situation. Interestingly enough, the difficult situation itself is seen in terms of an impossible situation (it may be possible to survive a series of consecutive scandals but it would have been impossible for the Titanic to sink the iceberg). The hyperbolic effect is derived from this mapping from impossible to hardly likely. It is because of this mapping that it is possible to consider counterfactuals as extreme cases of hyperbole.

There are also differences. Hyperbole is based upon single scalar concepts (‘weight’, ‘size’, ‘height’, etc.) and counterfactuals upon situations. In fact, counterfactual statements are constructed on the basis of what Ruiz de Mendoza and Otal (2002: 82) have called situational metonymies, where an especially relevant episode within a situational or eventive frame stands for the whole frame. In the Clinton-Titanic example, two situations are accessed metonymically: one in which Clinton is beset by sexual scandals; another in which the Titanic hits an iceberg and sinks, against all predictions, with the result of the horrible loss of much human life.
5. Interaction patterns

Ruiz de Mendoza and Díez (2002) distinguish between interaction based upon metaphor-metonymy combinations and interaction based upon combinations of other models (e.g. propositional structures and image-schemas). In this section, we shall give a brief outline of the different combinations of cognitive models and their motivation. In our view, such combinations place preliminary constraints upon conceptual projection tasks.

One crucial observation made by Ruiz de Mendoza and Díez is that in cases of conceptual interaction between models with different degrees of genericity, the most generic model provides the blueprint for the activation and integration of other less generic models. For example, in such expressions as *She’s in trouble*, *We’re out of trouble now*, and *He went into trouble*, the concept ‘trouble’, which is endowed with a negative axiology, is seen in terms of a CONTAINER image-schema, i.e. as a bounded region in space. Once inside this figurative bounded region the protagonist is affected by the conditions prevailing inside it. If able to get out of it, the container will no longer have any effect on the protagonist (see Peña 2003: chapter 4 for a detailed study of structure and logic of this image-schema). In each of these three examples, the protagonist interacts with the CONTAINER schema by becoming part of its structure and logic.

As Peña (1999a, 1999b, 2003) has studied in detail, some image-schemas are more basic than others that are subsidiary to the former. When a subsidiary schema interacts with a basic schema, the former is built into the structure and logic of the latter. For example, take the expression *We have had our ups and downs*, as uttered by two lovers who find themselves at a point where they feel they have made progress in their relationship in spite of difficulties. The most crucial aspects of the meaning of this expression are accounted for in terms of the interaction between the PATH and VERTICALITY image-schemas. The PATH schema is the embedding schema that accounts for the context specified above. It licenses the activation of the LOVE IS A JOURNEY metaphor (see Lakoff 1993), in which lovers are seen as travelers, the love relationship as the vehicle, difficulties in the relationship as impediments to travel, and the lovers’ common goals as the travelers’ common destination. The VERTICALITY schema associates higher positions with vantage points and is thus endowed with a positive axiological load, whereas lower positions are negative (Krzeszowski 1993). Within the context of the lovers’ figurative journey along a path, the ups and downs map respectively onto good and bad moments in the love relationship. In this sense, the VERTICALITY schema becomes part of the structure.
and logic of the PATH schema: journeys can have good and bad moments just as love relationships.

The principle of interaction we have just presented has an important role to play in the creation of combined spaces. A clear case is our discussion of the sentence *You could see the smoke coming out of his ears* (figure 3 above), where input\textsubscript{y} (the burning substance which gives off smoke and heat) becomes part of input\textsubscript{x} (the container) and not the other way around. Another clear case is provided by the imaginary race between the Northern Light and the Great America. Here we have two levels of integration: one in which the two journeys are combined into one, thus yielding a combined target input; another in which the source input provides the structure (i.e. a ship race) to see the Northern Light and the Great America as competing in the projection space.

Metaphor and metonymy are, in their turn, a fruitful source of interaction possibilities. These have been exhaustively investigated in Ruiz de Mendoza and Díez (2002). Here we provide just a brief overview with minor refinements oriented toward the explanation of their role in conceptual projection tasks. There are four main patterns each of which may have a number of variants or subsidiary patterns: (i) metonymic expansion of (part of) a metaphoric source input; (ii) metonymic reduction of (part of) a metaphoric source input; (iii) metonymic expansion of (part of) a metaphoric target input; (iv) metonymic reduction of (part of) a metaphoric target input. These patterns are represented in figures 5 to 8 below.

![Figure 5. Metonymic expansion of a metaphoric source](image)

*Figure 5. Metonymic expansion of a metaphoric source*

![Figure 6. Metonymic reduction of a metaphoric source](image)

*Figure 6. Metonymic reduction of a metaphoric source*
In order to illustrate the first possibility, i.e. metonymic expansion of the metaphoric source in terms of the combined input hypothesis, let us discuss the expression *beat one’s breast*. Goossens (1990) has aptly studied this and similar body-part expressions (e.g. *speak with one’s tongue in one's cheek, be closed-lipped*) as cases of metaphor derived from metonymy. In Goossen’s view, the metonymic basis of *beat one’s breast* (‘make an open show of sorrow that may be partly pretence’) is the religious practice of beating one’s breast when one confesses one’s sins publicly. However, rather than a metaphor with a metonymic basis, what we have is an expansion operation of the source domain of a metaphor. What is said (i.e. that someone hit his breast repeatedly) provides a point of access to a broader concept (i.e. the scene in which breast beating is performed with the purpose of showing publicly that one is sorrowful about one’s mistakes). The broader concept then maps onto particular situations that have common structure. Consider in this regard the semantic implications of the sentence *He held a press conference to publicly beat his breast about his marital infidelity* in a context in which a politician wants to show repentance for his immorality in order to avert negative electoral consequences. There is no actual breast-beating, only public confession, but carried out in such a way that it is not believed to be genuine. For this interpretation to take place, it is necessary to develop the source input metonymically in such a way that we have in it not only the action of a sinner beating his breast, but also the stereotypical knowledge associated with this action, i.e. that it is carried out
as a way of showing genuineness and of moving God to mercy. The target in turn integrates the politician’s observable actions with knowledge about infidelity and its consequences in connection with the context (where we have the expected public opinion reaction). The elements of the expanded source input correlate with the combined target input in which we have a politician acting out his feelings in public in order to show true repentance and move his voters to forgiveness. From this correlation arises the idea that the politician pretends his sorrow in an attempt to appease his voters and avoid some kind of electoral punishment. This information is received by the projection space (see figure 9).

Figure 9. He beat his breast about his marital infidelity
The second interaction pattern, metonymic reduction of a metaphoric source, is illustrated by the sentence She’s my heart and my soul, where the speaker’s heart and soul stand metonymically for a subdomain of them, i.e. the deep emotions they figuratively contain. It is these emotions that get metaphorically mapped onto the protagonist who is thus envisaged as the main source of such emotions for the speaker. The projection space thus receives the implications worked out by correlating the source and target input spaces.

By way of illustration of the third interaction pattern, i.e. metonymic expansion of a metaphoric target, consider the expression The singer was given a big hand after her performance. At one stage ‘give a big hand’ is a metaphor whose target domain contains a metonymy: ‘(big) hand’ stands for ‘(loud) applause’ or ‘(loud/enthusiastic) clapping of the hands’ (i.e. the instrument stands for the action) in the metaphor ‘give applause’ where an action is envisaged as a transfer of possession (see Lakoff 1993 for an account of this kind of metaphor). At another stage, there is a metonymy in which part of an event (i.e. clapping hands) stands for the whole event (i.e. the audience clap their hands after the performance to express enjoyment or appreciation). Note that the fact that the idea of enjoyment is part of the explicated meaning of ‘give a big hand’ is evident from the incongruity of the following adaptation of the utterance under analysis:

(2) ??The singer was given a big hand after the show because nobody really liked her performance.

Finally, the fourth interaction pattern, metonymic reduction of a metaphoric target, is illustrated by the sentence He finally won her heart. In it we have a metaphor from the domain of competition or contest – which involves prize winning after beating the opponents – onto the domain of courtship – which involves taking control of the loved one’s emotions by persuasion and other related strategies, and often defeating other potential lovers. In this metaphor, the target has a built-in metonymy from ‘heart’ (the lover’s ‘prize’) to ‘love’.

What metonymy has in common in all the above examples is the fact that it is part of the architecture of the metaphor and not the other way around. As Ruiz de Mendoza and Diez (2002) have pointed out, this may be related to the very peculiar nature of metonymy as a domain-internal mapping in contrast to metaphor, which is domain external. However, there is at least one additional reason in that metonymy allows us either to expand or reduce the amount of conceptual material that is brought to bear
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upon processing. Thus, metonymy has a supporting role for metaphor either by allowing the interpreter to develop a domain for all the correspondences of a mapping to take place adequately (through domain expansion) or by directing the interpreter’s attention to the most significant part of a domain (through domain reduction). There is no comparable role for metaphor with respect to metonymy.

Furthermore, the two cognitive functions of metonymy are paralleled by corresponding communicative functions. From the point of view of cognition, metonymies based on domain expansion are an economical way of providing access to as much conceptual material as is necessary by just invoking a significant part of the domain which contains all that material; on the other hand, metonymies based on reduction work by providing global access to a domain of which the addressee is to choose a relevant part. Note in this connection that in the first kind of metonymy access is not global, i.e. on the basis of part of a domain, the addressee has to single out the number and type of conceptual ingredients that will eventually be activated. From the point of view of the communicative impact of both cognitive mechanisms, domain expansion is a way of providing the hearer with a rich amount of conceptual implications for very little processing effort. The hearer is responsible for the number of implications that will be derived, generally not more than needed for satisfactory interpretation in context. In conceptual interaction, this allows the hearer to develop a domain to the extent that it is ready for all necessary metaphoric correspondences to be made, as in the first stage of interpretation of ‘give a big hand’, or for the full range of relevant implications worked out, as in the second stage of the same metaphor. Domain reduction, on the other hand, usually bases its communicative import on the relationship between the activation of a conceptual domain as a whole and the highlighting of one of its parts. Thus, in *He finally won her heart*, invoking the heart as the object of the lover’s goals conveys the idea that it is not simply love feelings but also the most central part of a person’s emotions that is at issue.

6. Meaning implications

As has already been noted above, the full meaning impact of a linguistic expression based on conceptual correlation and integration is to be calculated on the basis of the total range of meaning implications which the hearer is led to derive. Consider again the complex metaphor *You could see the smoke coming out of his ears*. Working out the meaning of this expres-
sion involves much more than simply seeing a certain angry person in terms of a container with burning contents. For example, smoke serves as a figurative indicator of internal combustion because of extreme heat. Real combustion generates consumption of energy and materials. In a similar fashion, figurative combustion of a person involves the person being eventually deprived of energy and vitality. That is why we can say that a person is being “consumed” with anger. This is just one out of several potential meaning implications of *You could see the smoke coming out of his ears*. There are at least two other such implications:

- The person has lost control of his anger (i.e. the figurative fire has gone unchecked until the moment of the utterance being produced).
- The person is potentially harmful for other people (in the same way that uncontrolled fire is dangerous).

These implications are independent of the context but need to be compatible with it.

There is an important connection between this analysis and the notion of explicature, which we have briefly introduced in section 4.5 above. Explicatures, or explicitly communicated assumptions, are to be distinguished from implicated assumptions or *implicatures*. For Sperber and Wilson (1995), a proposition is explicated rather than implicated if it is a development of the blueprint provided by the linguistic expression. Implicated propositions, on the other hand, are the result of a premise-conclusion calculation where the set of premises is exclusively derived from the context (including our world knowledge) without the help of any indicators within the linguistic expression. According to the relevance-theoretic framework, in the utterance *The park is some distance from here*, the expression *some distance* may be developed into ‘quite a long distance’ by means of an explicature-generating mechanism called *strengthening*. The same utterance can be used to warn the hearer that it will take him longer that he thought to arrive at the park, or perhaps that it would not be wise to walk to the park. These are just two out of a broad range of potential implicatures that will vary with the context of the utterance.

For Ruiz de Mendoza (2002) and Ruiz de Mendoza and Pérez (2003), it is possible to derive explicatures on the basis of conceptual mappings. Thus, from an expression like *You don’t know where you’re going*, we obtain the explicated proposition ‘The addressee has no clear goals’ on the basis of the metaphoric mapping *GOALS ARE DESTINATIONS*. Possible implicatures would be, depending on the context, the idea that the addressee is in trouble, that the addressee is being warned about his way of doing things, that the speaker is complaining about the addressee, etc. In a similar
way, a metonymy like *The sax has the flu*, where by “the sax” we refer to “the sax player” (INSTRUMENT FOR PLAYER), may be regarded as a way of developing the central explicature of the expression.

We may wonder about the stage of the conceptual projection process at which explicatures and implicatures occur. Ruiz de Mendoza (2002) has suggested that implicatures are a matter of the blend. This suggestion is in keeping with Turner and Fauconnier’s view of the blend as a dynamic space where inferential activity takes place and with the notion of ‘implicature’ as involving the activation of supplementary contextual information. The need to use such information would call for the creation of additional input spaces to be projected into the blend. Consequently, for Ruiz de Mendoza (2002), explicatures, which are simply adaptations of the conceptual material initially provided by the linguistic expression, would fall outside the blend. There are two problems with this proposal. One is that it ignores the fact that explicature derivation, as conceived by Sperber and Wilson, is a form of inferential activity too. The other is that, as we have argued above, the blend is constructed on the basis of previous mental operations, including conceptual projection. Meaning implications are worked out before projection takes place. Thus, in our own proposal, both explicated and implicated meaning is worked out before being received by the projection space, where it is integrated with other relevant elements in terms of their inherent combinability.

The picture we are trying to draw is more complex than it seems at first sight for two reasons. First, the derivation of implicatures requires the previous development of fully specified propositions (i.e. explicatures) that satisfy the requirements of relevance in the context of the utterance. Thus, before we use an utterance containing the expression *some distance* as a piece of advice or as a warning (an implicature), it is necessary to make ‘some distance’ compatible with the context in which it is produced: it may be just one or two miles, or perhaps much more (an explicature). In a similar way, before one can interpret the metaphor *You could see smoke coming out of his ears* as, say, a warning to beware of the protagonist in certain situations (this is implicated meaning), it is necessary to understand that the speaker is talking about a situation in which the protagonist is extremely angry, to such an extent that he may lose control and be potentially harmful (this is explicated meaning). Second, as has been discussed in Ruiz de Mendoza (in press) in some detail, implicature-derivation is in fact a metonymy-based cognitive operation of domain expansion. This idea is not new at all. It is found, for example, in Lakoff (1987: 78–79). Consider the following brief exchange:
(3)

A: How did you get to the airport?
B: I waved down a taxi.

For Lakoff, underlying B’s response in this example there is a metonymy whereby part of a scripted sequence of events (a scenario) stands for the whole sequence. The scenario includes having access to a vehicle, getting into it and starting it up, driving it to a destination, parking the vehicle, getting out, and being at the destination. The activation of the whole scenario by invoking part of it allows us to make inferences that are relevant for the purpose of the exchange. Inferential pragmaticists, like Sperber and Wilson, would argue that B’s response is interpretable on the basis of an implicit premise-conclusion calculation like the following:

Implicit premises:

People wave their hands at taxis in order to stop them and have access to them.
A person will have access to a taxi in order to hire a ride to a destination.

Explicated assumption:
Speaker B waved his hands at a taxi.

Implicated conclusion:
Therefore, speaker B stopped a taxi and hired a ride to the airport.

It is evident that each of the elements of this premise-conclusion reasoning pattern is part of the taking-a-taxi scenario and that there is a domain expansion operation whereby the explicated assumption affords access to the implicit premises thus facilitating the derivation of the implicated conclusion. It may also be evident that not all of the elements of the scenario may be used to trigger the reasoning pattern. Thus, sentences like I talked sports with the taxi driver or I said goodbye to the taxi driver could hardly be relevant ways of leading the addressee to the conclusion that speaker B took a taxi to the airport. This is due to the fact that these sentences make use of very peripheral elements of the scenario. Finally, we note that the reasoning pattern is based on matching the underspecified information in the context in which speakers A and B participate with the information in the scenario. The context has speaker B waving his hands at a taxi and speaker B getting to the airport. The scenario has the information specified above about how people make use of taxis in order to get to their intended destinations. All the information items that do not match are con-
sidered implicit information (or premises in a relevance-theoretic account), which is used to calculate the conclusion. The whole process takes the form depicted in figure 10 below.

![Figure 10. Implicature-derivation process for 'wave down a taxi'](#)

7. Conclusion

The analysis of the various cases of metaphor-metonymy interaction carried out in the previous section, although limited, is enough to understand that conceptual interaction tasks are more complex than recognized in the emergent structure hypothesis, but at the same time more clearly regulated by cognitive mechanisms such as domain expansion and domain reduction.
Giving an adequate explanation of how such mechanisms work endows conceptual projection theory with a large degree of parsimony. Note that emergent structure theorists need to postulate the existence of a dynamic blend which levels out inconsistencies simply because they believe that the blend only incorporates structure which has been correlated in a careful way. In our own hypothesis, Turner and Fauconnier’s blend is replaced by a projection space, which is different from other mental spaces, like input spaces, in that it does not supply information but receives and combines it. It resembles the other spaces, however, in that it is not a dynamic construct. What is dynamic in conceptual interaction is the different cognitive mechanisms and operations at work between the different spaces involved: on the one hand, we have metaphoric and metonymic mappings (i.e. forms of correlation), the latter bringing about expansion or reduction operations; on the other hand, we have a projection operation which exports structure to the projection space.

Notes

1. This chapter is a revised version of Ruiz de Mendoza and Peña (2002). We are grateful to the editors of Jezikoslovje for granting us permission to include this paper in the present book. We are also thankful to René Dirven and Klaus-Uwe Panther for their comments on a previous version of this chapter. Of course, all errors and shortcomings are strictly our own responsibility. Financial support for the research on which this chapter is based has been partially provided by the DGI, Spanish Ministry of Education and Science, grant no. HUM2004-05947-C02-01/FILO (co-financed through FEDER) funds and by the Comunidad Autónoma de Madrid, grant no. 06/HSE/0132/2004.

2. In fact, there is one further metaphor at work in this expression, i.e. IMPORTANT IS BIG (see Lakoff and Johnson 1999: 50). This metaphor allows us to conceptualize the intensity of the noise made by the audience clapping their hands (in the domain of action) in terms of the physical size of the object given (in the domain of transfer of possession). However, in being subsidiary to ACTIONS ARE TRANSFERS in the way specified, BIG IS IMPORTANT plays only a local role within the general derivation process through conceptual mappings and does not call for a third stage in the explicature generation task.
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Section 4
A discourse-oriented Cognitive Linguistics
Basic Discourse Acts: towards a psychological theory of discourse segmentation

Gerard Steen

1. Introduction

This chapter will propose, develop, and discuss a simple idea, that there is such a thing as a basic discourse act. I propose that the typical basic discourse act consists of an illocutionary act, a proposition, a clause, and an intonation unit. In writing, the intonation unit has to be replaced by an equivalent, the punctuation unit. Basic discourse acts may be thought of as utterances in the full behavioral sense of the term, that is, as verbal acts requiring production and comprehension in speech or writing. However, since utterances is too closely associated either with pragmatics as opposed to discourse analysis, or, within discourse analysis, with conversation analysis as opposed to text analysis, it is preferable to coin a more neutral term.

Basic discourse acts may be typical and exhibit the four properties of illocution, proposition, clause, and intonation/punctuation unit, or they may be less typical. Consider the following short dialogue, taken from a novel by Julian Barnes and slightly edited for our purposes. A father and his daughter, Alice, come out of a film which the father thinks was supposed to have contained a scene shot at the school of the daughter:

(1) 1 F: Was that it?
D: Was that what?
F: Was that the school in that shot?
D: What school?
5 F: Your school, of course.
D: What makes you think it was my school?
F: I thought that was why we went to the film, Alice: because you wanted to see your school.
D: No.
F: Haven’t all your friends been going to see it this week?

Barnes (1992: 32)
If we take the notion of a typical basic discourse act as valid, turns 1 and 2 are typical, while turns 4 and 5 as well as 8 and 10 are less typical. The units in the other turns have more subtle properties that may make them more or less typical, such as the embedded clauses and propositions in turn 6. Moreover, turn 7 may be considered as a case where we may have to do with two instead of one basic discourse acts. It will be a major concern of this chapter to discuss some of the ways in which basic discourse acts may display varying properties and how these may be evaluated.

Whether basic discourse acts are typical or less typical, they should always be described with reference to the four dimensions represented by illocutionary acts, propositions, clauses, and intonation or punctuation units. The four dimensions have other values, too, as may be illustrated with reference to for instance the two turns consisting of the simple ‘no’. These basic discourse acts do have the values of illocutionary act as well as intonation or punctuation unit, but they do not exhibit a clause or a proposition. The nature of the dimensions and their values as well as their interrelationships will be another important topic for this chapter. The dimensions will be referred to as the communicative, conceptual, linguistic, and material dimensions of discourse.

Basic discourse acts are the basic units of discourse conceptualized from a discourse-psychological point of view. In language production and comprehension, people engage in a multi-dimensional activity. Concepts require words and constructions for their formulation, words in constructions require sounds or written signs for their material realization, and the combination of concepts, words, and sounds or written signs functions as an important instrument for performing a communicative act directed at some addressee. This is true for text and for talk, as is conveniently shown by the above written rendering of a dialogue in fiction.

Basic units of discourse are an important tool for language users when they have to break continuous text and talk up into equivalent segments for cognitive processing. It is the major function of basic discourse acts to make it easier for addressees to reconstruct during the on-going event of listening, reading, or interacting what the sender is saying, implicating and doing. This requires that basic discourse acts be studied in terms of their internal structure as well as their links to each other in encompassing discourse structures.

There are various proposals in the literature that have a similar aim and have similar properties. However, space forbids going into extensive theoretical comparison and discussion. What I will do instead is single out one proposal as a constant point of reference for the purpose of this volume,
which is Langacker’s (2001) paper on discourse in Cognitive Grammar. But as far as I can see, none of the other proposals that I know of is entirely identical with what I am proposing here. When it is relevant and possible, I will indicate additional points for comparison and contrast.

2. Discourse in Cognitive Grammar

In Langacker’s (2001) paper on the relation between discourse and Cognitive Grammar, there are a number of suggestions that Langacker has also intuited the theoretical need for a basic discourse unit. In a crucial section on attentional framing, Langacker refers to Chafe’s (1994) work on intonation units and their correspondence to single clauses, and then explains his own belief that “this represents a very natural mapping, especially in the case of finite clauses, which incorporate grounding and thus indicate how the speaker and hearer view the profiled process in relation to their own circumstances. It makes sense that such an assessment should tend to coincide with a single window of attention” (Langacker 2001: 154). In a later section, Langacker (2001: 174) writes: “Recall that a clause is the typical unit chosen for a single window of attention symbolized by an intonation group”.

In the next section, Langacker (2001: 163) turns to the function of such units for discourse processing: “As discourse unfolds, the expressions successively encountered serve to update the CDS [=Current Discourse Space, GS]. When attentional frames correspond to clauses, major updating of the CDS proceeds on a clause-by-clause basis”. In a later section, which is completely devoted to discourse as structure building, Langacker (2001: 171) foregrounds the conceptual side of the discourse units required to build a discourse structure: “The basic units of structure building are relationships rather than things. This reflects the fact that connected discourse normally comprises a series of clauses (each profiling a relationship). Only in very special circumstances does a coherent discourse consist in a series of nominal expressions” [Emphasis in original, GS]. This approach highlights the conceptual dimension of clauses, and is related to a later discussion of a simple illustrative discourse, where Langacker (2001: 174) says that “we can take each clause as providing a single conceptual “chunk” employed for updating purposes”.

Langacker’s suggestions are completely compatible with my view of basic discourse units. They broadly highlight the associations between three of the four values that I take as typical for basic discourse units: into-
nation units, clauses, and relationships. At the same time, in emphasizing that these are associations, they also suggest that other values and configurations are possible for basic discourse units.

There are two refinements that I wish to add to Langacker’s comments. First, intonation units require an equivalent category for written language use, for which I will use the term punctuation units (Hannay and Kroon 2005). And secondly, relationship is a semantic term in Cognitive Linguistics which, when used in discourse-analytical contexts, may be ambiguous between predications and predicates, or between propositions and functions. Since my view of the conceptual level of relations, entities, and so on is discourse-psychological (e.g. Bovair and Kieras 1985; Kintsch 1998), I prefer to use the term proposition where Langacker utilizes relationship, but nothing should depend on this terminological alteration. In psychological studies of discourse, propositions are minimal idea units typically realized by a number of concepts indicating a relation between two or more entities, or an attribute of one entity.

There are two further issues of a more fundamental nature. They concern Langacker’s relative neglect of my fourth typical value of discourse units, namely illocutionary acts, and the resulting deep difference between Langacker’s (2001) bipolar model of the utterance on the one hand and my own proposal of a discourse unit as displaying four dimensions on the other. Both issues can be discussed with reference to a short but crucial quotation from Langacker’s article:

A usage event is an action carried out by the speaker and hearer. The speaker (S) acts in an initiative capacity, the hearer (H) being responsive; but whether their role is active or reactive, each has to deal with both a conceptualization and a vocalization, the two basic “poles” of an utterance. The speaker’s and hearer’s action involves the directing and focusing of attention (→). In successful communication, they manage to coordinate this action and focus attention on the same conceived entity. Of course, we can only conceive of so much at any given time. We have limited visual field, taking in only so much of the world at any given instant. Analogously, we have a limited “conceptual field”, delimiting how much we can conceptualize or hold in mind at any given instant. Metaphorically, it is as if we are “looking at” the world through a window, or viewing frame. The immediate scope of our conception at any one moment is limited to what appears in this frame, and the focus of attention – what an expression profiles (i.e. designates) – is included in that scope. (Langacker 2001: 144–145)
From my point of view, Langacker assigns too restricted a function to
discourse units, as merely serving to update the conceptualization of what
is being talked about. In discourse-psychological terms, Langacker con-
centrates on the role of discourse units for updating situation models (or
event models, see Van Dijk 1999: 125), at the expense of their simultane-
ous function for updating context models (Van Dijk 1999; Van Dijk and
Kintsch 1983). This is where my communicative dimension and its typical
value of the illocutionary act comes in.

To rephrase my view in the terms Langacker uses in the above quota-
tion, in successful communication, people do not only manage to coordi-
nate their action and focus attention on the same conceived entity, but they
also manage to coordinate their interaction and focus attention on what the
other language user wants them to do in conceptualizing that entity. For
instance, when Langacker (2001: 174–177) analyzes an extremely simple
short narrative text, he treats the consecutive clauses of the text as instruc-
tions to build a sequentially organized conceptual structure. However, he
does not include within his representation the communicative aspect that
these discourse units are meant to be accepted as so many truthful asser-
tions, with implicit temporal and causal interrelations (e.g. Mann and
Thompson 1988, 1992). Moreover, these assertions are intended to contrib-
ute to an overall coherent message with a divertive or informative or per-
suasive function that is part of a specific genre of discourse, such as a con-
versation (e.g. Steen 1999, 2003). Even though Langacker’s analysis is
compatible with this type of discourse analysis, it leaves out an important
dimension of the role of discourse units in the psychology of communica-
tion, namely their communicative role, which in typical cases is manifested
by an illocutionary act.

That Langacker’s approach is compatible with discourse analysis as I
see it is suggested by one example in a section on augmented linguistic
units. When dealing with the conventional use of declaratives as assertive
speech acts, Langacker (2001: 166) writes: “It is only when a finite clause
is embedded in a larger interactive frame – involving the speaker’s intent to
portray the proposition as true and offer it for the hearer’s assessment – that
producing it constitutes an assertion”. The point of the present approach is
that language use never takes place outside such a larger interactive frame,
and that its role should be systematically accounted for in the description of
discourse units. This should not only take place in those cases where pat-
terns of pragmatic inference have become entrenched to produce aug-
mented linguistic units, for instance to the effect that declaratives can con-
ventionally be taken as assertive acts. It should happen for all usage events.
Language use is not just a matter of coordinating between language users with respect to conceptual structure but also with respect to social interaction.

The discourse-psychological model that is closest to my own approach is Clark (1996, 2002). The relation with Langacker may be easy to grasp from the following quotation:

Using language is a joint activity. Like waltzing, playing a duet, or shaking hands, it requires people to coordinate their individual actions in order to succeed (Clark, 1996). Suppose Ann is speaking to Ben. They have to coordinate their actions at at least these four levels:

**Level 1:** Ben must be attending to Ann’s voice precisely as she is vocalizing.

**Level 2:** Ben must be trying to identify the expressions that Ann is presenting while she is presenting them.

**Level 3:** Ben must be trying to understand what Ann means when she speaks.

**Level 4:** Ben must be considering the joint project she is proposing with her utterance as she is proposing them.

(Clark 2002: 6)

Clark’s level 4 is what I call the communicative dimension, and the quotation supports my argument why it is an inevitable factor in the analysis of basic discourse units. Clark’s level 1 is related to the performance, phonetic side of Langacker’s dimension of vocalization. Levels 2 and 3 make a distinction between what I call the linguistic and the conceptual dimensions, in that level 2 deals with the lexico-grammatical expressions that need to be identified by speaker and hearer, while level 3 deals with their role in the more encompassing conceptual structure of the discourse. In a well-established psychological model of speaking (Levelt 1989, 1999), these are also different levels because they are part of the different tasks of formulation (level 2) and conceptualization (level 3). Langacker’s bi-polar model of the utterance as consisting of a vocalization and a conceptualization conflates levels 2 and 3 into one.

In fact, however, Langacker seems to leave room for a similar distinction between levels 2 and 3, although he does not really develop it. In the
quotation from pages 144–145 above, he writes that the focus of attention is what an expression profiles (by means of its lexico-grammatical elements), and he adds that this focus is included in the frame of attention (which by implication is a wider conceptual structure). This seems perfectly fine to a discourse psychologist, but it also suggests that we are dealing with two distinct dimensions of analysis.

To illustrate what may be at stake, consider the following line from a poem by Alfred, Lord Tennyson (see Steen 2002):

(2) Now sleeps the crimson petal, now the white.

On my approach, this line contains two discourse units. The first is made up of an illocutionary act, a proposition, a clause, and a punctuation unit. The second also consists of an illocutionary act, a proposition, and a punctuation unit, but it does not have a clause. The linguistic expression profiles only two components in the forms of phrases, ‘now’ and ‘the white’, of a more complex conceptual frame, which may be informally represented by the proposition NOW SLEEPS THE WHITE PETAL. This explanation raises many questions about the notions of clauses and propositions as well as about their analysis and technical representation, but these cannot be addressed here. Instead the example may suffice to indicate why it is useful to make a distinction between the linguistic and the conceptual dimension, and why it is interesting to examine the relationship between clauses and propositions (or relationships, in Langacker’s terms). As is shown by (2), not every relationship or proposition is expressed by a full-blown clause.

The resulting four-dimensional model of discourse units is fundamentally at odds with Langacker’s bipolar approach. It adds the dimension of communication, represented by coordinated verbal actions, and splits up Langacker’s dimension of conceptualization into a dimension of language, manifested by lexico-grammatical forms, and a dimension of non-linguistic conceptualization, manifested by conceptual structures. The latter may be superficially analyzed by means of propositions, but this does not exhaust the conceptual dimension.

As noted above, my model corresponds with other multi-dimensional approaches in discourse psychology, such as Clark (1996) and Levelt (1989). Langacker’s (2001) own source of inspiration, Wallace Chafe, also makes a distinction between more dimensions of discourse. Chafe (2001: 679) adopts a conceptual starting point, suggests that language users then have a verbalization and an interaction task, and that this is often reflected by ‘the language people produce’ — which is an allusion to the material
dimension manifested by intonation units. These references and others that will follow below may serve to indicate that my proposal is not totally original and not unfounded either.

At the same time, though, these references also suggest that there are too many issues in the modeling of basic discourse units for extensive analysis and discussion at this moment of the deeper reasons of these discrepancies between Cognitive Grammar and discourse analysis; this will have to be left aside for another occasion. The main reason, however, which I think is responsible for the discrepancy lies in Langacker’s attempt to apply his bipolar semiotic approach of linguistic expressions as signs to the description of utterances as discourse units. In my opinion, this attempt cannot be successful because discourse units involve the employment of linguistic signs as a means for performing acts in verbal communication. Moreover, these signs are manifested in a relatively independent dimension of material realization and have effects on a relatively independent dimension of conceptualization. This means that there are other considerations which have to be included in the description of discourse units that just the two poles postulated for signs.

3. The four dimensions and their values

Before we can engage with basic discourse units themselves, it will be useful to establish first that the four dimensions are independent of each other. This is another hidden theme in Langacker’s discussion of the relation between Cognitive Grammar and discourse, and it is worth our while to make it explicit. The point of the next paragraphs, therefore, is to show that, even though there may be associations between the four dimensions, this is not necessarily the case, and that in principle the dimensions and their values are autonomous planes of analysis. Note that this is as might be expected, given the fundamentally different functions of the four dimensions in the psychological approach to the production and comprehension of discourse units.

The basic assumption of my approach is that each of the four dimensions has a particular value for typical basic discourse units, and that this accords with the suggestions made in Langacker’s discussion. We have seen that Langacker holds that, for conceptualization, the typical basic discourse unit exhibits a relationship (or, in our terms, proposition). This is opposed in particular to things (or, in our terms, single concepts designating entities). For vocalization, the typical basic discourse unit manifests a sub-
stantive intonation unit, as opposed to regulatory intonation units. For formulation, the typical basic discourse unit has the value of the clause, as opposed to other groupings of phrases, or the phrase by itself. And communication is the dimension of basic discourse units that Langacker does not discuss as a separate dimension. However, he has used the relation between declaratives and assertive illocutions as an example of what he calls a ‘linguistic unit’ that is based in interaction. The typical basic discourse unit may therefore be assumed to exhibit a combination of all four of these values: it is typically a proposition (or relationship) expressed as a clause, vocalized as one substantive intonation unit, and functioning as one illocutionary act.

Despite their association in typical discourse units, these values and the dimensions they represent are independent of each other. In briefly illustrating how this may be the case, I will follow Langacker’s strategy as well as examples when he discusses some of the possible relations between propositions (instead of relationships), intonation units, and clauses, and add illocutions to complete the picture. At the same time, other categories than the ones occurring in typical basic discourse units will also be illustrated, which may help to clarify the nature of the dimensions themselves. I will assume, for the purposes of this chapter, that illocutionary acts, propositions, clauses, and intonation units are the most salient values for each of the dimensions, as opposed to the other categories which will be taken to be less salient.

That propositions are independent from intonation units is illustrated by Langacker’s following example:

(3) On the desk, he noticed an important-looking document.

One proposition is vocalized in two intonation units. Vice versa, one proposition may also end up as only one part of an intonation unit, as is illustrated by the contrast between Langacker’s examples (4a) and (4b):

(4) a. If she said it, then it’s true.
   b. If she said it then it’s true.

By the same token, propositions do not necessarily have to coincide with illocutionary acts, either: propositions that are embedded in constructions like (4b), for instance, function as components of illocutions, not as illocutions themselves. And finally propositions do not necessarily have to coincide with clauses either. One way in which this may be the case has been
illustrated above, by the line from Tennyson, where we saw a complete proposition in the text base being expressed by only two phrases in the language. Depending on whether these definitions of proposition and clause versus phrase are accepted, this would be one example of the independence between propositions and clauses.

When we take intonation units as our point of departure, the following picture emerges. That intonation units are not necessarily co-extensive with propositions is illustrated by a short text analyzed by Langacker (2001: 178):

(5) a. My two children are very different.
   b. Alice is most impressive.
   c. She’s clearly extremely smart.
   d. She’s also energetic.
   e. Now Bill, he’s more ordinary.
   f. He’s not terribly active.
   g. He is however quite personable.

The first part of unit (3e) exemplifies an intonation unit that does not vocalize a proposition, whereas units (3a-d) do. Unit (3e) may also be used to illustrate that intonation units are not necessarily co-extensive with clauses (the linguistic dimension) nor with illocutions (the communicative dimension). Vice versa, it is also possible to have two propositions and two clauses within one intonation unit, as we have seen in (4b).

When we start out from the perspective of the clause, a comparable situation is found. First of all, clauses are not necessarily identical with intonation units, as has been illustrated by (3), (4b), and (5e). Embedded clauses, as in (6b) and (6c), also from Langacker (2001), manifest the same lack of coincidence with intonation units:

(6) a. Conceivably, Harold has finished his thesis.
   b. It’s not the case that Harold has finished his thesis.
   c. Jenny suspects that Harold has finished his thesis.
   d. Harold has finished his thesis. And I was just elected pope.

Clauses are not co-extensive with illocutions, either, as may be seen from the same embedded clauses above.

Finally, clauses could also be independent from propositions. This could happen if propositions were defined at the restricted level of atomic propositions, consisting of the obligatory elements of a clause pattern only (Kintsch 1998). In such a framework, clauses containing more material than the atomic proposition, such as adverbials of optional circumstances,
would require more than one proposition to account for the structure of the clause. Clauses would then not be equivalent to propositions. An approach like this could be eminently suitable to the study of the difference between spoken and written discourse: it might well be the case that spoken discourse exhibits far more typical basic discourse units with one atomic proposition, while written discourse exhibits far more typical basic discourse units with one proposition that is less restrictively defined.

Turning to illocutions it is clear that these do not have to be co-extensive with one proposition (see 4b). Nor do they have to be vocalized by just one intonation unit (see 3, 5e, and 6a). And illocutions do not have to be co-extensive with clauses either (see 6b and 6c and turns 4, 5, 8 and 10 from the dialogue).

The conclusion is that the salient values of each of the four dimensions of discourse units are relatively independent of each other. Although we have only examined some random ways in which divergence may occur, it is clear that associations between propositions, intonation or punctuation units, clauses, and illocutions are not inevitable. Indeed, associations between groups of different values of the four dimensions may be typical of different types of discourse. As a result of the general independence of the various values, it may also be concluded that the dimensions themselves are relatively independent.

The discussion focused on examples from Langacker, who used punctuation devices such as commas and full stops to indicate phonological units. In doing so, Langacker tacitly pretends that the situation need not be dramatically different for writing. We shall make the same pretence for the time being, although it has to be pointed out that the notion of a punctuation unit seems to be less well researched than its phonological equivalent of the intonation unit (but cf. Hannay and Kroon 2005). We shall briefly return to the difference between speech and writing later.

4. Typical basic discourse units

In line with the above considerations, I propose that the typical basic discourse unit is defined by the configuration of the following values:

- The conceptual dimension has the value of a proposition
- The material dimension has the value of an intonation or punctuation unit
- The linguistic dimension has the value of a clause
- The communicative dimension has the value of an illocutionary act
How such typical basic discourse units are distributed across various classes of discourse and how they are used for which purposes in comparison with less typical basic discourse units is an unanswered question. Examples of typical basic discourse acts from the article by Langacker (2001) are repeated in italics below:

(3) On the desk, he noticed an important-looking document.
(4) a. If she said it, then it’s true.
   b. If she said it then it’s true.
(5) a. My two children are very different.
   b. Alice is most impressive.
   c. She’s clearly extremely smart.
   d. She’s also energetic.
   e. Now Bill, he’s more ordinary.
   f. He’s not terribly active.
   g. He is however quite personable.
(6) a. Conceivably, Harold has finished his thesis.
   b. It’s not the case that Harold has finished his thesis.
   c. Jenny suspects that Harold has finished his thesis.
   d. Harold has finished his thesis. And I was just elected pope.

It should be noted that, according to this approach, (4a) and (6d) exemplify a sequence of two typical basic discourse acts each.

There is one important line of empirical research which has examined the nature of discourse and its units in a way that is highly relevant to the present discussion. Spoken discourse analysts Ford and Thompson (1996) and Ford, Fox and Thompson (1996, 2002) have also discussed basic units of discourse in terms of a configuration of the clause, the intonation unit, and what they call the sequential act. Although they do not discuss the ‘typical’ basic discourse unit, they do find that structural closure at what they call the levels of syntax, phonology, and pragmatics is often achieved by clauses, intonation units, and sequential acts. When one moment exhibits simultaneous structural closure at all dimensions, this produces a ‘Complex Transition Relevance Place’, and this is often exploited by language users to change turns. In other words, converging structural closure at more dimensions yields a unit of discourse that language users orient themselves to in turn-management during conversation. This does not entail that all of these units have only one proposition, intonation unit, clause, and illocution. However, the examples and discussion in Ford, Fox, and Thompson (1996, 2002) and Ford and Thompson (1996) do suggest that it is highly
likely that these categories play a major role in the structure of these units. If a proposition, an intonation unit, a clause, and an illocution are all used to achieve closure at their respective dimensions at the same time, this is a powerful signaling device to the addressee that a discourse act has been completed and that there may be a chance for the addressee to take over.

Sandra Thompson’s previous work on written discourse, with William Mann in Rhetorical Structure Theory (e.g. Mann and Thompson 1988, 1992), also refers to basic discourse units. These used to be called minimal text spans and are now called Elementary Discourse Units or EDUs in the most recent tagging manual (Carlson and Marcu 2001). Their basic conceptualization takes place in terms of relatively independent clauses. The manual explicates (Carlson and Marcu 2001: 3) that the definition of the clause is based on lexical and syntactic clues, which is in complete agreement with what I have proposed for the linguistic dimension of lexico-grammar. Moreover, the manual accords to punctuation an important role of its own. This may be interpreted as the written manifestation of Langacker’s vocalization, which I have partly re-labeled as the material dimension above. Since the approach adopts a functional definition of the clause, it has an in-built semantic and pragmatic component, so that there are no separate conceptual and communicative dimensions in the manual. However, the conceptual and communicative nature of the EDUs may be revealed with reference to the assignment of coherence relations to sets of EDUs, which is the core business of Rhetorical Structure Theory. For instance, some coherence relations, such as CAUSE-RESULT, CIRCUMSTANCE, or ELABORATION-ADDITIONAL, depend on an exploitation of the conceptual properties of the units, that is, the representation of the state of affairs (typically a relation) that is depicted by their proposition. By comparison, other sets of discourse units display coherence relations, such as CONCESSION or EVIDENCE, that depend on an exploitation of their communicative dimension, for instance the intention of the writer to persuade the reader, which requires a particular type of illocution. Further discussion of these properties of discourse units is offered by Sanders, Spooren, and Noordman (1992, 1993).

Again, just as with the spoken discourse studies discussed above, these observations do not mean that all of these discourse units are typical in the sense employed here. However, it is true that these elementary discourse units may be studied with reference to their use of clauses, punctuation units, propositions, and illocutions, in order to describe the distribution of their various configurations, including the one regarded as typical. This is
another discourse-analytical approach which invokes different combinations of the various values of the four dimensions.

Both approaches provide indications that analysts may have oriented themselves to something like the typical basic discourse unit and variations on that theme. Both approaches also utilize multi-dimensional models for description, but they do not explicate the relations in the same way as I am proposing here. Moreover, the terminology is different and more traditionally linguistic. Thus, in spoken discourse analysis, Ford, Fox, and Thompson (1996) and Ford and Thompson (1996) make a distinction between pragmatics, syntax and intonation, which may be seen as equivalent to or at least part of the communicative, linguistic, and material dimensions. Even though they mention meaning as one important factor in how language users project the end of a turn unit, they do not consider conceptualization as separate dimension in these publications. That this is not an oversight or a matter of principle may be seen from Ford, Fox, and Thompson (2002), which shifts the model to semantics, syntax, and prosody (see Ono and Thompson 1996). These publications together offer empirical support for the present approach; at the same time, they signal the difficulties of modeling and terminology involved in shifting the perspective from functional (and cognitive) linguistics to discourse analysis.

5. Less typical basic discourse units: two salient values

Let us now consider what less typical basic discourse units might look like. The first variation that can be imagined concerns the occurrence, within a single basic discourse unit, of more than one salient value at any one of the four dimensions. Thus, (3) and (6a) exemplify basic discourse units that have one proposition, one clause, and one illocution, but two independent (substantive) intonation units.

(3) On the desk, he found an important-looking document.
(6a) Conceivably, Harold has finished his thesis.

By implication, both ‘On the desk’ and ‘he found an important-looking document’ as well as ‘Conceivably’ and ‘Harold has finished his thesis’ do not function as basic discourse units themselves. Instead, they are parts of basic discourse units. They are non-basic discourse units. They do not have the same weight or function as the complete discourse unit that they are part of.
It is true that these parts are separate units at one dimension of discourse, in this case the material dimension. This may even mean that they have a role of their own to play in updating the current discourse space. This is the basic point that Langacker is making in his paper. From that perspective, both (3) and (6a) consist of two units.

However, the fact that they are independent intonation units does not automatically turn them into separate basic discourse units as intended here. For that, some similar degree of independence at one or more of the other dimensions is required. It is the central question implicated by this chapter how that degree can be determined and whether any agreement can be reached about a threshold level. And it is the central assumption of this chapter that a mono-dimensional approach to basic discourse units, for instance via the material dimension, cannot capture the full complexity of their function, since that involves at least four distinct dimensions which are not always correlated in a one-to-one fashion.

A basic discourse unit may also be less typical but still regarded as basic if it has more than one independent clause or more than independent proposition. This may be illustrated by Langacker’s example (4b):

(4) If she said it then it’s true.

If (4b) is taken as one whole, then the analysis takes the whole sentence as one unit and thereby interprets the conditional as a semantically restrictive element that cannot be omitted without changing the meaning of the discourse unit. Instead, it is presupposed. The conceptualization hence involves a complex proposition where one projected situation (‘it is true’) is viewed in relation with another (‘she said it’). This complex proposition can be presented for acceptance in one illocutionary act (the salient value of the communicative dimension) and one intonation unit (the salient value of the material dimension).

Again, as with the discussion of intonation units above, a mono-dimensional approach to basic discourse units might not be able to capture this analysis. For instance, if basic discourse units are defined with reference to clauses, as happens in Rhetorical Structure Theory, some analysts might be tempted to divide (2) into two units, related to each other by the coherence relation of CONDITION. Such an approach would observe two units because of the overriding importance assigned to the linguistic dimension of lexico-grammatical structure (two clauses). However, when the conceptual and communicative dimensions are taken into consideration, the discourse unity of (2) as one whole becomes clear. All four dimensions
have to be taken into account to arrive at an analysis of basic discourse units as opposed to units at the various distinct levels of discourse organization.

The last variation on the theme of less typical basic discourse units concerns the question whether it is possible to have a basic discourse unit that contains more than one independent illocution. Intuitively, performing more than one speech act seems to involve more than one basic discourse unit. As far as I can see, Langacker does not discuss any example that has a bearing on this issue. But Ford and Thompson (1996) exemplify a number of interactional discourse units in conversation that could be analyzed as involving more than one illocution, as in (7):

(7)  
K: It was like the other day/ uh.  
(0.2)  
Vera (.) was talking/ on the phone/ to her mom/>?
C: Mm hm/>?
K: And uh she got off the phone/ and she was incredibly upset/>?
Mm hm/>?
(Ford and Thompson 1996: 151)

The punctuation devices of the full stop and the question mark indicate completion of intonation units, and the slashes indicate potential completion of lexico-grammatical units. Most important, the greater-than sign (>) indicates pragmatic completion points, and this has a bearing on the communication dimension. Ford and Thompson (1996) make a distinction between two levels of pragmatic completion of a discourse unit, local and global, and it is the former that comes closest to correlating with the boundaries of illocutionary acts.

If we follow Ford and Thompson and take the entire first turn as one basic discourse unit, the question arises whether it displays one or two illocutionary acts. As may be seen from (7), the first turn of K contains two intonation units, two clauses, and two propositions, separated by a pause of 0.2 seconds. If we interpret the first clause and proposition as displaying a coherence relation of CIRCUMSTANCE with the second clause, as in Rhetorical Structure Theory (Mann and Thompson 1988, 1992), we are treating it as a basic discourse unit. If that is accepted, then it should also receive a communicative value, and this may evidently be argued to be some form of presentative illocution. In that case, Ford and Thompson’s discourse unit would illustrate a basic discourse unit with two illocutions.
However, by the same argument, it does not only illustrate a discourse unit with two illocutions, but also with two propositions, two clauses, and probably two intonation units. In other words, the first turn may also be analyzed as consisting of two typical basic discourse units which combine to produce one higher-level discourse unit, the latter functioning as another whole in the sequential action structure. In that case, the first turn of (5) does not illustrate a less typical basic discourse unit with two illocutions, but two typical basic discourse units in one higher-order discourse unit, the turn.

If discourse units are only measured with reference to the dimension of turn-taking, which is not quite equivalent with the communicative dimension as I conceive of it, then the first turn of (7), almost by definition, is one unit, because it is one turn. However, since turns can consist of more than one act, it is still possible to see two basic discourse acts in the one sequential discourse unit called turn. Here is another illustration of the complexities of the interactions between the four dimensions of discourse units, this time with reference to yet another dimension, sequencing in conversation.

We have considered one variation on the theme of less typical basic discourse units. It turns out that basic discourse units can have more salient units than one at three of the four dimensions: they can have more than one intonation unit, more than one clause, and more than one proposition. However, it is less easy to imagine that basic discourse units display more than one illocutionary act. Simply put, more illocutionary acts means more basic discourse units. For instance, it is between the illocutionary acts of basic discourse units, or between their associated conceptual content typically presenting propositions, that coherence relations are usually said to obtain. Illocutionary acts seem to provide a special indication for the identification of the boundaries of basic discourse units. But we shall come back to this issue in the next pages.

6. Less typical basic discourse units: zero salient values

A second variation on the theme of less typical basic discourse units involves turning into the opposite direction, and examining whether basic discourse units can also have zero typical values for one or more of their dimensions. Langacker (2001: 171) does not pay much attention to this issue, except for the reference to the allegedly ‘very special circumstances’
in which an entity can be conceptual unit for discourse building. Therefore we have to turn to some other examples.

A basic discourse act that does not contain a clause may be exemplified by phrases of affirmation or denial, as in the two ‘No’ turns in our conversation (1) from Julian Barnes above. The same holds for phrases of greeting, such as ‘Hello’ or ‘Goodbye’. Biber et al. (1999: 1069–1072) have a whole section on such non-clausal units in conversation. These examples simultaneously illustrate that basic discourse units do not have to formulate a complete proposition (or relation). In both cases, another value than the most salient one is the category used for the dimension in question.

The third possibility concerns basic discourse units without an intonation unit. This is the case when language users interact non-verbally, for instance by means of nodding or pointing. Such gestures can count as complete basic discourse units, with illocutionary value, even though they do not have vocalization. For that matter, they do not exhibit lexicogrammatical expression either, and the nature of their conceptualization may vary with the degree of conventionalization of the gesture. This would also provide a convenient approach to such phenomena as backchannels, which may be seen as a halfway house between nonverbal and verbal vocalization.

The fourth possibility is the absence of illocutions in basic discourse units, and this is more interesting. I will use the research by Ford, Fox, and Thompson (2002) on turn increments to illustrate what may be at stake. I will concentrate on one class of turn increments, called Extension increments, illustrated by (8), which is a turn by Gary in an ongoing conversation:

(8) Well he took Bill (Silvio), a good friend of mine, he weighs about two hundred n s::(0.5) two hundred (fifty)-five pounds I think he weighs. Took him for a ride on that’n Bill said that he was at least goin’ eighty miles an hour. With the ^ two of ’em on it.

Ford et al. analyze the Extension increment, presented in bold here, as due to a lack of recipiency on the part of Gary’s interlocutors in the conversation at the end of the previous possibly complete turn unit, ‘that he was at least goin’ eighty miles an hour’, which is supported by an analysis of gaze. For that reason, Gary adds an Extension in order to offer another possible completion for his story.
In general, Ford et al. draw the following three conclusions regarding Extension increments:

- They occur in the environment of lack of uptake at a transition-relevance place.
- They provide a second transition-relevance place, at which the recipient could display recipiency.
- Rather than doing a new action, they continue the action of the extended turn, often by further specifying when, where, or with whom the event being related took place. (Ford, Fox, and Thompson 2002: 25)

The crucial issue here is the third conclusion, ‘Rather than doing a new action’. I take this to refer to doing a new illocutionary act, although other interpretations may be possible. If Ford et al.’s conclusion is accepted, then Extension increments should not be seen as separate basic discourse acts but as parts of the previous turn unit (or basic discourse unit) precisely because they can be interpreted as not performing a new illocutionary act, but as continuing the previous one. This is mainly motivated by the fact that Extension units have a grammatical form ‘that could have occurred as constituents, as integral parts, of clauses’; in other words, because Extension increments are not independent clauses but can be incorporated in preceding independent clauses, they are not taken as independent acts either. As the authors write, ‘Through this grammatical and interactional practice, speakers display that what they are doing with the Extension is not to be heard as “starting something new” but rather as a continuation of what they had just been saying’.

However, here is another interpretation. This is to take the first conclusion about Extension increments seriously too. Lack of uptake after a possibly complete turn unit suggests that the turn unit had been offered as a basic discourse unit, but that for some reason or other it was not accepted as such by interlocutors. Even though the producer of the original turn unit may then decide to continue speaking and to use a grammatical structure which conceals the unexpected lack of rapport by posing as a continuation of the previous turn unit, this does not mean that the speaker does not ‘do a new action’. And even if the new action may simply be ‘further specifying when, where, or with whom the event being related took place’, this does not mean that it cannot be taken as an independent discourse unit. It may be seen as a form of elaboration, which also happens by means of independent discourse units. I would therefore be inclined to regard Extension turn increments, too, as basic discourse units.
The question arises, now, whether this interpretation of Extension increments also pushes us into the direction of postulating an illocutionary force for such Extension increments, or whether this goes too far. I believe that the above example can be interpreted in two ways. It can be seen as a new illocutionary act that simply elaborates with a less salient form that can be explained with reference to the interactional context. Clearly, this is not the way in which Ford et al. have interpreted it, for this would contradict their third conclusion. Instead, they have analyzed it as another type of communicative act, and called it extension or continuation or specification. But this raises the question of a taxonomy for communicative acts and its theoretical basis, which is precisely the reason why we are looking at this example. Such a taxonomy has been the subject of such variegated and convoluted discussion in pragmatics, conversation analysis, and discourse analysis, however, that it extends beyond the scope of this chapter. It may therefore be concluded that the situation is unclear for less typical basic discourse units when it comes to deciding about the possibility for zero illocutionary acts.

Basic discourse units may have less typical manifestations in two ways. They may have more than salient value at one or more dimensions. Alternatively, basic discourse units may have zero typical values for one or more of its dimensions. However, the communicative dimension seems to be special, in that a basic discourse unit with two or zero illocutionary acts seems rather hard to conceive. As a result, basic discourse units may always have only one illocutionary act, whereas they may vary regarding the number of salient categories for the other dimensions. When they do not have a salient value on one of the other dimensions, that is, when they do not have a proposition or a clause or an intonation unit, they have to exhibit a less salient value for those dimensions, such as a concept, a phrase, or a gesture.

7. Non-basic discourse units

There are two variations on the theme of non-basic discourse units. First, it appears that all of the salient values discussed above – propositions, intonation units, clauses, and illocutions – may be able to function independently or dependently. I have focused on their independent use, showing how that use may be conducive to assigning basic discourse unit status to the stretch of language they occur in. However, this observation now has to
be qualified by focusing on the distinction between independent and dependent use of salient categories for each of the dimensions.

If propositions, intonation units, clauses, and illocutions function dependently of other categories at their dimension, then their presence does not indicate that they are co-extensive with basic discourse units. This was the argument for the analysis of (3) and (5e) above, where ‘On the desk’ and ‘Now Bill’ were taken as some sort of discourse unit, because they are intonation units. However, they are not basic discourse units, for their status in the discourse regarding some if not all of the dimensions is not independent but dependent upon the function of the encompassing complete units (3) and (5e), respectively. This may be further clarified with reference to the other salient categories.

Propositions can function as dependent propositions when they are embedded in more encompassing propositions. This is the case with examples (6b-c), repeated for convenience:

\[(6)\]

b. It’s not the case that Harold has finished his thesis.

c. Jenny suspects that Harold has finished his thesis.

The proposition ‘that Harold has finished his thesis’ does not function as a basic discourse unit, even though it may be taken as a separate discourse unit of a lower order at the conceptual dimension. It is a non-basic discourse unit. Examples (4b-c) may also be used for illustrating the same difference between the independent and dependent use of clauses.

An example of an embedded illocutionary act may be imagined by means of expressions like ‘we regret/are delighted to inform you that …’ If we take the encoding of such units seriously, there might be two illocutionary acts going on at the same time. However, it seems to me that the basic discourse unit as a whole and its illocution in particular are concerned with the communicative act of informing, while the expression of positive or negative attitude functions as a politeness device. I do not think that there are two illocutionary acts involved here, which further confirms the special status of illocutions.

Note that this entails that communicative independence and dependence do not necessarily align with linguistic or lexico-grammatical dependence. In terms of linguistic structure, the dependency is reversed, for the expression of attitude occupies the independent position. This is not accidental but may be more systematic, as can be pointed out with reference to the same situation for the relation between conceptual and linguistic dependency, as discussed by Verhagen (2001).
The mere presence of salient categories for each of the four dimensions, then, does not necessarily point to basic discourse unit status. When salient categories are used independently, they may provide such indication. But when they are used dependently of more encompassing units at their own dimension, they cannot be taken as signals for basic discourse units. Instead, in such cases they function as non-basic discourse units.

The second variation on the theme of non-basic discourse units takes us away from the salient categories highlighted so far, and turns to the other possible values for each of the dimensions. If salient categories may be used as parts of basic discourse units, as we have just seen, this is even more typically the role for non-salient categories. Thus, non-basic discourse units for the conceptual dimension are all possible components of propositions, such as concepts designating relations, entities, and attributes. And non-basic discourse units for the vocalization dimension are all possible components of intonation units, such as pausal segments and so on. Non-basic discourse units of the lexico-grammatical dimension are constituents of clauses, which, apart from dependent clauses, are phrases. And finally, non-basic discourse units at the level of communication are all componential acts of illocutions, such as many of the secondary and complementary acts distinguished by Stenström (1994).

Non-basic discourse units are parts of basic discourse units. They are typically realized by non-salient categories for each of the four dimensions. However, they may also be realized by salient categories, provided that these are used in a dependent fashion. And finally, in some cases, even independently used salient categories may still function as parts of basic discourse units, as is the case, for instance, for such substantial intonation units as ‘On the desk’ and ‘Conceivably’ in (1) and (4a). These observations merely point out the need for further modeling and explication in order to clarify the conditions under which we can decide whether a unit is basic or not.

8. Identifying basic discourse units

I have described basic discourse units as four-dimensional wholes with varying properties. The best way in to describing this variation is by taking the salient value for each of the four dimensions as a starting point, and examining how these values may be used and combined with the values of the other dimensions. This has led to the postulation of a category of typical basic discourse units which exhibit a configuration of one and only one
salient value at each of the dimensions. It is the typical illustration of language use, consisting of one proposition, one clause, one intonation or punctuation unit, and one illocution.

Typical basic discourse units may be contrasted with less typical basic discourse units by either adding or removing salient values (propositions, intonation or punctuation units, and clauses, illocutions) from their structure. I have shown that it is possible to have more than one salient value within a basic discourse unit for each of the four dimensions, except for the communicative one. Similarly, I have shown how it is possible to have a lack of a salient value at each of the four dimensions, with the possible exception of the communicative dimension again.

Pending research on the latter issue, deciding about the status of a discourse unit as basic or non-basic therefore seems to involve two questions:
1. Can the unit be analyzed as having an illocutionary act?
2. What is the ‘weight’ of the values of the other dimensions in making the decision with regard to the first issue?

If a unit has salient values at all three other dimensions, it is probably easier to come up with an illocutionary act for that unit than if it has non-salient values for all three other dimensions. In this light it will be interesting to study the nature of the basic discourse units identified in RST and other approaches until now, in order to acquire a sense of the distribution of the properties of the units regarding the four dimensions distinguished here.

One of the assumptions that plays an important role in making these decisions has not been discussed yet. It is the requirement explained in Rhetorical Structure Theory that segmenting a stretch of discourse should follow the criteria of complete coverage as well as lack of overlap between units (Mann and Thompson 1988). In other words, discourse cannot be analyzed into sets of basic and non-basic discourse units at the same level: all units will eventually have to be accorded the status of basic discourse unit. This entails that all ‘difficult’ data will have to be organized around clearly identifiable basic discourse units, either as their parts or as independent basic discourse units whose difficult status requires further explanation. Turn increments form one such difficult case.

Let me spell out one interesting consequence of this approach. In conversation, many utterances are incomplete because of hesitation, false start, or interruption (cf. Biber et al. 1999: 1052–1066). However, these utterances can be described as such precisely because they are not complete basic discourse units, with a determinate value suggesting closure at each of their dimensions. This approach would even allow for cases where an illocution has not been performed. Yet, all of these cases, because they
appear in between clearly definable basic discourse units, are basic discourse units themselves too, albeit defective ones. They have a special status in the data. Their appearance may be more typical of spontaneous spoken interaction, but bad writing or writing in progress may include many of them as well. The analysis of defective basic units, however, does not need to present insuperable problems of principle. And their inclusion of cases without illocutionary acts presents an interesting issue for evaluating my own theoretical proposals.

Defective and complete basic discourse units occur in different ways in different modalities. They are the verbal product of discourse behavior by one language user who has a more or less clearly delineated interactive design upon one or more other language users. I have taken this interactive dimension seriously by defining the dimensions of basic discourse units with reference to an intuitive task analysis of verbal interaction from a psychological angle. I would now like to close this chapter by a brief discussion of the psychological function of basic discourse units.

9. Functions of basic discourse units

This chapter has offered a sketch of the typical and less typical properties of basic discourse units, and illustrated how basic discourse units may be distinguished from non-basic discourse units. This was done along the lines of four dimensions of language use: the conceptual, linguistic, material and communicative dimensions. These four dimensions enable a task-oriented ordering of the field of research when discourse is approached from a psychological angle. In order to interact and communicate with other people, individuals have to conceptualize their thoughts, formulate them into lexico-grammatical structures, and turn them into material signs in sounds or writing. But what is the more specific psychological function of basic discourse units in discourse production and comprehension?

My basic claim here is that basic discourse units are the discursive manifestations of individual acts. They are typically verbal acts by people who are coordinating their behavior with other people while they are engaged in a more or less conventionalized genre of communication. They require individual sub-acts of production in terms of conceptualizing, formulating, vocalizing, and communicating. Such acts can take a great deal of effort and can often go wrong in one or more ways. Basic discourse units also require individual sub-acts of reception or comprehension in terms of all four dimensions of basic discourse units. These are acts of pro-
duction intended as (multidimensional) instructions to update a (multidimensional) Current Discourse Space, as we have seen above; the corresponding acts of reception or comprehension provide evidence that they are generally taken as such by language users. That is why I propose to see basic discourse units as Basic Discourse Acts.

In conversation, Basic Discourse Acts may turn out to be the crucial unit that language users orient themselves to in projecting the completion of Turn Constructional Units. We have seen that Ford and Thompson (1996) have demonstrated that speaker change correlates with what they call Complex Transition Relevance Places. These are points of coincidence between the completion of phonological, syntactic, semantic, and pragmatic units, units that may be usefully compared with the salient and less salient units of Basic Discourse Acts. However, both in Ford and Thompson (1996) as well as in Ford, Fox and Thompson (2002), the pragmatic unit of a turn may be too broad to capture some of the intricacies of the coordinated illocutionary acts between the participants in the conversation. Basic Discourse Acts (or BDAs) and their conversational equivalent of the turn unit may present a finer-grained alternative that addresses the same phenomena in a psychologically interesting fashion.

Conversation provides a dramatic illustration of the role of Basic Discourse Acts, especially when language users monitor their own behavior in the framework of the discourse genre they are participating in. However, the same fundamental processes are observable in discourse that is not reciprocal and spoken, but unilateral and written, such as the production and reception of text. I believe that BDAs are just as essential for writing, because they help both writer and reader to manage their intentional, attentional, imaginative, and memory resources. Various work in cognitive science has contributed to the developing view of text of this kind, such as Gibbs (1999) on intentions, Fauconnier (1997) on mental spaces, Van Dijk and Kintsch (1983) and others on mental models, and so on (see Britton and Graesser 1996; Van Oostendorp and Goldman 1999). To give one concrete example, my own work on metaphor recognition in reading shows that more metaphorically used words inside one BDA may increase their recognizability as metaphorical (Steen, 2004). And anyone who has taught rhetoric or composition knows what it means to train students in order to increase their proficiency in producing optimal Basic Discourse Acts for the purpose of easier reading, clearer argumentation, and so on.

Talk and writing seem to be somewhat apart when it comes to our experience of their act-like status (e.g., Chafe 1994; Clark 1996). It seems easier for talk to conceive of it as a series of acts than to do the same for text. But
writing also involves acting upon an addressee, albeit at some remove. This has been the working assumption of Rhetorical Structure Theory as a functionalist approach to the analysis of text organization, and it has had a good deal of success. It is also precisely why good writing has to be taught, often by increasing the writer’s ability to imagine the reconstruction of the BDAs by the intended addressee. Basic Discourse Acts that might cause infelicitous reconstruction by the addressee at any of the dimensions of communication, conceptualization, formulation, and material expression can be foreseen and prevented by such an act of the imagination. This is the written equivalent of the phenomenon in talk that may be described as the interactive on-line co-construction of utterances between the sender and the addressee (Goodwin 1995).

However, despite these correspondences, it is also true that the results of the two production processes are somewhat apart. Biber (1988, 1995) has shown that variation between speech and writing may be largely due to a factor in language production called ‘involved, online versus informational production’. This has been developed into a list of eight characteristics in Biber et al. (1999). Therefore the question arises whether we should treat talk and text as two varieties of discourse that have sufficient overlap, or whether they are too far apart and constitute such different media that they need their own approaches (see Halliday 1989, 1994). For Basic Discourse Acts, this means that the question arises whether the single model proposed in the present chapter needs to be deconstructed and changed into a written and a spoken version. I regard this as an empirical question which has to be decided with reference to large-scale corpus research and its statistical analysis.

In general, however, language users may always be in search of Complex Transition Relevance Points and their equivalents in writing in order to manage their discourse processing at a number of parameters, including intention, imagination, and attention. Indeed, closure at the dimension of communication by means of an illocution is important for the management of intentions; closure at the level of conceptualization by means of proposition is important for management of imagination; and closure at level of lexico-grammar and sound or writing, by means of a clause plus an intonation or punctuation unit, is important for management of attention. I speculate that optimal CTRPs consist of closure at four dimensions, ideally by means of the most salient category that is available for each of them. And that wrap-up processes during reading typically occur at similarly defined units in text. But these are ideas that need much more theoretical and empirical research.
Basic discourse units are Basic Discourse Acts. They are multidimensional wholes which consist of subacts at the four dimensions of conceptualization, formulation, materialization, and communication. This configuration of subacts counts as one complete discourse act intended to be recognized as such by other language users in one coordinated action of language use. Whether such Basic Discourse Acts are fundamentally different between speech and writing remains an open question.

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Verhagen, Arie
The multilevel operation of metonymy in grammar and discourse, with particular attention to metonymic chains

Antonio Barcelona

1. Introduction

This chapter is devoted to the presentation and a partial discussion of the results of a series of case studies concerned with the multilevel operation of metonymy in grammar and discourse. These studies have dealt with authentic texts and have been carried out at intermittent periods over the past two years.

The discussion will concentrate on three results of these studies:

– The realization of the regular co-occurrence of several metonymies at the same or different analytical levels in the same utterance, even in the same sentence.
– The primacy of the inferential role of metonymy.
– The frequent chaining of metonymies in the same utterance or text.

But before engaging in the presentation and discussion of these results, two brief notes on my notion of metonymy and on the ubiquity of metonymy are necessary.

2. Metonymy

The standard cognitive linguistic notion of metonymy presents a number of problems (referentiality as a necessary requirement for metonymy, “stand-for” relationship, mapping, distinction from metaphor, degrees of metonymicity, strength of mapping, contingency, implicitness of target, etc.). It would take a long talk to discuss each of them in detail (see Barcelona 2003a).

The term ‘metonymy’ is used in Cognitive Linguistics to cover very different phenomena, including “classical” or “prototypical” examples of linguistic referential metonymies for individuals, “clear” or “typical” in-
stances of referential metonymies with non-individuals as targets, “clear” or “typical” non-referential metonymies, and relatively “peripheral” instances of metonymy. My notion of metonymy is a broad notion capable of capturing what all of these different phenomena have in common. I call this the schematic notion of metonymy, which contains the necessary and sufficient conditions for metonymicity: “A metonymy is a mapping of a cognitive domain, the source, onto another domain, the target. Source and target are in the same functional domain and are linked by a pragmatic function, so that the target is mentally activated” (Barcelona 2002a: 246).

Metonymies are claimed to be “mappings” because the source domain is connected to the target domain by imposing a perspective on it. Another fundamental property of metonymy is that the source maps onto and activates the target in virtue of the experiential (hence pragmatic) link between the roles each of them performs in the same “functional domain” (i.e. a “frame”, in Fillmore’s terms, or an “ICM”, in Lakoff’s terms). This is why Fauconnier (1997: 11) regards metonymy as a “pragmatic function mapping”.

In Barcelona (2003a), a set of additional specific definitions are proposed for the other general kinds of metonymy represented by each of the various different phenomena (“purely schematic”, “typical”, “prototypical”) which are covered by the above schematic definition. Some examples of the range of such phenomena are (1), (2), (3), (4) and (5):

(1) This book weighs two kilograms.
(2) This book is highly instructive.
(3) Belgrade did not sign the Paris agreement.
(4) She’s just a pretty face. (Lakoff and Johnson 1980: 37)
(5) He walked with drooping shoulders. He had lost his wife.

In example (1), the whole domain BOOK can be argued to be mapped onto its sub-domain PHYSICAL OBJECT, which is thus mentally activated. In (2), the whole domain BOOK is mapped onto its sub-domain SEMANTIC CONTENT, which is thus mentally activated. Examples (1) and (2) would be “peripheral” or “purely schematic” instances of metonymy, whose target is a primary or near primary domain (in Langacker’s terms; see Langacker 1987: ch. 4) in the source.

Example (3) is an instance of what I call “prototypical” metonymy, as it is referential and as it has an individual (the Yugoslavian government) as target. Prototypical metonymies represent the “classical” instances of metonymy, and, as such, they constitute the model for the whole category of
metonymies. Examples (4) and (5) are instances of what I call “typical” metonymies as they are not referential; furthermore, the target in (5) is not an individual, but a property (an emotional state). The status of typical and prototypical metonymies is not controversial, because the target remains neatly distinct from the source, that is, it is either not included in the source (example 5) or it is a secondary domain in it (as in FACE FOR PERSON, example 4).

Purely schematic, typical and prototypical metonymies constitute a continuum of metonymicity. Purely schematic metonymies are contextual semantic values occurring in the “literal” use of expressions, which points to the artificiality of a strict literal-figurative distinction. For details, see Barcelona (2003a).

As we can see from these examples, metonymy would be, under the above definition, a very common, in fact omnipresent, phenomenon in most linguistic expressions. This broad conception of metonymy is, in fact, not exceptional in Cognitive Linguistics. A similar conception underlies, for instance, Langacker’s notion of “active zone” metonymies (Langacker 1993, 1999). The “purely schematic” metonymies in (1) and (2) are “active zone” metonymies in which the “active zone” of the notion BOOK is different in each case.

Now (and this is an important point I would like to emphasize) I am aware that the metonymic status of (1) and (2) may be controversial with some scholars. Therefore, I have not taken into account phenomena like (1) or (2) in the case studies on metonymy reported on in this chapter. Only “typical” and “prototypical” conceptual metonymies have been included in the analysis. The reason is that the purpose of those studies is to show that, even under an uncontroversial, relatively constrained notion of conceptual metonymy, metonymy is ubiquitous and has a tendency to chain to other metonymies.

3. Ubiquity

I can only offer here a brief glimpse of this issue. For more detailed surveys of the ubiquity of metonymy, see Barcelona (2002b), Burkhardt (1996), Gibbs (1994: ch. 7), or Radden (2005).

Metonymy has been shown to be a fundamental, ubiquitous phenomenon motivating the emergence and extension, and/or guiding, the actual use and comprehension of:
Numerous cognitive structures, including numerous prototypes (Lakoff 1987), metaphors (Barcelona 2000; Goossens 1990; Goossens et al. 1995; Radden 2000, 2002; Rudzka-Ostyn 1995).


Numerous grammatical phenomena and constructions, among them “raising” (Langacker 1995), noun-verb conversion (Dirven 1999), proper noun-common noun conversion (Barcelona 2003b, 2004), dynamic use of stative predicates (Panther and Thornburg 2000), conceptual anaphor (Langacker 1999: ch. 7; Ruiz de Mendoza 2000), etc. Excellent surveys of the operation of metonymy in grammar are Ruiz de Mendoza and Pérez (2001), Ruiz de Mendoza and Otal (2002), and from his own perspective, Langacker (in press).

A large number of grammaticalization phenomena (Heine, Claudi, and Hünnemeyer 1991; Hopper and Traugott 1993; Traugott and Dasher 2002).


The internal links in certain phonological categories (Barcelona 2002b; Nathan 1996).

4. Metonymies co-occurring at one or more analytical levels in the same sentence or in the same utterance

We now arrive at one of the main topics of the chapter, as announced in the introduction, namely, the finding that two, often more, metonymies regularly occur at the same or different analytical levels in the same utterance, even in the same sentence. Before showing and commenting on the results of my corpus investigation, a few words on the functions of metonymy are necessary.

4.1. The inferential, motivational and referential functions of metonymy

Metonymy is a fundamental conceptual mechanism guiding pragmatic inferencing. As Panther and Thornburg (1998) and Thornburg and Panther
(1997) have claimed, metonymies are “natural inference schemata”. In my view, conceptual metonymies often provide “ready-made” pointers towards plausible inferential pathways in the interpretation of all sorts of discourse, particularly in the derivation of conversational implicatures (see Barcelona 2003c). These pointers, which are normally automatic, contribute greatly to the ease and speed of interpretation.

Metonymy has this inferential role because of its ability to mentally activate the implicit pre-existing connection of a certain element of knowledge or experience to another.

The referential function of metonymies is thus a useful (hence extremely frequent) consequence of their inference-guiding role, since what we do when we understand a referential metonymy is to infer the referential intentions of others (Nerlich and Clarke 2001). Of course, the output of this inferencing activity may become completely routinized (and lexicalized), so that the referent of a metonymic noun phrase or of a metonymic nominal construction may, in the right context, be automatically accessible to the interpreter without any cognitive effort. When this metonymy-guided referential meaning is lexicalized and becomes an established sense of a grammatical construction (typically a lexeme) this metonymy may be said to be also “motivational”.

The motivational role of metonymy is also, therefore, a side effect of its inference-guiding role. A metonymy has a motivational role when it crucially guides the development of a constructional meaning or form, whose entrenchment (Langacker 1987) then leads it to acquire unit status (Langacker 1987), that is, to be used in largely automatic fashion.

We will see examples of these functions in the rest of the chapter.

The analysis of the data gathered in the case studies clearly shows that metonymy regularly occurs at several levels of meaning – and also very often of form – of the same utterance, in any of its functions, or in a combination of them.

4.2. Corpus and analytical levels

I gathered a small corpus for these studies, consisting of the following texts:
- A brief constructed conversation, whose acceptability was confirmed by a native speaker. Hence it can regarded as an “authentic” text.
- A joke, attributed to W.C. Fields and borrowed from Attardo (1990).
The initial sentence of a long narrative-descriptive text, downloaded at random from the web.
- A long dialogue, again chosen at random (consisting of the final paragraph of the opening stage directions and the first scene of Act I of Eugene O’Neill’s play *Long Day’s Journey into Night*).

The texts are presented in the final Appendix. They should be checked constantly when reading the analyses of parts of them which are presented a few paragraphs below.

The occurrence of metonymy in any of its three major roles was investigated on the following *analytical levels*:

A) Meaning

*Constructional meaning:*
- Prototypical conventional meaning of a grammatical construction
- Non-prototypical conventional meaning of a grammatical construction
- Implicit or inferred non-conventional meaning of a grammatical construction

*Utterance meaning:*
- Implicit utterance and text meaning (overall pragmatic inferences)

B) Form

*Constructional form:*
- Prototypical conventional form of a grammatical construction
- Non-prototypical conventional form of a grammatical construction

The role of metonymy in constructional meaning and form was investigated, in turn, at each of the traditional ranks of the grammatical hierarchy, i.e. morpheme, lexeme, phrase, clause, sentence (yet bearing in mind the well-known difficulties inherent in a neat distinction of grammatical levels).

4.3. Main patterns of co-occurrence observed

These are displayed in the following table:
Table 1. Multilevel co-occurrence of metonymy in four text samples

<table>
<thead>
<tr>
<th>FUNCTION OF THE METONYMIES</th>
<th>Case Study A (Brief conversation)</th>
<th>Case Study B (Joke)</th>
<th>Case Study C (Initial sentence of long narrative)</th>
<th>Case Study D (Rest of long narrative)</th>
<th>Case Study E (Long Day’s Journey into Night, Scene 1)</th>
<th>A+B+C+D+E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motivating conventional meaning or form of a construction</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MEANING</td>
<td>Prototypical meaning</td>
<td>1 (lexeme)</td>
<td></td>
<td>3 (lexeme) (all chained) 1 (phrase) (1 r.f.)</td>
<td>4 (lexeme) (2 chained) 1 (phrase)</td>
<td>1 (morphone) 13 (lexeme) (3 chained) 1 (phrase)</td>
</tr>
<tr>
<td></td>
<td>guiding inferencing to morphosyntactic categorization</td>
<td>1 (lexeme) 1 (clause) 1 (lexeme) 1 (r.f.)</td>
<td>4 (lexeme) (2 chained) 1 (r.f.)</td>
<td>4 (lexeme) (2 chained) 1 (r.f.) 1 (clause)</td>
<td>8 (lexeme) (4 chained) 2 (r.f.) 1 (clause)</td>
<td>2 (lexeme) (2 r.f.) 1 (clause)</td>
</tr>
<tr>
<td></td>
<td>Non-prototypical meaning</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>guiding inferencing to morphosyntactic categorization</td>
<td>2 (lexeme) (both r.f.)</td>
<td>2 (lexeme) (2 chained) 1 (r.f.)</td>
<td>8 (lexeme) (4 chained) 2 (r.f.) 1 (clause)</td>
<td>2 (lexeme) (2 chained) 2 (r.f.)</td>
<td></td>
</tr>
<tr>
<td>FORM</td>
<td>Prototypical form</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>guiding inferencing to morphosyntactic categorization</td>
<td>1 (lexeme) 1</td>
<td>4 (lexeme)</td>
<td>4 (lexeme)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Non-prototypical form</td>
<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td>guiding inferencing to morphosyntactic categorization</td>
<td>2 (lexeme) (2 chained) 1 (r.f.)</td>
<td>1 (phrase) 1 (r.f.)</td>
<td>2 (lexeme) (2 chained) 1 (r.f.) 1 (phrase)</td>
<td>19 (lexeme) (2 chained) 3 (phrase) 4 (clause)</td>
<td>23 (4 chained) 6 (phrase) 5 (clause sentence)</td>
</tr>
<tr>
<td>Guiding inferencing to implicit meaning</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Implicit constructional meaning</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>at phrase level</td>
<td>1 (chained to utterance-level metonymy) 1 (r.f.)</td>
<td>3 (2 chained to utterance-level metonymy) 1 (r.f.)</td>
<td>4 (2 chained) 4 (r.f.)</td>
<td>7 (both chained) 1 (r.f.)</td>
<td>10 (7 chained) 1 (r.f.)</td>
</tr>
<tr>
<td></td>
<td>at clause/sentence level</td>
<td>9 (6 chained)</td>
<td>9 (6 chained)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Implicit utterance-level meaning</td>
<td>2 (chained)</td>
<td>3 (chained) 4 (chained) 25 (14 chained) 1 (r.f.)</td>
<td>10 (6 chained) 44 (27 chained)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTALS</td>
<td>6 (3 chained) 1 (r.f.)</td>
<td>7 (5 chained) 13 (7 chained) 2 (r.f.)</td>
<td>45 (20 chained) 8 (r.f.)</td>
<td>72 (21 chained) 1 (r.f.)</td>
<td>143 (58 chained) 8 (r.f.)</td>
<td>319</td>
</tr>
</tbody>
</table>
As can be seen, metonymy is regularly made use of at various levels of analysis in the same expression. We find this multilevel co-occurrence in the five case studies. If one examines each of the columns in the table, one finds the operation of conceptual metonymy at various analytical levels in the same text, very often in the same sentence. A somewhat more detailed comment on the results summarized in this table is presented in 4.3.2 below, but before this comment I present in 4.3.1. some examples, drawn from the case studies, of the functioning of metonymy at various analytical levels in the texts.

4.3.1. Examples of the functioning of metonymy at various analytical levels in the texts analyzed in the case studies

The results presented in table 1 and commented on in 4.3.2. are based on a careful argumentation justifying my claims on the role played by each metonymy identified in the five texts. Unfortunately, there is not enough space in this chapter to reproduce my discussion of each one of the 143 metonymies identified in the five texts altogether.

In this sub-section only some significant examples from the various case studies are offered to illustrate my application of the notion of metonymy to the analysis of the texts and the classification, in terms of the function and level, of the metonymies reflected in the table. In a later section, the relevant parts of Case Studies A and C are presented as a detailed illustration of metonymic chaining, thus at the same time of a substantial number of the metonymies included in the table. The full details of each case study, including a more extended discussion of all the metonymies presented below are to be found in Barcelona (in prep.).

Examples of metonymies motivating prototypical constructional meaning

– Case Study E:

The morpheme {ful} (in armful) is a derivational morpheme used to derive nouns from nouns. It originates in the adjective ‘full’. The abstract morphemic meaning can be described as “the quantity of X that fills or would fill Y” (adapted from the definitions in the Webster’s and the OED dictionaries, under ‘-ful’); thus the lexeme ‘armful’ refers in this text to the “amount” of Mary’s body that fills Tyrone’s arm. This standard sense of
the morpheme seems to be based on the metonymy LEVEL OF CONTAINER FOR AMOUNT OF CONTENT REACHING THE LEVEL. That is, the domain of quantity is activated not directly by the domain of content, but by the domain of the level in the container reached by the content, within the ‘FILLING’ ICM. In this example, the content has reached the maximum possible level and the container (a metaphorical one in this case, the arms) is “full” as a result. This metonymy also motivates other conventional linguistic expressions in which a measure of the capacity of a container is a metonymic source activating a certain amount of content: *Give me half a glass of beer, She just drank two inches*. This metonymy is a special case of the widespread metonymy VERTICALITY FOR QUANTITY, which we also find in Case Study A (see below, section 5.2. and table 2).

The “container” (often a metaphorical one) is specified by the lexical morpheme, \{arm\} in this case, in the derived noun.\(^5\) Other examples of the use of this morpheme are *a bottleful, a boxful, a canful, a churchful*, etc., and metaphorically, *an armful, a worldful*, etc. That is, *a churchful* denotes “as many as a church can hold”, the meaning of *bottleful* is “as much as a bottle can hold”, etc. (both definitions taken from the *OED*).

– Case Study C:

The conversion of the lexeme ‘interstate-adjective’ into the lexeme ‘interstate-noun’ (cf. the forms in the phrases *some Interstates, the Interstate, an Interstate*) is motivated, on the meaning plane, by the metonymy SALIENT PROPERTY OF AN ENTITY (LINKING TWO STATES) FOR THE ENTITY (A HIGHWAY), which also motivates the prototypical meaning (“interstate highway, freeway, road, etc.”) of the nominal lexeme. This meaning is registered in the *Oxford English Dictionary*, henceforth *OED*.

At the same time this metonymy may help readers/listeners to distinguish between the homonymous non-prototypical adjective lexeme ‘*interstate*’\(^6\) and the prototypical noun lexeme ‘*interstate*’.

– Case Study A:

To the extent that the combination ‘*how much*?’ can be regarded as an established semi-institutionalized *compound lexeme*, its prototypical quantitative meaning seems to have arisen on the basis of the metonymy UPPER END OF QUANTITATIVE SCALE FOR WHOLE SCALE (see Kövecses and Rad- den 1998: 51). Note that the marked alternative to this expression would be *How little (did you buy)*?, which somehow revives its metonymic basis.
– Case Study C:

The prototypical referential meaning of the *phrasal-lexical construction ‘the Continental Divide’* (i.e. a phrasal name), namely “the Rocky Mountains”, a sense registered both by the *Webster’s Dictionary* and by the *OED*, is motivated by the same metonymy: **SALIENT PROPERTY OF AN ENTITY (ROLE AS CONTINENTAL BASIN DIVIDE)** FOR THE ENTITY (THE ROCKY MOUNTAINS).⁷

**Examples of metonymies motivating non-prototypical constructional meaning**

– Case Study E:

The non-prototypical intransitive meaning of lexeme *reduce* “lose weight, as in by dieting” (*Webster’s*) is derived from another non-prototypical intransitive meaning of the same verb, i.e. “becoming reduced”, in turn derived from its prototypical causative-transitive sense “to lessen in **any way**, as in size, weight, amount, value, price, etc; to diminish” (see *Webster’s*).⁸

The first intransitive sense is motivated by the metonymy **ACTION (CAUSING TO REDUCE) FOR RESULT (BECOMING REDUCED)** and the second intransitive sense is motivated by the metonymy **CATEGORY (BECOMING REDUCED IN GENERAL) FOR SALIENT MEMBER (BECOMING REDUCED IN WEIGHT)**. Therefore, the second metonymy seems to be **chained** to the first one, since the target of the first metonymy is the source of the second.

Given that the three senses are still alive (see *OED* sub-entries 26 a, c and e in the entry for verb ‘reduce’), these metonymies, besides being mainly motivational, may still play occasionally a minor inferential role, in cases in which the verb might be ambiguous between two of these senses (for example, between the two intransitive senses mentioned).⁹

– Case Study E:

The expression ‘**Thank God**’ is a clausal idiom, which originates in the now obsolete clausal idiom *I thank God*.¹⁰ Its conventional non-prototypical meaning is to indicate that one is pleased about something. This meaning comes about metonymically on the basis of the prototypical sense of the idiom (i.e. to express gratitude to God for something that has
happened to one, because one is pleased with it). That is, the cause for one’s
gratitude to God is that one is pleased with the event. The metonymy can
be categorized as effect (gratitude to God) for cause (the feeling of satisfaction given by a beneficial event or situation).

Examples of metonymies motivating prototypical constructional form

– Case Study C:

The conversion of the lexeme ‘interstate-adjective’ into the lexeme ‘interstate-noun’ is also motivated, on the plane of form, by a process of ellipsis of the head in the phrasal constructional schema ‘interstate highway/freeway etc’. This ellipsis is, in turn, motivated by the metonymy Salient part of form (modifier) for whole form (modifier-head construction). Modifiers are salient because they encode a property of the head entity used for purposes of identification, classification, or distinction. The metonymy may also have an inferential role in discourse when the poverty or ambiguity of contextual information forces the comprehender to go through an elliptical interpretation before recognizing the nominal status of Interstate.

Examples of metonymies motivating non-prototypical constructional form

If the set of forms of a construction can be seen as constituting a small cognitive “functional domain” (a frame or an ICM), then it should not be surprising that its members can be linked to each other by means of metonymy, as in other cognitive frames or domains.

– Case Study A: /a(r)/ for /hə:(r)/

Let us assume that Mary is a British speaker (unlike John). The metonymy Salient part of form for whole form helps the hearer to categorize the phonological sequence /ə(r)/ as a phonological variant form of the object form of the lexeme ‘she’ in British English. This categorization is possible because /hə: r/, which is the whole “strong”, prototypical object form of the lexeme before a vowel, is evoked by a representative subset of it (the /ər/ sequence). There are probably one or more intermediate metonymic
links in the chain linking this “non-prototypical” oblique form of ‘she’ to
the prototypical form. Two likely links are these two weak forms before
vowels: /hɛr/, which retains the /h/ phoneme; and /æːr/, which drops the /h/
but retains the lengthening of /æ/ and the corresponding vocalic quality
accompanying it. Again, the saliency of the source subset is obvious:
vowels tend to be acoustically more prominent than consonants, especially
if the consonant is a pre-vocalic glottal fricative like /h/, which tends to be
deleted in rapid speech. And, in the written medium, <er> is more capable
evoking <her> than just <h>.

– Case Study C:

The example now is 70, in the context Interstate 70.

The sequence Interstate 70 instantiates a non-prototypical form of a mi-
nor nominal phrasal construction that I call the ‘NP+‘number’ + cardinal’
construction (Barcelona in prep.). The prototypical form of the construction
consists of a head noun phrase and a modifying noun phrase made up of a
cardinal numeral preceded by the appositive noun ‘number’,12 as instanti-
ated by book number one, book number two, etc.13 The cardinal in the
postmodifier component construction (‘number’ + cardinal’) of this
prototypical form of the construction regularly indicates serial order rather
than quantity. The construction may undergo ellipsis and get reduced to
‘NP+cardinal’; this reduced form is instantiated in this text by Interstate
70. That the elliptical form of the construction is conventional, but non-
prototypical, is shown by the conventionality of such sequences as book
one, student one, etc., which are, however, regarded by native speakers as
elliptical variants of book number one, student number one etc; that is, as
non-prototypical forms of the prototypical constructional form instantiated
by book number one, etc.

This non-prototypical elliptical form of the construction is motivated in
part by a form-level metonymy operating within its modifier component
construction. That metonymy can be called ‘CARDINAL’ FOR THE
‘NUMBER’ + CARDINAL’ CONSTRUCTION. This metonymy is, once more, a
manifestation of the metonymy SALIENT PART OF FORM FOR WHOLE FORM.
The cardinal part of the construction is salient, since it is a constructional
element whose instantiation by any specific cardinal numeral lexeme is
necessarily more informative and distinctive than the fixed element ‘num-
ber’ alone. Therefore it is more adequate as a metonymic reference point
for the whole component construction ‘‘NUMBER’ + CARDINAL’.
The role of the metonymy SALIENT PART OF FORM FOR WHOLE FORM is both motivational and inferential in this case, as in most others. On the one hand, it motivates the conventional elliptical variant of the construction, and on the other hand, it may guide inferential work leading to the recognition of any phonological sequence instantiating the form ‘NP+cardinal’ (e.g. bus one, BP station 25) as an instance of that elliptical variant of the composite construction ‘NP+ ‘number’+cardinal’, when the context is not explicit enough for such recognition.¹⁴

– Case Study E:

The use of didn’t in the text portion TYRONE. You didn’t can be regarded as anaphoric for didn’t eat a lot or as elliptical, with ellipsis of the main verb and the complementation. Under either analysis, the auxiliary (negated or not) stands for the whole structure for which it is a reference point. The metonymy at work (which motivates numerous instances of ellipsis) is again SALIENT PART OF FORM FOR WHOLE FORM. The negated auxiliary is salient in this case because it provides new or contrastive information, whereas the rest of the clause is “given”. Again, the metonymy is both motivational and inferential, since it can guide the recognition of an auxiliary as standing for the contextually relevant auxiliary-verb-complementation clausal part (i.e. “for the predicate” in traditional grammar).

Examples of metonymies guiding inferencing to implicit meaning:

Most of these metonymies are chained metonymies, so they will be amply illustrated in section 5. Just one brief example of a phrase-level inferential metonymy is presented now.

– Case Study B:

The prima facie inference from Speaker A’s utterance (before Speaker B radically switches the interpretation of this utterance) is “Do you believe in the convenience, usefulness, etc. of building, maintaining, etc. (social) clubs for young men?” This prima facie inference is guided by the metonymy PARTICIPANT FOR ACTIVE ZONE RELATIONSHIP. The active zone of SOCIAL CLUBS (a generic collective participant) as regards Speaker B’s belief in clubs is a further relationship (with an implicit and unspecified relational predication) in which SOCIAL CLUBS participate; that is,
“BUILDING/MAINTAINING, ETC. (SOCIAL) CLUBS FOR YOUNG MEN IS USEFUL/CONVENIENT, ETC”. or “(SOCIAL) CLUBS (ARE) CONVENIENT/USEFUL, ETC. FOR YOUNG MEN”.

4.3.2. A brief comment on the results displayed in Table 1

I only have space to comment on some of the main findings displayed in the table. Barcelona (in prep.) includes other findings and a more extended discussion.

The first finding, already mentioned in the paragraph following table 1, is that metonymy regularly operates at various levels of analysis in the same text, very often in the same sentence (cf. the column in table 1 for the one-sentence text analyzed in Case Study C).

The second finding is that metonymy is extremely frequent in all the texts. If the total number of words of all of the texts is taken as a measuring-rod, the occurrence of metonymy in the texts is quite significant: in a total of 352 words in the five texts altogether, 143 metonymies were found to operate at some level. Of course, metonymy is so frequent because it does not only operate at the lexical level, but also, as we have seen, at the other grammatical levels and very often beyond the sentence, at utterance level. In addition it operates both on the plane of constructional meaning and on the plane of constructional form.

The third finding is that motivational metonymies are very frequent. Of the 143 metonymies in the corpus, 79 are motivational metonymies (55, 24%) and 63 (44,05%) are purely inferential metonymies. Of the motivational metonymies, those motivating constructional meaning are slightly less frequent (38, i.e. 26.57% of the 143 total) than those motivating constructional form (41, i.e. 28.67% of the total of 143). The fourth finding is that there seems to be a tendency for metonymies in the same text to concentrate on the level of meaning inference. Out of 143, there are 63 (44,05%) whose only function is to guide meaning inference. If the count includes the 40 motivational metonymies that also guide correct inferencing to meaning or form, the proportion of inferential metonymies in the sample is even higher (103 inferential metonymies out of a total of 143, that is, 72,02 %).

The fifth finding is that purely inferential metonymies have the utterance as their scope in most cases (44 metonymies, that is, 69,84% of all purely inferential metonymies), but they often occur simultaneously at other lower levels (sentence/clause level and phrase level; see table 1).
The sixth finding is that both motivational and purely inferential metonymies tend to occur in chains or series (see Nerlich and Clarke 2001, for what they call “serial metonymy”, and section 5 below). Of a total of 143 metonymies, 58 (40.55%) are chained to other metonymies. Motivational metonymies entering some chain amount to 18 overall (31.03% of the 58 chained metonymies). Purely inferential metonymies account for most of the instances of metonymic chaining in the corpus (40, i.e. 68.96% of the total of 58).

The seventh finding is that, contrary to what is usually claimed, referential metonymies (those marked by r.f. in table 1) were relatively uncommon in the corpus (8 out of 143 metonymies, i.e. 5.59% of the total number of metonymies identified).

These findings and others not mentioned here thus constitute clear evidence that the multi-level co-occurrence of metonymy in the same utterance and/or text is a regular phenomenon. They also reveal some of the main patterns of this multi-level functioning.

An important fact that has been revealed by the five case studies is the role of metonymy in the motivation of constructional form, particularly of non-prototypical form.

These studies also show that the main function of metonymy is its inference-guiding function, which seems to be more basic than its motivational and referential functions, not only because it is very frequent, but because it underlies the other two functions. As a natural inference schema (see 4.1. above), every metonymy is ultimately an inferential metonymy. Motivational metonymies normally start out historically as inference-guides, and they often retain this inferential nature even after a metonymy-based meaning or form has become entrenched (see the comment on 70 in the context Interstate 70 in 4.3.1. above).

5. Chained metonymies

This section is concerned with the phenomenon of metonymic chaining, as observed in the corpus. After presenting the notion of metonymic chaining (5.1.), the relevant parts of case studies A and C are offered as illustrations (5.2. and 5.3), followed by a brief discussion of the patterns of metonymic chaining observed in the corpus (5.4.).
5.1. What is a metonymic chain?

Metonymic chains are *direct or indirect series of conceptual metonymies guiding a series of pragmatic inferences*. Like single metonymy-based inferences, metonymy-based series of pragmatic inferences may, in turn

(a) become entrenched in constructional meaning or form, and then the metonymic chain is also *motivational*;

(b) lead the listener/reader to discover the referential intentions of others, and then the metonymic chain is also *referential*, or

(c) simply guide non-lexicalized, non-grammaticalized implicatures or implicatures not establishing reference, and then the metonymic chain is *purely inferential*.

In metonymic chains, certain metonymies seem to “pave the way” for the operation of other metonymies. The chaining of metonymies is a natural consequence of their ubiquity and their multi-level co-occurrence in the same utterance and text.

As stated earlier, the role of purely inferential metonymies in metonymic chains is particularly frequent. In my corpus, 40 (68.96%) out of 58 chained metonymies occurred in the realm of implicit (pragmatic) inferencing, normally at utterance level or at the equivalent of an utterance in written texts (27 metonymies) but also at certain grammatical constructional levels (13 metonymies).

5.2. A (deceptively) simple example

I have presented reduced versions of the analysis of this example at several conference lectures and articles (e.g. in Barcelona 2002b). The example is the brief conversation that is analyzed in Case Study A. The full version of the case study is in Barcelona (in prep.). The analysis presented below only includes, with some minor additions aimed at facilitating its comprehension, the part of the case study concerned with the metonymic chaining that is claimed to operate in the comprehension of the text. Though included in the final appendix, the text (adapted from an example in Radden 2000: 94–95) is reproduced here for convenience:

*John:* How much gas did you buy?

*Mary:* I filled ’er up
The chaining is represented graphically in Figure 1 (solid arrows indicate a metonymic link. Broken arrows indicate a non-metonymic, or not clearly metonymic, link).

In John’s question, the mention of the action of ‘buying gas’ sets up the GASOLINE STATION FRAME as a mental space (Fauconnier 1994), which may already be active if it is situationally given. But in order for this to happen, GAS, as a non-prototypical form, has to activate GASOLINE as a prototypical form of the lexeme ‘gasoline’, which in turn sets up the CAR FRAME as a mental space, already active through the GASOLINE STATION FRAME.

In Mary’s reply, ‘ER, as a non-prototypical form, activates HER as the prototypical object form of lexeme ‘she’, which, via metaphorical personification and with the help of the context (gas, filled..up), is interpreted as a direct conceptual anaphor for CAR. The latter metonymically activates CAR TANK, with the aid of the same contextual clues (gas, filled...up). On the other hand, the mention of the action of “filling up (a car tank)” activates metonymically the precondition (in the typical American gas station) of buying gas, and (particularly by means of UP) the notion of MAXIMUM AMOUNT. The last two metonymy-based inferences make Mary’s reply relevant and informative: it can be paraphrased as “I bought the maximum amount of gas that the gasoline tank can hold”.

As can be seen, the metonymies operating in this text do not always chain directly to other metonymies; not surprisingly, they interact with other conceptual phenomena. The connections may be appreciated more directly if the chaining is represented as a numbered list. The list is in table 2.
Table 2. Chaining of metonymies and other conceptual elements in Case Study A

Lexical / Phrasal Level: 3 chained metonymies

1. SALIENT PART OF FORM FOR WHOLE FORM \textbf{triggers} 2.  
   2. Inference of gas as a form of lexeme ‘gasoline’ \textbf{facilitates} 3, 4 and 8.  
   3. The GASOLINE STATION FRAME \textbf{facilitates} the setting up of 4.  
   4. The CAR FRAME \textbf{facilitates} 5 and 8.  
   5. Metaphor HIGHER INANIMATE ENTITIES (ships, cars, etc.) ARE PEOPLE \textbf{facilitates} 6 and 8.  

6. ‘ER FOR HER \textbf{triggers} 7  
   7. Inference of ‘er as a form of the object form of lexeme ‘she’.  

8. CAR (WHOLE) FOR CAR TANK (ACTIVE ZONE) \textbf{triggers} 9 and \textbf{facilitates} application of 10 (through activation of CAR TANK) and derivation of 11.  
   9. Inference of CAR TANK as conceptual anaphor of her.

Clause / Sentence / Utterance level: 2 chained metonymies

10. RESULT (FILLING CAR TANK) FOR PRECONDITION (PURCHASING GAS) \textbf{triggers} 11 and 12. It includes notion of FILLING, which \textbf{facilitates} application of 8 and 13 (FILLING implies VERTICALITY).  
   11. Inference that Mary did buy gas.  
   12. Inference that Mary’s reply is informative.  

13. VERTICALITY FOR QUANTITY (MAXIMUM LEVEL IN FILLING A CONTAINER FOR MAXIMUM AMOUNT OF CONTENT) \textbf{triggers} 14 and 15.  
   14. Inference that Mary bought the maximum amount of gas that the car tank can hold.  
   15. Inference that Mary’s reply is relevant.

The list is a very rough and merely approximative attempt at showing how certain metonymies in this text trigger or facilitate the derivation of inferences, and the activation of other metonymies, metaphors and other conceptual elements (mainly mental spaces); it is also an attempt at showing how certain metonymies may be facilitated by other contextually active conceptual elements.

In my terminology, a metonymy X “triggers” an inference, or another metonymy, etc. Y, when X is the main factor guiding the comprehender towards Y. This typically happens when Y constitutes the metonymic target or includes it or is a very important part in it. For instance, SALIENT PART OF FORM FOR WHOLE FORM triggers the inference of gasoline as the canonical form corresponding to the form gas of the lexeme ‘gasoline’. A metonymy X “facilitates” an inference, etc. Y, when X is not the only or
the main factor leading to Y and X simply provides part of the conceptual material (part of the “cognitive context”) leading to Y, other conceptual elements providing the rest of that material. For example, SALIENT PART OF FORM (gas) FOR WHOLE FORM (gasoline) facilitates the setting up of the GASOLINE STATION FRAME and the CAR FRAME, via the activation of the lexeme (a form-meaning pair) ‘gasoline’.

The same terminology is used in 5.3. below. In 5.4., this terminology will be expanded to include one more term, “combines”, in connection to types of direct chaining between metonymies.

5.3. A more complex example

This example consists of an analysis of the metonymic chainings corresponding to the text chosen for Case Study C (the text is reproduced for convenience):

If you have ever driven west on Interstate 70 from Denver to the Continental Divide, you have seen Mount Bethel.

The analysis is based on Case Study C (Barcelona in prep.), which includes a very careful description of, and argumentation for, each of the metonymies operating in the sentence. Only those that enter a chain are taken into account for the purposes of the analysis. Unfortunately, I cannot include such a description and argumentation here for lack of space. However, I will briefly argue below for the existence of those metonymies which may not be immediately obvious.

The full version of Case Study C represents the metonymic chaining that is claimed to operate in the comprehension of the text, both in a figure and in an ordered list. There is not enough space here to include both the figure and the list, and to comment on them. The figure is, on the other hand, fairly complex. Therefore, only the ordered list, included in table 3 below, is reproduced in this chapter.
Table 3. Chaining of metonymies and other conceptual elements in Case Study C

Lexeme and phrase-level inferences

0. Certain motivational metonymies, particularly those motivating the epistemic conditional construction coded by this sentence and the lexical sense of driven and of the phrase the Continental Divide, facilitate 1.

1. INTERSTATE (DISTINCTIVE PROPERTY) FOR INTERSTATE FREEWAY/HIGHWAY (CATEGORY), which is a motivational-inferential metonymy, triggers 2.

   2. Inference of Interstate as lexeme ‘interstate-noun’ facilitates 3, 5, 7, 9 and 11.


   4. Inference of Interstate as elliptical for Interstate Freeway or for Interstate Highway facilitates 5, 7 and 9.

5. CARDINAL NUMBER 70 (DIGITAL MEASURING OF QUANTITY) FOR SERIAL CARDINAL NUMERAL 70 (SERIAL ORDERING) triggers 6 and 7.

   6. Inference of serial sense of cardinal lexeme ‘70’.

7. The metonymies whereby the construction ‘serial cardinal numeral 70’ activates the construction ‘number + serial cardinal 70’ and whereby the construction ‘number + serial cardinal’ activates the construction ‘NP+number + serial cardinal’ (both of them of the type SALIENT PART OF CONSTRUCTIONAL FORM FOR WHOLE CONSTRUCTIONAL FORM) jointly trigger inference 8.

   8. Inferences of 70 as elliptical for number 70 and of Interstate 70 as elliptical for Interstate number 70, which, together with inferences 2 and 4, facilitate 9.

9. Inference of Interstate 70 as “interstate freeway/highway with serial number 70” facilitates (provides conceptual element “interstate 70”) for 10 and 11.

Sentence- and text-level inferences wholly or partly guided by metonymy

10. The inference (afforded by epistemic conditional) “Under normal conditions, the reader that has driven west on that section of Interstate 70 has necessarily seen Mt Bethel” facilitates 11 (by providing notion of “necessarily seeing Mt Bethel”) and 13 (indirectly, through 11).

11. SEEING MOUNT BETHEL FROM INTERSTATE 70 (RESULT) FOR MOUNT BETHEL BEING RELATIVELY CLOSE TO INTERSTATE 70 (CONDITION), which triggers 12 and facilitates 13.

12. Inference “Mt Bethel is relatively close to Interstate 70” facilitates 15.

13. CONVENTIONAL INTRODUCTION TO DESCRIPTION (CAUSE) FOR EXPECTATION OF UPCOMING DESCRIPTION (EFFECT) triggers 14.
Let us briefly explain the list in this table.

The lexeme- and phrase-level inferences guided by metonymy and facilitated by contextual factors provide the conceptual basis for at least some of the overall utterance- and text-level inferences.

At those lower levels, the metonymy INTERSTATE (DISTINCTIVE PROPERTY) FOR INTERSTATE FREEWAY (CATEGORY) both motivates and triggers the inference of the form Interstate as a form of the lexeme ‘inter-state-noun’, with the help of the context (driven west on... and from Denver to the Continental Divide).

Other readers might, alternatively, interpret Interstate as elliptical for Interstate Freeway or Interstate Highway (no. 4 in the table list). The metonymy triggering this interpretation, is SALIENT PART OF CONSTRUCTIONAL FORM (the MODIFIER) FOR WHOLE CONSTRUCTIONAL FORM (the MODIFIER-HEAD CONSTRUCTION) (no. 3). But the application of this metonymy is in turn facilitated by the input provided by inference 2, in turn triggered by metonymy 1, which stresses the recognition of the notion BEING INTERSTATE as an essential (distinctive) factor in the saliency of the modifier.

In both alternative interpretations, metonymy guides inferencing at the level of morphosyntactic categorization. And in both of them, the mental space INTERSTATE FREEWAY/HIGHWAY is set up, which includes the property “entity susceptible of serial ordering”, as highways and roads are count entities, thus susceptible of being counted and of being serially arranged in a list. An interstate freeway or highway is, on the other hand, a type of entity that is conventionally given a serial number in the U.S. culture.20 This property, in turn, provides the input facilitating the application of metonymy 5, CARDINAL NUMERAL 70 (DIGITAL MEASURING OF QUANTITY)
FOR SERIAL CARDINAL NUMERAL 70 (SERIAL ORDERING), which triggers the serial sense (no. 6) of cardinal lexeme ‘70’.

And this metonymy then triggers the operation of two directly chained form-level metonymies (no. 7), one of them with the lexeme ‘serial cardinal 70’ (SALENT PART OF CONSTRUCTIONAL FORM) standing for the phrasal construction ‘number + serial cardinal 70’ (WHOLE CONSTRUCTIONAL FORM) (as in number 70; see above, 4.3.1). The metonymy receives as an input from metonymy no. 5 an essential conceptual structure (the notion SERIAL ORDER) for the recognition of the serial or ordinal cardinal lexeme ‘70’ as a salient part of the whole constructional form. The other form-level metonymy, again an instance of SALENT PART OF FORM FOR WHOLE FORM, uses the target of the previous metonymy (the phrasal construction ‘number + serial cardinal 70’) as a source to activate the major construction ‘NP + number + serial cardinal’. Since the NP slot is already filled by Interstate, this local metonymic sub-chain triggers the inference of 70 as elliptical for number 70 and (aided by the presence of Interstate) of Interstate 70 as elliptical for Interstate number 70 (inferences listed in no. 8).

The alternative inferences 2 and 4 (namely the interpretation of Interstate as ‘interstate-noun’ or as elliptical for Interstate Freeway/Highway) guided by the metonymies discussed above as no. 1 and 3 and the inferences (no. 8) guided by the local metonymic sub-chain affecting the interpretation of 70 (no. 7) facilitate the global interpretation of the sequence Interstate 70 as “interstate freeway/highway with serial number 70”. This interpretation is part of the data that invite the first inference at utterance and text level (no. 10).

The sentence/utterance- and text-level inferences invited by the sentence under analysis are, to a very large extent, guided by metonymy. The conditional construction instantiated by this sentence is an instance of what Sweetser (1990, 1996) calls “epistemic conditionals”. The inference invited by this construction in this case is that if the reader has driven west on that section of Interstate 70 (under normal conditions of visibility and attention), then it is reasonable to conclude that he/she has seen Mt Bethel.

This inference thus facilitates the application of metonymy no. 11, namely SEEING MOUNT BETHEL FROM INTERSTATE 70 (RESULT) FOR MOUNT BETHEL BEING RELATIVELY CLOSE TO INTERSTATE 70 (CONDITION). This metonymy triggers implicature 12, namely that Mt Bethel is relatively close to Interstate 70, which in turn provides the notion LOCATION OF MOUNT BETHEL as part of the input for a later metonymy, as we will see presently.
An element in the source of metonymy 11, namely SEEING MOUNT BETHEL, facilitates the further metonymy listed as no. 13, CONVENTIONAL INTRODUCTION TO DESCRIPTION (CAUSE) FOR EXPECTATION OF UPCOMING DESCRIPTION (EFFECT). This metonymy triggers the inference (no. 14) “A description of Mount Bethel may be coming up”. Note that neither this inference nor the remaining inferences in the list, are any longer directly based on linguistic data. They are triggered by non-linguistic conceptual elements, although the initial part (no. 1–11) of the inferential chain which includes them is invited by linguistic input.

Inference 14 includes the notion DESCRIPTION OF MOUNT BETHEL. This notion and the notion LOCATION OF MOUNT BETHEL (already active by virtue of inference 12), together with the knowledge of the type of text (a hiking report intended as a guide for prospective hikers) jointly facilitate the activation of the notion PRELIMINARY TRAVEL INFORMATION in (15), since the location of the destination and its (general) description are two items of PRELIMINARY TRAVEL INFORMATION usually provided in what might be called the TRAVEL INSTRUCTIONS FRAME.

Once the latter notion is active, the metonymy PRELIMINARY TRAVEL INFORMATION (PART OF FRAME) FOR TRAVEL INSTRUCTIONS FRAME (WHOLE FRAME) (no. 15) triggers inference no. 16, “A series of travel instructions may be coming up”. This metonymy sets up in fact, not only the TRAVEL INSTRUCTIONS FRAME but the whole TRAVELLING FRAME.

The experiential knowledge associated with both of these frames and with the hiking report text type facilitates the metonymy ACTION FOR PURPOSE. The delivery of a series of travel instructions in a hiking report usually has the purpose of guiding the traveller to the exact starting point of the hike to be reported on. This metonymy then guides the possible final overall inference “The ensuing travel instructions may be given in order to locate the exact point in Mt Bethel where the hiking experience reported in this text began”.

Like every implicature, all of these sentence-level inferences are cancellable. Those presented here are, however, confirmed by the rest of the text, which actually shows that Mt Bethel is fairly close to the Interstate and which continues to provide further instructions to get to Mt Bethel and, once there, to the starting point of the hike. If not immediately arrived at right after reading the first sentence, these implicatures would almost certainly be arrived at on the basis of the further information provided by the rest of the text, by applying, among others, the same metonymies that have been discussed here.
5.4. Patterns in metonymic chaining

A detailed analysis of the chaining phenomena observed in the corpus is still under way. Only a series of provisional generalizations can be offered at this stage. These generalizations emerge from an initial examination of all the complex metonymic chains observed in the various case studies and from a more systematic analysis of the chains in two of these studies. Finer distinctions will probably emerge once the systematic analysis of the data has been completed.

In any case, these provisional generalizations already suggest that certain recurrent patterns can certainly be discerned in the chaining of the metonymies in the corpus.

The criteria that have been applied in that initial examination and that will also be applied in the exhaustive analysis of the data are as follows:

1. *Function of the metonymic chain* (purely motivational, purely referential, purely inferential, mixed types).

2. *Directness of the link or chaining* between one metonymy and another. From this perspective, metonymic links can be *direct* or *indirect*. Direct metonymic links occur when metonymy $x$ connects directly to metonymy $y$ without an intermediate *non-metonymic* conceptual link, such as a metaphor or any other contextual conceptual factor (e.g. an active mental space) not directly activated/contributed by metonymy $x$. An indirect link between two metonymies occurs when they are connected by means of an intermediate *non-metonymic* conceptual link.

3. *Analytical levels* at which the chaining occurs (constructional meaning only, crossing or not hierarchical levels; constructional form only, crossing or not hierarchical levels; implicit meaning only; mixed types).

So far these analytical criteria have been applied systematically only to the chains observed in Case Studies A and C (but even such an application still requires careful revision).

The above mentioned provisional generalizations are presented below.

As regards Criterion 1, most of the chains seem to be *mixed*. The usual pattern is for motivational-inferential metonymies to chain to purely inferential ones. This happens in all of the Case Studies except B, in which the chain is purely inferential. For instance, in Case Study A (see 5.2. and table 2 above), *motivational-inferential* metonymies 1 and 6 are indirectly chained to each other by contextual conceptual elements 2-5, especially by 5, which also chain them to the *purely inferential* metonymy 8; this metonymy is chained (by facilitating it) to metonymy 10, which in turn facilitates 13.
As regards Criterion 2, on the basis of this study, I have found that both main types of metonymic chaining (direct and indirect) are represented in the corpus, very often inside the same overall metonymic chain, as shown in tables 2 and 3. I have also found that direct chaining between two metonymies seem to respond to one of these three types:

(a) In a chaining of two metonymies \(x\) and \(y\), \(x\) “triggers” \(y\), if the target of \(x\) is the source of \(y\). Example (Case Study E): DYING OF INDIGESTION FOR EATING TOO MUCH triggers EATING TOO MUCH FOR GLUTTONRY. This type of direct chaining has been called in the Case Studies a “triggering” link between metonymy \(x\) and metonymy \(y\). This type represents the ideal type of metonymic chaining.

(b) In a chaining of two metonymies \(x\) and \(y\), \(x\) “combines to” \(y\), when both yield together the main conceptual elements to trigger or facilitate an inference. An example can be found in Case Study E, when Tyrone says, after putting his arm around Mary’s waist: You’re a fine armful now, Mary, with those twenty pounds you’ve gained. Mary’s reply (I’ve gotten fat, you mean, dear) manifests what she infers from Tyrone’s utterance. The metonymy PROPERTY (BEING LARGER, “a fine armful now”) FOR CONCOMITANT PROPERTY (BEING FATTER) combined with PROCESS (GAINING WEIGHT) FOR CONCOMITANT PROCESS (BECOMING FATTER) jointly trigger the inference, made both by Mary and by the audience, “Tyrone implies that Mary has gotten fatter”.

(c) In a chaining of two metonymies \(x\) and \(y\), \(x\) “facilitates” \(y\), when \(x\) contributes some conceptual element facilitating the operation of \(y\). Example (Case Study C; see table 3): Metonymy no. 1, namely INTERSTATE (DISTINCTIVE PROPERTY) FOR INTERSTATE FREEWAY/HIGHWAY (CATEGORY) facilitates, via inference no. 2 (nominal lexical meaning of Interstate as denoting a type of highway, that is, an entity susceptible of serial ordering), metonymy no. 5, namely CARDINAL NUMERAL 70 (DIGITAL MEASURE OF QUANTITY) FOR SERIAL CARDINAL NUMERAL 70 (SERIAL ORDERING), which in turn triggers the metonymies in no. 7. In a possible alternative reading, metonymy no. 3, a form-level metonymy, facilitates, via inference 4, metonymy 5, which would trigger the metonymies in no. 7.
A similar example occurs in Case Study D (noun phrase *Hwy 6*, sentence 2 in the text; see appendix), where *salient part of form for whole form*, a form-level metonymy, triggers the recognition of <*Hwy.*> as a non-prototypical written form of lexeme ‘*highway*’ (which denotes an entity susceptible of *serial* ordering), and so *facilitates* the metonymy CARDINAL NUMERAL 6 (DIGITAL MEASURE OF QUANTITY) FOR SERIAL CARDINAL NUMERAL 6 (SERIAL ORDERING), which triggers the inference of 6 as a serial cardinal numeral, i.e. equivalent in meaning to an ordinal numeral like ‘*sixth*’.

The “facilitation” link between two metonymies is the limiting instance of direct metonymic chaining, and is closer to indirect metonymic chaining. In the latter, two metonymies x and y are indirectly connected by a non-metonymic conceptual element, that is, an element not directly activated by x. In direct metonymic chaining, x facilitates the operation of y by contributing or activating a conceptual element that directly facilitates the operation of y.

All of the chains in the case studies display a combination of direct chaining with indirect chaining. Hence they are also *mixed* in terms of Criterion 2. The metonymic chains that have been identified in each of the texts are, taken as a whole, indirect chains, though all of them include direct sub-chains. I have not been able yet, however, to count the frequency of each of the three subtypes of direct metonymic chaining in the corpus. Anyway, even seemingly direct links, are normally facilitated or conditioned by a host of other semantic factors, as discussed by Nerlich and Clarke (2001) in connection with the metonymic chain motivating the historical semantic development of the French word ‘*bureau*’.

As regards, finally, criterion 3, the usual pattern observed is that metonymic chains tend to cross the meaning-form boundary, and to cross hierarchical linguistic levels (lexicon, phrase, clause, etc). In other words, they tend to be mixed chains from this perspective, too. For example, in Case Study C (see table 3), lexical-level metonymy 1 triggers inference 2, which facilitates the phrase-level metonymies in no. 7 and the clause-level metonymy no. 11 (ranging only over the main clause).

6. Summary and final comment

The main results of the research reported in this chapter are summarized below.
1. Evidence has been provided of the pervasiveness and frequency of metonymy in grammar and discourse. Metonymy occurs at all formal grammatical and semantic (including pragmatic) analytical levels in actual texts. An important finding, not often recognized in the literature, is the role of metonymy in the motivation of grammatical (especially lexical) form, and in particular of non-prototypical form. This research confirms the ubiquity of metonymy in conceptualization, linguistic structure and communication (e.g. Barcelona 2002b; Burkhardt 1996; Gibbs 1994; Panther and Radden 1999; Panther and Thornburg 2001, 2002; and Radden 2005).

2. The inferential function of metonymy has been claimed to be its basic function. Its motivational and referential functions are shown to be a derivation of this function.

3. Metonymies regularly chain to each other in the same utterance and text.

4. Chains of “active” (as opposed to “dormant”) metonymies tend to occur in discourse-pragmatic inferencing and seem to constitute the ‘backbone’ of inferential chains. This can be observed in tables 2 and 3, and in the rightmost column of table 1, where most chained metonymies concentrate in the area of pragmatic (“implicit”) meaning.

5. Metonymic chains respond to a set of general patterns identified in terms of the criteria of function, directness and crossing of analytical levels. Metonymic chains are normally mixed chains in terms of these criteria.

The descriptions of the metonymies and metonymic chains in the various case studies obviously does not amount to a full description of the structure and meaning of the samples analysed. Close approximations to such a description would be provided by dynamic discourse and cognition oriented models of linguistic structure and communication, such as Cognitive Grammar (CG) (e.g. Langacker 2001, in press), Blending Theory (Fauconnier and Turner 1996, 2002), or by NTL, the Neural Theory Language (Lakoff and Johnson 1999). All of these models take into account the role of metonymy in linguistic structure and communication, though only one of them (CG) really acknowledges the fundamental importance of metonymy in grammar; Langacker seems to be increasingly aware of the fundamental importance of metonymy as a motivational force of constructional meaning, hence indirectly, of grammatical form. Although, for space limitation, the constructions mentioned in this chapter were not systematically described in terms of the constructs used by CG, the notion of “grammatical construction” assumed in this chapter is basically the one advocated by CG.
Appendix

Texts analyzed in the case studies

1. Text in Case Study A

The brief conversation on which this study has been done was slightly adapted from Radden (2000: 94–95), by adding two fictional speakers (John and Mary), and checked with a native speaker of American English:

*John:* How much gas did you buy?
*Mary:* I filled ’er up

2. Text in Case Study B

The text is a well-known joke, attributed to W.C. Fields and borrowed from Attardo (1990):

*Speaker A:* Do you believe in clubs for young men?
*Speaker B:* Only when kindness fails

3. Text in Case Study C

The text chosen for this study is the *first sentence* of the first paragraph of an authentic narrative-descriptive text (comprising nine paragraphs, 660 words) randomly downloaded from the web (http://hikingincolorado.org/beth.html). To save space, only the title and the initial paragraph of the whole text are reproduced below (sequential numbering has been added before each sentence for ease of reference):

**MOUNT BETHEL**

(1) If you have ever driven west on Interstate 70 from Denver to the Continental Divide, you have seen Mount Bethel. (2) Several miles (?) before approaching the exit for Hwy. 6 which leads to Loveland Pass you will see a pyramid shaped peak just to the north of the Interstate. (3) This roadway icon stands out like a sore thumb (cliché’) due to it’s prominence and near perfect triangular shape. (4) As you pass the base of this peak on the highway you will notice two very steep avalanche chutes which lead directly to the summit. (5) This is the route I chose for my ascent. (6) I pulled off the highway to begin my hike from where it looked as though there once may have been a parking area at the base of the western-most avalanche chute and well off the highway right-of–way.

(The text analyzed in this case study has been the first initial sentence).
4. Text in Case Study D

The text analyzed in this study was the rest of the above paragraph, that is, sentences (2) through (6).

5. Text in Case Study E

The relatively long dialogue I chose at random for this study is just a small fragment of the initial conversation in the only scene in Act I of Eugene O’Neill’s play *Long Day’s Journey into Night*. The fragment takes up 19 lines; the whole scene occupies thirty-one pages. This is the fragment:

*Tyrone’s arm is around his wife’s waist as they appear from the back parlor. Entering the living room he gives her a playful hug.*

TYRONE. You’re a fine armful now, Mary, with those twenty pounds you’ve gained.

MARY *(smiles affectionately).* I’ve gotten fat, you mean, dear. I really ought to reduce.

TYRONE. None of that, my lady! You’re just right. We’ll have no talk of reducing. Is that why you ate so little breakfast?

MARY. So little? I thought I ate a lot.

TYRONE. You didn’t. Not as much as I’d like to see, anyway.

MARY *(teasingly).* Oh you! You expect everyone to eat the enormous breakfast you do. No one else in the world could without dying of indigestion. *(She comes forward to stand by the right of table).*

TYRONE *(following her).* I hope I’m not as big a glutton as that sounds. *(With hearty satisfaction.)* But thank God, I’ve kept my appetite and I’ve the digestion of a young man of twenty, if I am sixty-five.

MARY. You surely have, James. No one could deny that.

*(She laughs and sits in the wicker armchair at right rear of table . . .*30

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1. In *Picasso is not easy to appreciate*, PICASSO’S ARTISTIC WORK is a metonymic target, and its activation is carried out from the source Picasso, in his role as an ARTIST, with the result that the hearer/reader is invited to conceptualize this artistic work primarily as the outcome of Picasso’s genius—as an extension of his personality—, other aspects of the work being backgrounded.

2. In Barcelona (2002a) and Barcelona (n.d) I have recently proposed that the cognitive domain mentioned in the definition should be a functional cognitive domain (i.e. a frame or an ICM), and not just a taxonomic domain. In both papers, and in Barcelona (2003a), I have also claimed that the mapping in metonymy is unidirectional and asymmetrical, whereas the one in metaphor is unidirectional and symmetrical. By “symmetrical” I mean that each target element
has in its frame a role structurally equivalent to the role of its counterpart in the
source (e.g. in the LOVE IS A JOURNEY metaphor, the lovers have a role in the
“romantic love frame” which is structurally equivalent to the role of the travel-
ers in the “journey frame”).

3. What is conventionally believed to be a possible behavioral effect of sadness
(walking with drooping shoulders) metonymically activates its cause (the emo-
tion itself), so that an automatic inference is that the person exhibiting this bod-
ily behavior was sad. The metonymy in this example is EFFECT FOR CAUSE.

4. A brief note on notational conventions. A term or a series of terms in boldface
and enclosed in single quotes refers to a construction (a conventional form-
meaning pair), whether a morpheme (in whose case the term is also enclosed by
braces, as in ‘{ful}’, a lexeme, or a syntactic construction (often represented
abbreviatedly by a descriptive formula). Constructional meanings and infer-
ences are represented by one term or a series of terms in regular typeface and
enclosed by double quotes. Frames, domains, concepts, metaphors and me-
tonymies are represented by means of suitably evocative terms in small capi-
tals.

5. The sense of this morpheme is different in playful (hug), joyful, etc., where it is
an adjective-forming morpheme and means “full of”, “having”, “characterized
by”. This sense of the morpheme (or is this a different morpheme?) is meta-
phorically motivated, since an abstract notion (an attitude such as a disposi-
tion to play, or an emotion such as joy, etc) is understood as a sort of physical
“content”, and a person, a behavior (a hug), etc. is understood as a metaphorical
container.

6. The non-prototypicality of the adjective lexeme is attested by its non-gradable
character (*interstater, *more interstate, *very interstate), and by its apparent
restriction to attributive position (interstate highway) i.e. pre-head modifier po-
sition, and its oddness or unacceptability in predicative position (*this problem
is interstate).

conditionals, a construction that she argues to arise as a metaphorical extension
from prototypical conditionals (called by her content conditionals), may, alter-
natively or as a complementary account, be explained in terms of metonymy, in
my view. The complex clause/sentence in Case Study C constitutes an instance
of the epistemic conditional construction (If you have ever driven west on Inter-
state 70 from Denver to the Continental Divide, you have seen Mount Bethel).
There is no space in this chapter to present my arguments for a metonymic ac-
count in detail. Suffice it to say that the speaker/conceptualizer takes an “epis-
temic stance” (Fillmore 1990a, 1990b) towards the causal or enabling connec-
tion between protasis and apodosis; that is, protasis and apodosis are also
implicitly connected in the epistemic domain. The highlighting of this implicit
epistemic connection in every content (or “normal”) conditional is a metonymic
source for the emergence of the epistemic conditional construction. It also
explains the freedom in verb form sequence. For details, see Barcelona (in prep.).
8. The first intransitive sense evolved historically after the transitive sense (see entries 26a and 26c of the OED), and the second intransitive sense evolved historically after the first intransitive sense (see entry 26e of the OED, which dates its first occurrence in 1926).

9. This ambiguity is virtually eliminated in this passage, in which Mary’s mention that she had gotten fat automatically tilts the scales in favor of the “slimming” sense. However, the second of the above mentioned metonymies (CATEGORY [BECOMING REDUCED IN GENERAL] FOR MEMBER [BECOMING REDUCED IN WEIGHT]) further facilitates this interpretation.

10. See OED, sense 3g of lexeme thank, v.

11. My source for the identification of these strong and weak forms in British English is Jones (1969: 131). If Mary had been an American speaker of the East or the South the stressed pronunciation would have been, according to Kenyon and Knott’s (1953) pronouncing dictionary, /'h ̻ t/ and the unstressed ones /'g̻ t/.

12. This type of modifiers are called by Payne and Huddleston (2002: 447) “appositive modifiers”, and are characterized by being integrated dependent elements in clause structure and, most importantly, by entailing a clause in which they replace the matrix NP: She sang in [the opera Carmen] entails She sang in [Carmen]. Likewise I want to borrow [book number two] entails (in the appropriate context) I want to borrow [number two]. As Huddleston and Payne note, the matrix NP in these cases is definite, because the modifier already provides identifying information; this explains why in some cases the NP may be articleless, thus behaving in this respect like the NPs consisting of a proper name (I want to borrow “Emma”).

13. The ordinal sense of the ‘number’+cardinal’ component also has a metonymic basis (Barcelona in prep.).

14. For instance, the utterance bus one was late, uttered outside a bus station and in a conversational context in which no conceptual frame includes buses or bus numbers, would be interpreted, on the basis of this metonymy alone, as an elliptical instantiation of the construction ‘NP+‘number’+cardinal’, whose more canonical instantiation would be bus number one: once the link to the canonical form is recognized, this form leads to its conventional ordinal and definite meaning as “the bus with serial number one”. Re-application of the metonymy would also lead to the full recovery of the prototypical form of the construction in an utterance like 25 is a good option, if the context is rich enough to suggest an entity which 25 could plausibly refer to. If the current discourse topic includes “interstate freeway with serial number 25” as the most likely referent, then 25 would be interpreted as a maximally reduced form of the overall construction, with the ‘cardinal’ part activating the whole form of the construction.

15. The word count has only considered as “words” the forms that can have an independent citation form, unless they are included in a conventional compound. If they are contracted with other words, they are counted separately.
That is, *armchair* is counted as one compound word, *Tyrone’s* (in *Tyrone’s arm*) is counted as one word (thus inflectional morphemes are not counted as words), and *You’re* is counted as two words, despite the contraction, since they have independent citation forms (*you, be*) and they do not constitute an established compound.

16. To save space, as a rule only overall statistics for the five case studies are offered in this section. Detailed tables with data from each case study are included in Barcelona (in prep.).

17. This somewhat surprising finding is due to the frequency of metonymy-motivated ellipses, anaphors and weak lexical forms in the dialogue analyzed in Case Study E.

18. GAS, in small capitals, is intended here to represent the conceptual reality of this salient part of the whole prototypical form GASOLINE. Both forms are connected by the PART FOR WHOLE metonymy SALIENT PART OF FORM FOR WHOLE FORM. The small-capital representation is applicable to both the spoken and the written forms. The spoken segment */gæs/ and the written segment <gas> are the most prominent segments of their respective full forms, given their initial position (in both the spoken and the written canonical forms) and given that in the spoken canonical form */gæs/ bears primary stress. To these purely formal factors we might add a semantic factor: both segments are capable of evoking the basic meaning of the lexeme more readily than such segments as */liːn/, <line>, or <lene>. Similar remarks can be made regarding the part-whole metonymic connection between *‘er* and *her*.

19. On the other hand, this list does not include all the details of the chaining of metonymies occurring in the text. In the case study, three chained metonymies motivating the sense of *‘drive* that is active in this sentence are indirectly chained (see table 1, column for Case Study C), to the inferential chain included in table 3, insofar as this sense of the lexeme *‘drive* facilitates the operation of metonymies 1 and 3 in table 3, and is facilitated by it. Moreover, the metonymy motivating the referential meaning of the phrasal name *the Continental Divide* (see 4.3.1.–above) is also indirectly linked to the metonymic chain represented in table 3. Finally, in the full version of Case Study C, I argue that metonymy motivates the epistemic conditional construction (for which Sweetser 1990 claims a metaphorical motivation) instantiated by this sentence. This epistemic reading provides essential conceptual input for the pragmatic inferences triggered or facilitated by the chaining in table 3. Therefore, a more exhaustive representation of the metonymic chaining in this sentence should also include that metonymy. Unfortunately, there is no easy way to summarize my arguments for the metonymic basis of epistemic conditionals; thus this metonymy was only briefly commented upon in any detail in 4.3.1. above.

All of these motivational metonymies provide, together with other non-metonymic elements in the sentence, some essential conceptual input for the operation of some of the metonymies (especially no. 1 and no. 11) in the list in table 3, and are mentioned together in no. 0 in that list.
20. Both interpretations are facilitated, as indicated earlier, by the words *driven on* immediately preceding and governing *Interstate 70*. These words also facilitate the setting up of the FREEWAY or HIGHWAY frame.

21. The metonymy responsible for the serial meaning of ‘NP+*number’+cardinal’ is DIGITAL MEASURING OF QUANTITY (EVENT) FOR SERIAL ORDERING (CONCOMITANT EVENT). The event of digitally measuring quantity includes, as a concomitant or built-in subdomain, the event (and notion) of serial ordering because, in the digital system, the digit that is used to express a higher quantity or amount comes *after* the digit denoting the immediately lower amount (if we count from 0 onwards). The conceptual metonymy associating the overall domain and its built-in subdomain is a WHOLE FOR PART metonymy.

22. This metonymy arises on the basis of the shared experiential knowledge of the SEEING frame. This knowledge can be formulated like this: “For viewer V to see percept P from the viewer’s vantage point VP, P must be visible to VP. The basic condition for its visibility is that P be relatively close to VP (=Interstate 70).” A RESULT FOR CONDITION metonymy, seizing upon this knowledge, seems to trigger inference 12: V SEEING P (RESULT) FOR P BEING CLOSE TO VP (CONDITION). In other words, the fact that the reader (or imaginary traveller/viewer) has seen Mount Bethel activates the condition that Mount Bethel must be close to the imaginary traveller’s vantage point on Interstate 70. That is, Mt Bethel must be relatively close to Interstate 70 for the imaginary traveller-driver-viewer to be able to see it. The hedge relatively is necessary because the mountain may be very close or actually a few miles away yet perfectly visible at a distance. All the reader can conclude at this stage of the paragraph is that Mount Bethel must be relatively close (if it is visible) to that part of the Interstate.

23. This is a CAUSE FOR EFFECT metonymy. A frequent, conventional way of announcing or introducing the actual description of an entity is to mention a perceptual experience of it. Take *I have seen Mt Bethel. It’s an interesting place. It has a perfect pyramid shape*. Or: *Have you ever met Mary Smith? Oh, she’s the most attractive girl I’ve ever met. You would fall in love with her immediately.* In both examples, the speaker first mentions to his/her addressee an imaginary perceptual experience of an entity, thus announcing the ensuing description of that entity. This conventional introduction to the act of description thus causes the expectation that the immediately following discourse units will include the actual description of the entity or event involved. In the text introduced by the sentence under analysis (see appendix), the description of a number of identifying features of Mt Bethel is actually provided later by sentences (2), (3) and (4).

24. Mt Bethel is not the ultimate destination of the imaginary journey; it is only the general location of the real destination, which is the hiking area within Mt Bethel, that is, a part of Mt Bethel. This becomes clear in sentence (5), in the text for Case Study D.

25. The *ideal TRAVEL INSTRUCTIONS* frame or ICM contains our tacit schematic knowledge of what a set of travelling instructions should consist of. It would include at least the following basic types of instructions:
A. PRELIMINARY TRAVEL INFORMATION
   1. A general geographical location and description of the destination
   2. Instructions for choosing the right general route.
   3. Instructions for choosing the right means of transport.

B. INSTRUCTIONS FOR THE CENTRAL PART OF THE JOURNEY
   1. Instructions for initiating the journey.
   2. Instructions for following the set route (which include taking into
      account important road signs, features of the area leading to the
      destination, etc.).

C. INSTRUCTIONS FOR THE FINAL PART OF THE JOURNEY
   1. Instructions for identifying destination and accessing it.
   2. Instructions for abandoning vehicle.

26. The triggering of the category PRELIMINARY TRAVEL INFORMATION by two
    instances of such instructions (location of destination and description) can be
    argued to be guided by the metonymy MEMBER SUB-SET FOR CATEGORY. A sub-
    set of the category members activates the whole category. Alternatively, two
    occurrences of MEMBER FOR CATEGORY can be claimed to jointly guide the ac-
    tivation of the category.

27. No strict sequential inferencing is advocated. Some overall inferences (e.g. the
    expectation of an upcoming description of Mt Bethel, the expectation of up-
    coming travel instructions, etc.) may well be arrived at by the reader even be-
    fore (s)he derives some of the local inferences (i.e. the lexeme- and phrase-
    level inferences discussed above). In other cases, the local inferences must be
    successfully arrived at before the overall inference is possible (e.g. inferring
    that Mt Bethel is close to Interstate freeway number 70 requires inferring that
    this freeway is the referent of the phrase Interstate 70).

28. Mary’s words “(teasingly). Oh you! You expect everyone to eat the enormous
    breakfast you do. No one else in the world could without dying of indigestion”.
    invite the implicature “Mary implies that Tyrone is a glutton”. This implicature
    is guided by the chaining of EFFECT (DYING OF INDIGESTION) FOR CAUSE
    (EATING TOO MUCH) with DEFINING PROPERTY (EATING TOO MUCH) FOR
    CATEGORY (GLUTTONS). The metaphor QUANTITY (TOO MUCH) IS SIZE (enor-
    mous) cooperates in the activation of the target of the first metonymy as EATING
    TOO MUCH. The important thing is that this target becomes the source in the
    triggered metonymy.

29. He has recently submitted an abstract to the book I am currently editing with
    Klaus Panther, Günter Radden and Linda Thornburg, with selected contribu-
    tions to our theme session on metaphor, metonymy and grammar at the 2003
    International Cognitive Linguistic Conference, and with other invited papers.
    Langacker’s abstract significantly bears the title “Metonymic grammar” (Lan-
    gacker in press), and its basic claim is that grammar is essentially metonymic,
    since explicit indicators do not normally establish the precise connections ap-
    prehended by the speaker and hearer in using an expression. They simply evoke
conceptions which merely provide mental access to elements with the potential to be connected in specific ways.

30. The rest of the stage direction is omitted because it is relevant only for the second part of the scene, when Tyrone and Mary’s children come on stage.

Notes of Table 1

i. These chained metonymies motivate the “automobile driving” sense of ‘drive’ in the text. Details are given in Barcelona (in prep.).

ii. SALIENT PROPERTY OF AN ENTITY FOR THE ENTITY (meaning of ‘interstate-noun’)

iii. RELATION FOR SALIENT SUB-RELATION (epistemic meaning of if conditional constructions).

iv. SALIENT PART OF FORM FOR WHOLE FORM (‘interstate-noun’).

v. Indirectly chained to utterance-level metonymies.

vi. SALIENT PART OF FORM FOR WHOLE FORM (‘70’ for ‘number 70’).

vii. With relevance for implied meaning of the utterance. One of them (CLUBS FOR USEFULNESS/CONVENIENCE, ETC. OF BUILDING/MAINTAINING, ETC. CLUBS) is difficult to assign to either lexeme or phrase level in this context.

viii. Both also at clause and sentence level (they operate over the whole of Mary’s one-sentence/clause utterance).

ix. All also at clause and sentence level.

x. Several of them also operating at clause or sentence level.

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The role of conceptual metonymy in meaning construction

Klaus-Uwe Panther

1. Introduction: metonymic reasoning and pragmatic inferencing

Conceptual metonymy is a cognitive process that is pervasive in grammar, the lexicon, conceptual structure, and language use. Metonyms provide what Linda Thornburg and I call natural inference schemas (see e.g. Thornburg and Panther 1997). We argue that they guide much of pragmatic reasoning in the construction of meaning, both in the determination of explicit meaning, i.e. explicature, and implicit meaning, i.e. generalized and particularized conversational implicature (see e.g. Gibbs 1994, 1999; Levinson 2000).

Many scholars working in pragmatics and Cognitive Linguistics have pointed out that the mental processes involved in drawing inferences about intended meanings are usually spontaneous and automatic (see e.g. Lakoff 1987; Fauconnier and Turner 2002; Sperber and Wilson 2002). It is implausible that the comprehension of speaker meaning should be driven by conscious reasoning because that would make linguistic communication intolerably slow. Human beings must, at some subpersonal level, be geared towards recognizing the inferential pathways (which I believe are largely metonymic) and apply them at “lightning speed” (Barcelona 2003). Such metonymic pathways are part of the cognitive competence of normal speakers and hearers and are readily accessible in particular linguistic and extra-linguistic contexts. Given the largely subconscious nature of pragmatic inferencing, it does not make much sense to draw a clear-cut distinction between inferencing, on the one hand, and what is called spreading activation, on the other, unless one wants to reserve the term ‘inferencing’ exclusively for deliberate conscious reasoning.

One may ask at this point why there should be any inferentially driven meanings at all. One plausible answer is that the “bottleneck” problem in linguistic communication has to be solved: The phonetic articulators are relatively slow in encoding information – about 7 syllables or 18 segments per second – conveying less than 100 bits per second of information (Lev-
Levinson proposes that, from the speaker’s perspective, the solution to the bottleneck problem is to encode only the strict (but sufficient) minimum of information and leave the recovery of the full richness of intended meaning (including “default” meaning) to inferencing abilities of the hearer. To quote Levinson (2000: 29): “[…] inference is cheap, articulation expensive, and thus the design requirements are for a system that maximizes inference”.

In modern pragmatic theories inferential meanings are accounted for by a restricted set of maxims or principles. For example, Levinson (1995, 2000) assumes that there are three abstract heuristics – quantity (Q), informativeness (I), and manner (M) – that hearers apply in figuring out default meanings (generalized conversational implicatures). Horn (1984) reduces the Gricean maxims to two: Quantity (“say as much as you can”) and Relevance (“do not say more than you must”); and relevance theorists (e.g. Sperber and Wilson 1995, 2002) propose a single principle of relevance that is assumed to guide the hearers sufficiently in their efforts in “mind-reading”. Although the development of general inference guiding principles is certainly a desirable goal, there is a price to pay: When it comes to describing individual data, especially relevance theorists tend to resort to very detailed descriptions of how the pragmatic meaning of individual examples comes about – thus, in a way, belying their own highly abstract and generic principles of utterance interpretation.

Among the few generative linguists who have concerned themselves with conceptual structure, Jackendoff (1991, 2002) is, to my knowledge, the only one who integrates inferential rules into the semantic (conceptual) component. Jackendoff recognizes the need for postulating more concrete, metonymically based inference rules. Consider, for example, how he analyzes the well-known “ham sandwich” metonymy:

(1) The ham sandwich over in the corner wants more coffee.

Jackendoff (2002: 387–390) proposes an analysis of “enriched composition” for (1) with the reading ‘The person over in the corner contextually associated with a ham sandwich wants more coffee’. Figure 1 provides a more formal representation.
Jackendoff is on the right track in assuming that the identification of the intended referent of the definite description in (1) involves what is here called a metonymic inference. But the inferential principle he proposes – OBJECT FOR PERSON ASSOCIATED WITH OBJECT – overgenerates, leading to many unlikely or even infelicitous metonymies. For example, the referents of *the pencil*, *the breadcrumb*, or *the lap top* can all be objects “associated” with people in some way, but it is unlikely that they are used as metonymic expressions for referring to persons. Jackendoff’s example thus illustrates the difficulty any theory of inferential meaning faces: to constrain the set of inferential principles in such a way that overgeneralizations of the above kind are avoided.

The lack of specificity of inferential rules is even a greater problem for modern Gricean pragmatics and relevance theory. It is hard to imagine how abstract meta-principles based on Gricean maxims or, even more radically, on a unique principle of relevance could account for how interlocutors actually proceed in inferring utterance meanings. I find it more plausible to assume the existence of an intermediate level of reasoning, with schemata that are, on the one hand, abstract enough to cover a wide range of cases, and that have, on the other hand, enough specific conceptual content to serve as guideposts in utterance interpretation. I advance the hypothesis that conceptual metonymies such as PART-WHOLE, CAUSE-EFFECT, PERSON-ROLE, REPRESENTATION-REPRESENTED – which have been dubbed vital relations by Fauconnier and Turner (2002: 92–93) – meet the requirement
of being both abstract and specific enough to guide actual reasoning to the most plausible interpretation. I regard such metonymic relations as *multipurpose conceptual devices* not restricted to language but used in other semiotic systems and thought as well.

This chapter is organized as follows: in section 2, I introduce the basic metonymic relation arguing that metonymy is a process of meaning elaboration, i.e. expansion of a given source content into a more elaborate target content that *contains* the source content as one of its conceptual components. In section 3, I propose that metonymic relations are contingent, i.e. in principle defeasible, although the linguistic and extralinguistic context may enforce a metonymic interpretation. The assumption that metonymy is contingent is necessary to distinguish it from semantic relations like entailment. In section 4, I introduce three pragmatic types of metonymy: referential, predicational, and illocutionary. Section 5 presents evidence for the claim that in a prototypical metonymy the target content is conceptually more prominent that the source content. In section 6, I propose that metonymies form hierarchical systems and I present an example that illustrates this idea. Section 7 contains a brief summary and some conclusions.

### 2. The basic metonymic relation

Metonymy is often characterized as a ‘stand for’ relation (see e.g. Lakoff and Johnson 1980), a reflection of which is that metonymies are usually represented by the schema X FOR Y, where X represents the *source* meaning (also called ‘vehicle’) and Y symbolizes the *target* meaning of the metonymic operation. This “substitution” view of metonymy leads easily to the (erroneous) assumption that metonymy and pragmatic implicature are very different in kind. An implicature is usually regarded as content that is *added* to what is said/explicitly conveyed. For example, in many contexts an expression such as *widespread belief* might trigger the implicature that the content of the belief is dubious, as in example (2):

(2) It is a widespread belief that linguists speak many languages +>
   ‘Linguists often do not speak many languages’
   [‘+’ symbolizes the implicature relation]

But things are not so clear. Levinson (2000) argues for the existence of a “heuristic” (similar to a Gricean maxim) “What is expressed simply is
stereotypically exemplified”, which accounts for *I-implicatures* such as in (3)-(5) (adapted from Levinson 2000: 37):

(3) John’s book is good. $\Rightarrow$ ‘The book John read, wrote, borrowed, … is good’
(4) a secretary $\Rightarrow$ ‘a female secretary’
(5) a road $\Rightarrow$ ‘a hard-surfaced road’

Depending on one’s perspective, one could argue – in accordance with traditional conceptions of metonymy – that e.g. in (4) the meaning ‘female secretary’ is substituted for the source meaning of *secretary*; but one could also maintain that the meaning ‘female’ is added as a conceptual modifier to the meaning of *secretary*. I argue below that the crucial criterion for metonymy is not ‘addition’ or ‘substitution’ but the degree of conceptual prominence of the target meaning.

There is however also a tradition in linguistics that equates implicature with metonymically induced implication or that regards metonymy as a subtype of implicature. For example, in their introductory textbook to grammaticalization theory, Hopper and Traugott (1993), who dedicate a whole chapter (ch. 4) to the significance of pragmatic inferencing in the emergence of grammatical meanings from lexical meanings, do not make a clear distinction between metonymic reasoning and conversational implicature.

In recent work it has been claimed that metonymy should not be viewed as a mere substitution relation. The research in Barcelona (2000), Dirven and Pörings (2002), Lakoff (1987), Langacker (2000), Panther and Radden (1999), Panther and Thornburg (2003), and Radden and Kövecses (1999) has shown that metonymy is better understood as a “reference point” (a vehicle or source) that triggers a target meaning. Francisco Ruiz de Mendoza and his collaborators at the University of La Rioja regard metonymy as a process that involves either the *expansion* or *reduction* of a cognitive domain (matrix) (see e.g. Ruiz de Mendoza and Pérez 2003; Ruiz de Mendoza and Diez 2004). This body of research emphasizes the conceptual nature of metonymy and is indeed an important step forward from the simplistic view of metonymy as a mere rhetorical trope to the insight that metonymy is a ubiquitous mental operation.

The basic metonymic relation that I propose can be diagrammed as in Figure 2:
In a **linguistically manifest** metonymic relation, a *source meaning* is related to a *target meaning* by means of a linguistic form (e.g. morpheme, word, phrase, sentence) that I call the *linguistic vehicle.* The larger ellipse in Figure 2 represents the generally accepted assumption that the metonymic mapping takes place within *one cognitive domain* or *Idealized Cognitive Model* (ICM). Figure 2 also indicates that the source meaning is not obliterated by the target meaning, but still conceptually present (“salient”) or activated. It also represents the idea that the target meaning is an elaboration of the source meaning, with the source meaning being one conceptual component of the target meaning (see below). Figure 2 does not indicate how *stable* or *conventional* the target meaning is. Indeed, the target meaning can be just a *nonce* sense, created on the spot, but it can also, through frequency of use, become a conventionalized meaning, stored separately in the mental lexicon. A result of this conventionalization of a metonymic target meaning is of course polysemy.

In what follows I will argue that metonymy is a cognitive operation of meaning *elaboration,* i.e. an expansion of source meaning into a more complex conceptual structure of which the source meaning is part. This hypothesis is at odds with some other approaches to metonymy and also with my own previous work. Some scholars hold that many metonymic processes link one component in a cognitive frame to another component in
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the same frame (see e.g. Barcelona 2003; Panther and Thornburg 1998, 2003a, 2003b; Thornburg and Panther 1997). In my view, such PART FOR PART mappings can be reformulated as cases of source meaning elaboration. Furthermore, it might be possible to reduce the two metonymic operations assumed by Ruiz de Mendoza and his collaborators (e.g. recently Ruiz de Mendoza and Pérez 2003), viz. domain expansion and domain reduction, to just one: source meaning elaboration.

In this respect, it is revealing to look at the way a metonymy is often paraphrased in natural language. Generally, the source content seems to be “contained” in the target content. Containment does not necessarily mean ‘meaning inclusion’ (although this is a possibility) but refers to the source meaning as a conceptual component of some more elaborate conceptual structure. A frequent schema for metonymic paraphrases that syntactically reflects this conceptual structure is the following:

(6) \[ \text{TARGET} \ldots \text{[SOURCE \ldots]} \ldots \]

Some common referential metonymies illustrating the schema given in (6) are:

(7)

a. Here comes the Ferrari.
   \[ \text{TARGET the person [who drives [SOURCE the Ferrari]]} \]

b. Paco likes Mozart.
   \[ \text{TARGET the music [that [SOURCE Mozart] composed]} \]

c. The Vatican has confirmed the visit of the president.
   \[ \text{TARGET the person [who is authorized to speak for [SOURCE the Vatican]]} \]

My approach also differs from Croft (1993: 348), who defines metonymy as a process of domain highlighting “since the metonymy makes primary a domain that is secondary in the literal meaning”. According to this view, in the utterance

(8) The Times hasn’t arrived yet.

the noun phrase *The Times* metonymically highlights a subdomain of the semantic frame it evokes – e.g. a journalist writing for the newspaper – which is usually only secondary. I argue that the metonymic process works differently. To illustrate, in (8) the linguistic vehicle *The Times* is a “refer-
ence point” in Ronald Langacker’s terminology. The linguistic context of the vehicle coerces a target sense ‘human being’; the extra-linguistic context of a press conference, together with the higher-level metonymy CORPORATION FOR EMPLOYEE and the sub-metonymy NEWSPAPER (COMPANY) FOR JOURNALIST converge to select the elaborated target meaning ‘journalist writing for The Times’. Accordingly, it is not necessary to assume that a whole frame or ICM is evoked before any highlighting of a subdomain can take place – in the example above, other components of the ICM such as EDITOR, PUBLISHER, ADVERTISING DEPARTMENT, PRINTER, etc. are irrelevant. Moreover, in terms of processing effort, it seems rather implausible that a whole domain is evoked before a part is then highlighted.

I see two advantages in regarding metonymy as a process of (source) meaning elaboration: First, this view acknowledges the dynamic and flexible nature of online meaning construction: A pre-existing frame need not be evoked as a whole in all circumstances but only those subframes that are required for identifying the target meaning in a given context. Second, as pointed out above, the processing effort required for identifying target meanings is reduced if the whole frame does not have to be accessed.9

3. The contingent nature of the metonymic relation

Above I referred to the idea that conceptual metonymy is a “reference-point” phenomenon (Langacker 1993, 2000) where one conceptual entity provides access to another conceptual entity. This characterization – useful as it is – unfortunately overgeneralizes, i.e., it covers cases that should not be treated as metonymy. Sentences (9) and (10) illustrate the problem:

(9) The piano is in a bad mood.
(10) The loss of my wallet put me in a bad mood.

In sentence (9) the subject noun phrase the piano has the standard metonymic interpretation ‘the musician playing the piano’, with the meaning of piano providing mental access to the concept of piano player. Analogously, one could claim that in sentence (10), the sense of the loss of my wallet provides access to the concept of ‘non-possession (of the wallet)’. Are we therefore entitled to conclude that the relation between the concept of loss and that of non-possession is a metonymic relationship, just as the relation between the concept of piano and that of piano player is me-
tonymic? Intuitively, the answer seems ‘no’; and in fact, there is an important difference between the two cases. In sentence (10) the relationship between ‘loss’ and ‘non-possession’ is conceptually necessary, i.e., the proposition presupposed by the referring expression the loss of my wallet, viz. ‘I lost my wallet at time t’, entails ‘I did not have my wallet for some time period beginning at time t’. In contrast, in sentence (9), the relationship between the piano and the piano player is contingent; the presupposition ‘There is a (contextually unique) piano’ does not entail ‘There is a piano player’. In other words, there is no metonymy LOSS FOR NON-POSSESSION, but there is an often exploited metonymy MUSICAL INSTRUMENT FOR MUSICIAN, a submetonymy of OBJECT FOR USER.

The attribute of contingency that I claim characterizes metonymy is reminiscent of the property of defeasibility or cancelability of two well-known pragmatic implications, explicature and implicature. ‘Defeasibility’ and ‘contingence’ are however not necessarily synonymous: a relation between concepts may be contingent, i.e. conceptually non-necessary, but in a given linguistic and/or communicative context the target meaning may still be uncancelable. This is evident in sentence (9) where the meaning ‘piano player’ for piano does not seem to be defeasible in the given context.

There are other examples of non-cancelable metonymies – in particular, cases in which (i) grammatical construction meaning coerces lexical meaning and (ii) conversely, where lexical meaning coerces construction meaning. Still, in these cases the relation between source content and target content is contingent. These types are illustrated in sections 3.1 and 3.2 below, respectively.

3.1. Constructionally coerced metonymies

I will now demonstrate how the meaning of a grammatical construction can coerce, i.e. enforce, a metonymic interpretation of a lexical expression. I illustrate this point with action constructions, viz. the imperative constructions and constructions of the form How about VP and What about VP-ing. These constructions (see Panther and Thornburg 1999a, 2000; Ruiz de Mendoza and Pérez 2001) usually require an action predicate as in (11) and (12):

(11) Leave the country before it is too late.
(12) What about traveling to Morocco this spring?
However, there are also naturally sounding utterances like (13) that contain a *stative* predicate:

(13) Be wealthy in ten months.

One should normally not expect to find a stative predicate like *be wealthy* in an imperative construction. Nevertheless, sentence (13) receives an action interpretation, which can roughly be paraphrased as ‘Do something to the effect so that you will be wealthy in ten months’. The basic meaning of the imperative construction seems to be responsible for the reinterpretation of the stative predication as an action. This phenomenon is known as *coercion* (Pustejovsky 1993) or *semantic shift*, which Leonard Talmy (2000: 324) defines as follows: “When the specifications of two forms in a sentence are in conflict, one kind of reconciliation is for the specification of one of the forms to change so as to come into accord with the other form”. In sentence (13) it is the specification (meaning) of *(be) wealthy* that changes to accord with the specification (meaning) of the imperative construction. This situation is diagrammed in Figure 3. The condition that a state can be viewed as being brought about intentionally is not represented in Figure 3.

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**Figure 3.** Metonymic coercion of lexical meaning

- **CM:** Construction Meaning
- **LM:** Lexical Meaning
  - : metonymic relation
  - : coercion
In cases like (13), the action interpretation is enforced, which seems, at first sight, to undermine my contention that metonymy is a contingent, i.e. in principle, defeasible, relation. But a closer look at sentence (13) reveals that the relation between a state and the action leading to that state is not conceptually necessary – any number of actions can lead to the same resultant state. One cannot – strictly speaking – logically infer “backwards” from a state to processes or actions that result in the state. That is, there is not a relation of entailment between ‘x is a state’ and ‘y is the action that leads to state x’. But one can make “reasonable” guesses; for example, in the case of Be wealthy in ten months one can think of a variety of actions (audacious investments, purchase of shares, etc.) that might lead to the desired result of being wealthy.10

The relation between source and target is contingent – it is in principle, though not always de facto, defeasible. The context may however constitute an efficient barrier to cancellation. Interestingly, this property also applies to implicatures: the linguistic or non-linguistic context may enforce/coerce certain implicated interpretations:

(14)  a. Many of my students were well prepared; in fact, all of them were.
    b. Many of my students were well prepared, but some of them weren’t.

The first clause in (14) implicates ‘Not all of my students were well-prepared’. This implicatum is canceled in (14a), but it is “coerced” in (14b) because of the context provided by the second clause.

3.2. Lexically coerced metonymies

One might be tempted to think that metonymic coercion always goes from grammatical meaning to lexical meaning as diagrammed in Figure 3. It would be nice if one could establish such unidirectionality of the coercion process. The notion of unidirectionality seems to be at least implicitly assumed in construction grammar. Constructions are assumed to have meaning and lexical items inserted in a construction do not necessarily have to fit the construction meaning “perfectly” but may, under certain circumstances, be coerced into a meaning determined by the construction meaning (see Goldberg 1995). But it is not impossible to imagine that lexi-
ical meaning might also “nibble at” constructional meaning and change it metonymically. To see this, consider (15):

(15) Enjoy your summer vacation!

One reading of (15) has the force of a **directive** speech act with an ‘action’ interpretation such as ‘Do something to the effect so that (as a result) you enjoy your summer vacation’. There might be folk models of the concept **enjoyment** that regard it as an experiential state that can be intentionally caused. Such an interpretation would be completely analogous to the one in (13), involving the **result for action** metonymy. But there is also a folk model that does not regard enjoyment as a state that can be intentionally brought about, but rather as something that one experiences spontaneously. On the basis of this folk model, (15) would receive an **optative** interpretation with the meaning ‘S (=speaker) expresses the hope/wish that H (=hearer) will enjoy her summer vacation’. In this situation, the meaning attributed to **enjoy** – ‘spontaneously occurring experiential state’ – leads to a **shift in construction meaning**: The speech act component ‘H will do A’ (‘future action’ meaning) is discarded because it is incompatible with the mental state meaning of **enjoy**; only the compatible ‘wish/hope’ meaning remains, i.e., ‘S hopes that H will be in mental state s (enjoyment)’. Note that ‘wish’ is also a speech act component of prototypical imperatives, in which the speaker’s wish is directed towards a future action of the hearer. Since the ‘future action’ component has to be discarded, only the speaker’s hope remains that **some** future state-of-affairs will come true, in which the hearer is a participant. The metonymic and coercive processes involved in (15) are set out in Figure 4.
An alternative approach to sentence (15) – more in line with construction grammar (Goldberg 1995) – would assume that the imperative construction itself is polysemous and that the optative interpretation of (15) is inherent in the construction; in this view enjoy simply fits the constructional meaning and can readily be inserted in the construction. Such an approach has the advantage of not having to abandon the unidirectionality hypothesis that coercion always works from constructional meaning to lexical meaning, but it has the disadvantage of proliferating meanings in individual constructions.

Be that as it may, the main point with regard to my topic here is that the metonymic relation between the speech act concept DIRECTIVE and the mental concept WISH is not conceptually necessary, but contingent, i.e., to repeat, in principle defeasible.

4. Pragmatic types of metonymy: referential, predicational, and illocutionary

In this section, I would like to turn to the question of how many types of metonymy there are. I view the question from a pragmatic angle. The starting-point is the often-heard claim that metonymies are typically a phenomenon of referential shift, i.e., in speech act terms, they are intimately
tied to the referential act.\textsuperscript{11} A typical example of a referential metonymy would be:

\begin{enumerate}
\item General Motors is on strike.
\end{enumerate}

In (16) the company name \textit{General Motors} is used to refer to the automobile workers who walk out of the work place.

One can however find metonyms in other than referential functions. Here I will briefly mention two additional pragmatic types, \textit{predicational metonymy} and \textit{speech act or illocutionary metonymy}, and argue for treating them as genuine metonyms.\textsuperscript{12} An example of a predicational metonymy is:

\begin{enumerate}
\item General Motors had to stop production.
\end{enumerate}

In (17) the necessity or obligation to stop production evokes the actual occurrence of the event of stopping production (OBLIGATION TO ACT FOR ACTION).\textsuperscript{13} The inference involved is an instance of a high-level metonymic principle that is very common in English and other languages, especially when the modality is in the past: A potential event (e.g. the ability, possibility, permission, obligation to undertake an action) is metonymically linked to its occurrence in reality.\textsuperscript{14} Sentence (17) also illustrates a propositional metonymy because both the referring expression \textit{General Motors} (‘the executive officers of GM’) and the predicating expression \textit{had to stop production} (‘stopped production’) undergo a metonymic shift. Note again that these shifts in reference and predication are not conceptually necessary but contingent (i.e. in principle, cancelable).

Finally, I also assume the existence of \textit{illocutionary metonymies}. The well-known phenomenon of indirect speech acts can be accounted for on a metonymic basis:

\begin{enumerate}
\item I would like you to close the window.
\end{enumerate}

In utterance (18) the expression of the wish of the speaker with regard to the action to be carried out by the addressee (signaled by \textit{would like you to}) metonymically evokes the request to close the window itself (see Gibbs 1994, 1999; Panther and Thornburg 1998, 2003b; Ruiz de Mendoza and Pérez 2001, 2003; Thornburg and Panther 1997). The basic idea is that an attribute of a speech act can stand for the speech act itself in the same way that an attribute of a person can stand for the person. Figure 5 provides a
schematized representation of how utterances of type (18) might activate the illocutionary force of a directive, e.g. a request. Note that this example shows that propositional forms can be linked metonymically.

Still, one might doubt that what I call referential metonymies, predicational metonymies, and illocutionary metonymies are really of the same type. My contention that the relations in (16) between General Motors and ‘the workers employed by General Motors’, on the one hand, and that in (17) between had to stop production and ‘(actually) stopped production’, on the other hand, are of the same kind, viz. metonymic, may seem surprising. One might object that the target meaning of (17) is “really” an implicature that comes about through pragmatic strengthening of the proposition expressed in it.

My answer to this objection is: first, a metonymic analysis does not preclude a pragmatic analysis in terms of conversational implicature. On the contrary, I assume that conversational implicatures, or more generally, pragmatic inferences, are often guided by preexisting metonymic principles. Second, the same metonymy can be triggered predicationally and
referentially. For example, the **OBLIGATION TO ACT FOR ACTION metonymy** is not only operative on predicational vehicles but can also be triggered by the nominalized (referential) counterpart of the predicate in (17), viz. the italicized noun phrase in (19):

(19) *General Motor’s obligation to stop production* had a devastating effect on the economy.

Utterance (19) very strongly suggests that General Motors actually *did* stop production. The target meaning of the referring expression in (19) can thus be paraphrased as ‘the fact that General Motors stopped production’. And it seems that the predicate *had a devastating effect on the economy* is interpreted as the consequence of the actual stopping of production, rather than just of the obligation to stop it.

Third, even illocutionary metonymies find their analogues in referential positions. Sentence (20) below, which may trigger the target meaning ‘I *offer* to lend you my car’, is paralleled by a referential metonymy triggered by the nominalized expression in sentence (21):

(20) I am willing to lend you my car.
(21) *My willingness to lend you my car* surprised everybody.

The referential noun phrase in (21) lends itself quite readily to the (defeasible) target meaning ‘my *offer* to lend you my car’. Thus, there does not seem to be any reason to treat the inference that can be drawn from the content of the referential subject noun phrase differently from the target meaning of well known uncontroversial metonymies in utterances like *Table Four wants another Chardonnay*, where *Table Four* stands for ‘the customer sitting at Table Four’.

5. **Conceptual prominence of the metonymic target**

5.1. The notion of conceptual prominence

As pointed out above, the traditional definition of metonymy as a substitution relation has been rightly criticized by cognitive linguists (see Radden and Kövecses 1999) and instead a view of metonymy as a reference-point phenomenon has been suggested, which is a step forward, but has its own problems in being too general. My view is that typical metonymies involve
what I call *conceptual prominence* of the target. To see how this works, consider utterance (22):

(22) General Motors had to stop production on Monday but they resumed it on Thursday.

The *but*-clause in (22) makes pragmatic sense only if the clause *General Motors had to stop production on Monday* has the prominent metonymically derived reading ‘General Motors *stopped* production on Monday’. The source meaning of the first clause in (22) (the ‘obligation’ sense) is certainly active, but the *relevant* sense is the target meaning, because it is only against the ‘factuality’ sense of the first clause that the second clause can be interpreted in a reasonable way.

Also consider sentence (23) from a newspaper article, whose metonymic structure is sketched in Figure 6:

(23) *North Korea’s willingness to publicly flout its international commitments* suggests it is trying to force itself onto Washington’s agenda to win an oft-stated goal: talks with its longtime foe about a nonaggression treaty. (*The Southern Illinoisan*, 26 December 2002)
From the context it is clear that the writer of example (23) intends to convey the idea that North Korea is not only willing to flout its international commitments, but that it actually flouts them. In other words, we have a highly productive metonymically induced inferential principle here: WILLINGNESS TO ACT FOR (ACTUAL) ACTION. Moreover, despite the high degree of activation or salience of the source meaning, the target meaning seems to be conceptually more important and relevant than the source meaning. What the whole newspaper article is about is not so much what North Korea is willing to do as to what it has already done and will do in terms of nuclear weapons development.

To summarize, I contend that in a prototypical metonymy the target meaning is more prominent than the source meaning, although the source meaning must of course have a sufficient degree of salience in the context of the utterance in order to be able to activate the target. The raison d’être of metonymy is to make the target not only accessible, as suggested by the reference-point theory of metonymy, but, just as importantly, to make it available for the ensuing discourse. As can be seen in example (23) above, the assumption (metonymic target) that North Korea has already developed or will develop the nuclear weapons is the starting-point of future debates about what can be done about this dangerous situation.

If it is the case that the relatively greater conceptual prominence of the target meaning is a feature of prototypical metonymies, the traditional view
of metonymy as a ‘stand-for’, i.e. a substitution relation, is the borderline case where the target meaning has become maximally prominent. When this happens, there is no metonymic relation anymore, because the source meaning has simply been supplanted by the target meaning.

The property of conceptual prominence postulated here for prototypical conceptual metonymies seems to be related to what Erteschik-Shir (1979: 443) calls dominance (of a syntactic constituent) in a different context. A constituent is called dominant in an utterance if and only if the speaker intends to direct the attention of the hearer to the conceptual content of the constituent. The dominant constituent becomes “the natural candidate for the topic of further conversation”. A procedure for testing dominance is the reaction of a speaker B to the sentence uttered by a speaker A. B responds by a sentence in which the dominant constituent X is assigned a truth, a probability, or an interest value as in example (24):

(24)  A: John said that Mary kissed Bill.
     B: That’s a lie, she didn’t (kiss Bill).

Speaker B’s reaction to speaker A’s utterance typically relates to the truth-value of the embedded proposition that Mary kissed Bill; in other words, the complement clause is the object of speaker B’s judgment, not the matrix clause. In the metonymic framework adopted here, B’s reaction to A’s utterance is guided by the metonymy ATTRIBUTED ASSERTION FOR ASSERTION, i.e. the proposition asserted by John is treated as if it had been asserted by speaker A. The interesting point about such examples as (24) is that a metonymically implied concept is conceptually more prominent than its explicitly expressed source concept.

5.2. Non-prominence of target

In light of what I have said about the conceptual prominence of the target in prototypical metonymies, it seems that some cases that have been adduced as typical examples of metonymy are not such good examples after all. Consider the hoary

(25)  Nixon bombed Hanoi. (Lakoff and Johnson 1980: 38)

which is usually analyzed as exemplifying the metonymy CONTROLLER FOR CONTROLLED. As Lakoff and Johnson (1980: 39) point out, Nixon
himself did not drop the bombs on Hanoi, but he was ultimately responsible for this military action. In other words, the referent designated by the source meaning is the ultimate causer of the action. However, it is not the rather indeterminate target meaning that is conceptually prominent, but the source meaning itself (see Figure 7):

This situation is however quite different from the metonymic relation in (26):

(26) The sax has the flu today. (Lakoff and Johnson 1980: 38)

which is represented in Figure 8.
In (26) what is conceptually prominent is the target meaning, not the source meaning. Sentence (26) is about a saxophone player, not about a saxophone. In contrast, sentence (27) is really about Nixon, and not about the pilots that bomb Hanoi. This intuition is confirmed by coreference facts that were already pointed out by Stallard (1993). It is quite natural (and cynical) to say:

(27) In the morning, Nixon bombed Hanoi; at noon he (= Nixon) had lunch with aides. (Topic: Nixon himself)

In contrast, (28) where they is supposed to refer to the target is rather odd:

(28) ?#In the morning, Nixon bombed Hanoi; at noon they (= the pilots) were on some other mission.

The situation is reversed in the case where the target meaning is conceptually prominent:

(29) The sax has the flu today and she (= the saxophone player) will not be able to play tonight. (Topic: the saxophone player)
(30) ?#The sax has the flu today but it (= the instrument) needs repair anyway.

In (29) she in the second clause refers to the target of the sax in the first clause; there is topic continuity. The whole sentence is about the saxophone player, not the saxophone. Sentence (30) is however rather disruptive because in the first clause the target ‘the saxophone player’ is talked about but in the second clause there is a sudden referential shift to the instrument.

I conclude that the OBJECT USED FOR USER (or more specifically, INSTRUMENT FOR MUSICIAN) metonymy is a prototypical metonymy because it makes the target conceptually more prominent than the source whereas the ULTIMATE CAUSER FOR IMMEDIATE CAUSER is a more peripheral metonymic relation because the source is conceptually more prominent than the target.

Ruiz de Mendoza and Díez (2004) explain these coreference phenomena in terms of the relative scope of cognitive domains (source and target). Their Domain Availability Principle postulates that it is always the matrix domain, i.e. the most-inclusive domain that determines the properties of metonymic anaphoric reference. In their terminology, in (27) the source domain constituted by Nixon includes the ‘US Air Force’ domain and the
anaphor to be used is therefore *he*. In (29), the target domain ‘the saxophone player’ is assumed to be more inclusive than the source domain that is literally designated by *the sax*, and again the most natural pronoun choice is *she* (or *he* as the case may be).

The account proposed here, which, as the reader will recall, rests on a view of metonymy as meaning elaboration, makes a different claim: The source *Nixon* is elaborated (expanded) into ‘the US Air Force pilots, whose commander-in-chief is Nixon’. The coreference properties of sentence (27) are then attributed to the fact that Nixon, as the ultimately responsible person, is conceptually more prominent than the rather indeterminate group of pilots who actually launched the bombs on Hanoi.

5.3. The locus of metonymy

What I have said so far about conceptual prominence, coreference, and topicality may also shed light on the problem of identifying the *locus* of a conceptual metonymy:

(31) The president was brief (about this issue).

Let us first consider the possibility that (31) is a predicational metonymy, where the manner of speaking (*brief*) stands for the speech event itself (see Figure 9):

*Form:*  
*Content:*

![Figure 9. Predicational metonymy analysis of The president was brief](image-url)
However, there is also the possibility that the subject term is metonymically interpreted, i.e. that (31) exemplifies a referential metonymy, as diagrammed in Figure 10:

![Diagram of referential metonymy](image1.png)

**Figure 10. 'Referential metonymy' analysis of The president was brief**

The reading of (31) would thus be that the speech given by the president was brief.

Now, is there any way of deciding between these two competing analyses? I think there is. In English, the evidence speaks for an analysis in terms of Figure 9, i.e. for a predicational metonymy. To see this, let us first test the ‘referential metonymy’ hypothesis, i.e. assume that the metonymic target meaning of president is ‘president’s speech’. Now consider the following coreference facts:

(32) #The president→i was brief and Øi did not contain any interesting thoughts.  
**Intended reading:** ‘The president’s speech was brief and did not contain any interesting thoughts’

(33) #The president→i was brief but iti contained a number of interesting thoughts.  
**Intended reading:** ‘The president’s speech was brief but it contained a number of interesting thoughts’

If the president in (32) and (33) has the metonymic reading ‘the president’s speech’, one would expect the zero anaphor in (32) and the pronoun in (33)
to be coreferential with the president’s speech. However, there is clearly a break in coherence in both (32) and (33) between the first clause (interpreted as referring to the target ‘president’s speech’) and the second clause where something is said about that target. This seriously undermines the interpretation of (31) as a case of (prototypical) referential metonymy, at least if one assumes that the target is the prominent conceptual entity – in accordance with my definition of prototypical metonymy – and the topic in the ensuing discourse.

Let us now examine the possibility that the metonymy in (31) is predicational, as diagrammed in Figure 9 above (same subscripts denote reference identity as before):

(34) The president was brief about the issue of tax cuts and Øi left the meeting.
   ‘The president spoke briefly about the issue of tax cuts and left the meeting’

(35) The president was brief about the issue of tax cuts because he had a lunch appointment.
   ‘The president spoke briefly about the issue of tax cuts because he had a lunch appointment’

In this case, by hypothesis, there is no referential shift from the president to ‘the president’s speech’; the metonymic shift occurs in the predicate: was brief about NP is metonymically interpreted as ‘spoke briefly about NP’. Both (34) and (35) are completely natural with a non-metonymic interpretation of the president. I conclude that in a sentence of the type The president was brief about NP, the human referent of the subject – the president – is not metonymic. As a consequence, the zero anaphor in (34) and the pronoun he in (35) are coreferential with the “literal” referent of the president.22

The predicational metonymy analysis is further supported by the fact that brief can be modified by a manner adverb denoting ‘intention’. An adverb such as deliberately normally modifies an action verb that requires a rational agent as its subject argument. This fact points to a ‘linguistic action’ reading of the metonymic vehicle brief, viz. ‘speak briefly’, as in (36):

(36) The president was deliberately brief about the issue of tax cuts because he had a lunch appointment.
Finally, there are coordination facts that speak in favor of a predicational metonymy analysis for (31), as in (37):

(37) The chancellor was [brief about the tax cut] but [spoke for hours about health reform].

Normally only constituents of the same syntactic and preferably the same semantic type are coordinated. If it is assumed that the target of brief is an action concept, then the syntactic and semantic requirements for coordinating the two verb phrases in (37) are satisfied.

To summarize, considerations of topicality, coreference restrictions and coordination constraints support an analysis where the adjectival predicate in (31) is selected as the locus of metonymic elaboration. What is conceptually prominent here is that the president spoke briefly; this target meaning is triggered by the predicate was brief about NP rather than the referential subject the president.

5.4. Target-motivated agreement

In this section, I briefly touch on some grammatical reflexes that the prominent target of a prototypical metonymic relation may exhibit (see also sections 3.1 and 3.2 above). In Panther and Thornburg (1999b), the very productive metonymy POTENTIALITY FOR ACTUALITY is discussed, a subtype of which is the ABILITY FOR ACCOMPLISHMENT/ACHIEVEMENT metonymy exemplified in sentences like (38) and (39):

(38) Brazil was able win the world championship for the third time.
(39) Martha was able to write her thesis in two years.

Sentences (38) and (39) implicate very strongly that Brazil won the world championship for the third time and that Martha wrote her thesis in two years, respectively. These target meanings are conceptually prominent. A simple Google search of was able to retrieved authentic texts illustrating the same metonymy:

(40) Once I started following the modified diet (consisting of low carbs and zerowhite bread/flour) I was able to exercise with the same intensity I did when I was eating a normal (unhealthy) diet. (www.bigvick.com/weight.htm)
(41) In his earlier incarnation he was able to veil his power (as Gandalf did) and could appear as a commanding figure of great strength of body...

In (40), the expression *I was able to exercise with the same intensity* has the (prominent) target meaning ‘I (actually) exercised with the same intensity’ and, interestingly, it is this target reading that the pro-verb *did* in the ensuing subordinate clause refers back to. Likewise, in (41) the metonymic reading of *he was able to veil his power* is ‘he veiled his power’, and it is this target sense that the ensuing *did* refers back to.

According to prescriptive grammar, it should be possible if not mandatory to use a verb that formally agrees with the linguistic vehicle/source meaning, i.e. *was* in (42) and (43), respectively. However, this substitution produces questionable results, indicating that metonymically induced conceptual agreement supersedes formal agreement in these cases.

(42) 'Once I started following the modifier diet... I was able to exercise with the same intensity I was when I was eating a normal (unhealthy) diet.

(43) 'In his earlier incarnation he was able to veil his power (as Gandalf was) and could appear as a commanding figure of great strength of body...

To summarize, the target meaning of a prototypical metonymy can have an impact on grammatical properties such as pronominal choice and agreement.

6. Metonymic systems

Metonymies, just like metaphors, are not just phenomena that occur in isolation with no relation to other metonymies, but are structured in systems. Not much is known about the internal structure of such systems except that one organizing principle seems to be taxonomic, i.e. from more generic (higher-level) to more specific (lower-level) metonymies. In Figure 10, following Panther and Thornburg (in press) a three-layered taxonomy for the high-level metonymy *EFFECT FOR CAUSE* is proposed with illustrative examples for each metonymy on the lowest level. The metonymies on the right are in a hyponymic relation to the metonymies to their left. For example, the AUDITORY PERCEPT FOR CAUSE metonymy is an instance of the PERCEPT FOR CAUSE metonymy, which itself is a subtype of the EFFECT FOR CAUSE metonymy. The sentences given exemplify both referential metonymies (e.g. *What’s that*
The role of conceptual metonymy in meaning construction

smell? for ‘What’s the cause of that smell?’) and predicational metonymies (e.g. Bill blushed for ‘Bill felt embarrassment/shame/…’).

Figure 11. The taxonomic structure of the EFFECT FOR CAUSE metonymy
7. Conclusion

I hope to have made a plausible case for the idea that conceptual metonymies constitute an intermediate level of contingent conceptual relations – between very abstract inference-guiding principles and heuristics à la Sperber and Wilson and Levinson and perhaps very specific ad hoc inferential principles that are employed in the derivation of particularized conversational implicatures. I have argued that metonymic principles are used for meaning elaboration and that, on the conceptual level, the source content of a metonymy is “contained” in the conceptual structure that represents the target content. This containment is often (though not by necessity) syntactically reflected in the way that metonymic meanings are paraphrased. I have also argued that it is not always necessary to evoke complete frames or ICMs in order to arrive at a sufficient understanding of intended meaning. Not all possible links and conceptual components in a frame have to be activated at a given time.

Many examples I have analyzed as metonymies in this chapter are commonly regarded as explicatures or implicatures in the pragmatic literature. I have no objection to such an analysis but have argued that such pragmatic inferences are often guided by pre-existing conceptual metonymies readily available to interlocutors in their interpretive efforts. Cross-linguistic comparisons, which I have not undertaken in this chapter, seem to indicate that the degree of exploitation of metonymic principles may vary from language to language (see e.g. Brdar and Brdar-Szabó 2003, 2004; Panther and Thornburg 1999b, 2000).

Furthermore, I have developed the idea that in prototypical metonymic relations the target concept is conceptually prominent. Prototypical metonymy not only makes target meanings accessible but also available for further elaboration in discourse. Metonymies function on the referential, predicational and illocutionary levels of speech acts. They also perform an important function in resolving semantic conflicts between lexical meaning and constructional meaning.

Finally, I have suggested that metonymies are organized in hierarchical systems and I have illustrated this claim with the high-level EFFECT FOR CAUSE metonymy, which forms a taxonomy of at least three levels.
Notes

1. This chapter is a revised version of talks delivered at the 8th International Cognitive Linguistics Conference (University of La Rioja, Spain, July 20–25, 2003) and at the Warsaw-Hamburg Cognitive Linguistics Workshop (Warsaw, Poland, January 16–17, 2004). A preliminary version of this chapter (co-authored with Linda Thornburg) appeared online in Metaphorik.de 06 (2004). I wish to thank Linda Thornburg, who has contributed many ideas to this chapter, for her constructive criticism of the present version. This research is associated with Francisco Ruiz de Mendoza’s project HUM200405947C0201/FILO (DGI, Spain).

2. My claim that pragmatic inferencing is usually automatic and subconscious does not of course preclude the possibility that there are communicative situations in which a hearer will resort to conscious reasoning in order to figure out what a speaker might mean on a specific occasion.

3. Récanati (2002) has hypothesized recently that “primary pragmatic processes” involved in explicature derivation are as “direct” as perception and that “secondary primary processes” (inferring implicatures) are amenable to conscious reasoning (Récanati’s availability condition).

4. For Levinson, the key players in this process are generalized conversational implicatures (GCIs).

5. However, Jackendoff does not call these reasoning principles ‘metonymic’.

6. Sperber and Wilson (2002), however, have recently proposed that the kind of inferencing used in linguistic communication is modular, i.e. specific to language.

7. The following is based on Panther and Thornburg (2003a) and Panther and Thornburg (in press).

8. Not all theories make a distinction between vehicle and source. For example, Radden and Kövecses (1999) use the term ‘vehicle’ to refer to the linguistic sign that triggers the metonymic relation as a whole. Ruiz de Mendoza and Otal (2002) use the term ‘source’ in the same function. Radden and Kövecses (1999) regard a number of other relations as metonymic including relationships of form as e.g. in euphemistic usages such as Gosh for ‘God’ or shoot for ‘shit’, which I regard as more peripheral examples of metonymy.

9. This latter view is in line with the basic tenet of relevance theory that processing effort should be minimal and contextual effects maximal.

10. Note that the paraphrase of the target meaning of (13) is roughly: \[ \text{TARGET Do something to the effect [so that you will [SOURCE be wealthy]]} \] where the source content is “contained” in the target meaning, which is expressed in the matrix structure. This is a case of source meaning elaboration in the same sense as in examples (7a–c).

11. Examples (13) and (15), discussed above, do not fall into the category of referential metonymies.

12. See Searle (1969) for the relevant distinctions between referring and predicating – which together form the propositional act – and illocution.
13. Events are conceptualized here as idealized cognitive models (ICMs) that contain as subcomponents the modalities of their realization.

14. Yorick Wilks (p.c.) has argued that the sense of (17) is ‘General Motors was forced to stop production’. If this were correct, the proposition ‘General Motors stopped production’ would be an entailment rather than a metonymic inference. It does not seem to be the case, however, that have to always entails the truth of its infinitival complement clause. For example, I have to hand in my paper next Tuesday can be followed by … but I don’t think I can meet the deadline without contradiction (although it might be more natural to say I’m supposed to hand in my paper on Tuesday, but I don’t think I can meet the deadline). The factor that makes the inference in (17), viz. ‘General Motors stopped production’, virtually uncancelable is the past tense (and possibly also the action sense of stop production). But even in the past tense there are contexts in which a cancellation of the strongly implied actuality of the infinitival clause is possible: I had to be home by 10 o’clock but didn’t make it by that time because the bus broke down is semantically consistent. I conclude that the inference from General Motors had to stop production to ‘General Motors stopped production’ is metonymic in nature although the metonymic link between source and target is very strong and difficult to suspend or cancel.

15. This is not a claim that metonymic principles are innate, but rather pre- and extra-linguistic. That metonymic principles guide the production and comprehension of pragmatic inferences is e.g. argued for by Ruiz de Mendoza and Pérez (2003) for explicature derivation and by Barcelona (2003) for more indirect pragmatic implications.

16. I do not claim that every predicational metonymy can be used referentially, nor vice versa.

17. Of course, B’s utterance may also be a truth evaluation of the proposition expressed by A as a whole.

18. I would like to thank Dan Fass for providing the reference to Stallard’s important article.

19. Differently from the analysis proposed in this chapter, Stallard (1993) argues that in (25) there is no referential metonymy at all from Nixon to ‘US Air Force pilots’, but that the predicate bombed Hanoi is metonymically coerced into a target meaning such as ‘caused the bombing of Hanoi’.

20. Brdar and Brdar-Szabó (2003) raise the same question from a typological perspective in an interesting cross-linguistic study comparing the exploitation of the MANNER FOR LINGUISTIC ACTION metonymy in Croatian, Hungarian and English.

21. I use the subscripts \( s \) for ‘source’ and \( t \) for ‘target’ referents. The arrow ‘\( \rightarrow \)’ indicates the metonymic relationship.

22. In Langacker’s framework of Cognitive Grammar, brief would function as the (scalar) landmark in relation to a trajector that is a process (the president speaking), not a participant (the president) in the process.

23. I have not discussed such low-level and highly context-dependent inferences in this chapter.
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Tracking the fate of the metaphor *silent spring* in British environmental discourse

*Brigitte Nerlich*

“Floods. Foot and mouth. Global warming. BSE. Pollution. GM foods. BSE. Soil degradation. If you want to be in at the sharp end of scientific and social debate in the next 10 years then agriculture and environment are bound to be among the hottest important subjects” (Vidal 2001).

1. Introduction

The images and metaphors used in debates about the risks and benefits associated with cloning, genetically modified (GM) food and genomics have been well researched (see Nerlich, Clarke, and Dingwall 1999, 2000, 2001, Nerlich, Dingwall, and Clarke 2002 where references to further literature can be found). There have been less detailed studies of the metaphors and images used in the debate about agriculture and the environment (but see Nerlich, Hamilton, and Rowe 2002, Nerlich 2004a, and the work done by ecolinguists, e.g. Fill and Mühlhäusler 2001; Harré, Brockmeier and Mühlhäusler 1999).

To fill this gap, this chapter will explore the ‘life and work’ of one salient environmental metaphor, namely *silent spring*, based on the 1960s environmental bestseller *Silent Spring* by Rachel Carson ([1962] 2000). This book alerted scientists, the media and the general public to the dangers associated with the indiscriminate use of pesticides, such as DDT, to wildlife, humans and the environment. In this chapter I want to examine how the book and the metaphor were rhetorically and politically exploited in British environmental, ecological and agricultural discourses between 1998 (a date that coincides with the height of the debate over cloning and GM food) and 2002 (a date that coincides with the height of the debate over the human genome, as well as the debate over sustainable agriculture).

The first part of this chapter will discuss the significance of *silent spring* in its past and present political, scientific and literary contexts. The second
part will analyse the rhetorical and argumentative uses made of *silent spring* in British broadsheets and scientific journals in three types of debates: the debate about pesticides and their threats to birds and humans (where environmental and agricultural discourses intersect); the debate about GM food (where genetic, agricultural and environmental discourses intersect); and the debate about foot and mouth disease (FMD) (where agricultural and environmental discourses intersect). This might contribute to a better understanding of the ways in which popular culture and science interact in framing public attitudes towards the environment and to a better understanding of how metaphors are established and changed in political and social discourse. At the end of the chapter I will use the results of this research to appeal for a new approach to metaphor, the ecological study of metaphor, which focuses on how metaphors interact with their environments of use and how they adapt and change through this interaction.

2. *Silent spring* in context

The book *Silent Spring*, published 40 years ago by Carson, an American writer and scientist (see Lear 1997 for her biography), dealt with the long-term dangers of chemical pesticides, used widely by farmers and gardeners to kill insects or pests, to plants, animals and humans (for a more detailed description of the development and uses of DDT from the second World War onwards, see: http://onlineethics.org/moral/carson/2-DDTuse.html, accessed April 2003). *Silent Spring* “made people think about the environment in a way they never had before” and “introduced to the general imagination the idea of ecology”.2 Forty years later, in the spring of 2001, a *BBC* news report on the FMD epidemic in the UK proclaimed: “Spring 2001 will go down in history as a disastrous period for our farming and tourism industries. After the cull comes an eerie silence - described by one Cumbrian farmer as a *silent spring* as he surveyed his empty fields following the slaughter of his sheep”. (“Silent Spring” website: http://www.bbc.co.uk/england/silentspring/, accessed April 2001).

When *Silent Spring* was published in the 1960s, it sparked fears about a global environmental catastrophe, fears that were exacerbated by other developments, such as the development of the atomic bomb, the cold war, and the space race – all events associated with networks of images, metaphors and stereotyped arguments into which *Silent Spring* fitted neatly, both as a book, a book title and as a metaphor.

As Linda Lear reports in her seminal book about Rachel Carson’s life and work, *Rachel Carson: Witness for Nature*, Carson had initially been
unsure about what title to give to her book. Indeed, “Silent spring” had first been intended to be just a chapter title. However, Marie Rodell, her literary agent, saw its potential as a general title for the book as whole. In order to convince Carson, she found some lines from a poem by the English Romantic poet John Keats, which, as Lear writes, “amplified the title of Silent Spring beautifully” and served as one of the epigraphs for the book: “The sedge is wither’d from the lake, /And no birds sing” (Lear 1997: 389). The second part of this verse became in turn a famous chapter title in Silent Spring (echoed, for example, in the title of Waddell ed. 2000).

The phrase silent spring is a counterfactual blend and auditory metaphor that represents the anticlimax following failed expectations and dashed hopes and cancels the tacit assumption that spring should be full of life, hope and joyful sounds. The network of meanings surrounding this blend feeds on a variety of connotations, synonyms, antonyms and figurative extensions. It also draws on knowledge of literary traditions and political events so as to achieve its main rhetorical effect: to signal a deep threat to the environment. In association with spring the word silent evokes death, the end of nature, the unnatural and artificial, emptiness and sterility, whereas spring is usually associated in western culture with birds singing, new beginnings, life, unspoiled nature, and wilderness. Silence in western culture has mainly negative, even menacing connotations. The two words silent and spring also establish links to western literary traditions, which either romanticise nature or project dystopian visions of nature destroyed, and to scientific and political events, which were different but at the same time similar for the 1960s and the 1990s (see figure 1).

During the 1960s science was progressing fast, not only in relation to the use of chemical pesticides, but also on the biological front after the discovery of the structure of DNA in 1953. On the one hand DNA enveloped genetic science with a mantle of mystique (Nelkin 1995); on the other hand advances in in vitro fertilisation, the contraceptive pill, and early cloning research inspired Taylor’s 1968 book The Biological Time-bomb (Taylor 1968). Just like Carson’s work, which alerted the general public to the dangers of biochemical advances, this work alerted the public to some of the dangers inherent in biotechnological and genetic advances. Both Carson’s and Taylor’s books grabbed the public imagination and inspired sci-fi spin-offs, such as Ursula Le Guin’s 1969 essay Nine Lives (Le Guin [1969] 1970) and Frank Herbert’s (1966) The Green Brain.

…Herbert imagines the insect world rising up against the global application of industrial pesticides, developing not only effective resistance in the
physical sense but also a collective consciousness capable of reason, communication, and political resistance. (Killingsworth and Palmer 2000:192)

This was the beginning of a new literary tradition of apocalyptic narratives and of the new genre of the ecocatastrophe, inspired both by the threat of the atomic bomb and a growing ecological awareness.

At the same time Paul Ehrlich published another book that played with the image of the bomb: *The Population Bomb* (Ehrlich 1968). Many of the topics tackled by Ehrlich overlapped with Carson’s interests, especially the effects that humans have on nature, such as deforestation, overfishing, chemicals in the atmosphere, the toxification of the environment and the human body (what Nicola Baird called “a toxic time bomb” in an article for *The Guardian* referring to *Silent Spring*, 25/09/02), and, of course, the exponential growth of the human population. Unlike Taylor and Ehrlich, who used the metaphor of the (time) bomb to focus on the explosive and potentially risky growth of scientific knowledge on the one hand and of the world’s population on the other, Carson’s metaphor of *silent spring* focused on the possible outcome of such events, namely the silence that follows, implicitly evoking the cold and deathly image of *nuclear winter* – another seasonal metaphor that permeated 1960s public discourse, dominated by the image of the atomic bomb.

Whereas the 1970s became a decade of environmental activism, the 1980s and early 1990s were a time of scientific and technological euphoria, the end of the cold war and a time of a global economic boom. References to *silent spring* diminished (how much or how little will have to be ascertained) and it was only during the 1990s that *silent spring* re-emerged as a central symbolic reference point. At the height of the debate about GM food the phrase fanned fears that soon it would be “the year 2020 and the most silent of silent springs, apart from the rustle of genetically engineered oilseed rape, wheat, maize and other ‘designer’ crops nodding in the breeze.” (Nuttall, *The Times*, 13/7/98, p. 15). At the end of 1999 the development of a genetically modified tree was announced as “Silent Spring 2: The Terminator tree” alluding at one and the same time to Monsanto’s famous terminator seeds and to the ‘terminator’ movies with Arnold Schwarzenegger. Groups opposed to genetic engineering as well as ‘serious’ scientists, such as Sir John Krebs, who studied the effects of intensive farming on common birds (Krebs et al. 1999), have used the title and imagery of *silent spring* ever since in various argumentative contexts, together with allusions to other literary and scientific sources.

 Worries about the environment and health have increased over recent years after a series of health and food scares, such as E-coli, salmonella, and BSE or
so-called ‘mad cow disease’ (Bovine Spongiform Encephalopathy, a cattle disease that might be linked to vCJD or variant Creutzfeldt-Jakob Disease, a debilitating brain disease in humans). In this context the 1997 announcement that a sheep named Dolly had been cloned unleashed a torrent of dystopian cultural imagery (Nerlich, Clarke, and Dingwall 1999). Since then genetic engineering has been compared to Chernobyl (Bremner 1999) and xenotransplantation has evoked images of a ‘genetic time bomb’ (Bryan 2001) – replacing the atomic bomb and the biological time bomb of the sixties. To dispel some of the fears about genetic science going too far, scientists and politicians heralded the decipherment of the human genome or ‘book of life’ as the year 2000 equivalent of the moon landing (see Nerlich, Dingwall, and Clarke 2002), just as in the 1960s scientists might have hoped to allay the fears provoked by Silent Spring and other books by really sending men to the moon. In both cases landing on the moon, literally or metaphorically, might have been used as an icon of scientific achievement to counter fears of science gone too far.

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<td>silent spring / GM food-FMD</td>
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Figure 1

However, then as now parts of the general public were not convinced of the benefits promised by scientific advances and, as a result, focused more on the associated risks. This renewed focus on risks happens to coincide, as during the 1960s and 70s, with threats of global war, environmental disasters, possibly caused by global warming, and the new threat of global terrorism, especially bioterrorism. Consequently, now as then the war metaphor pervades discourses that also use the metaphor of silent spring.

In 1962, as in 2002, a movement began to emerge of people who did not wish to land on the moon, either literally or metaphorically, but rather wanted to go back to an imagined ‘wilderness’ or ‘back to nature’, not to make war on nature but to become an integral part of it. These people fear the end of nature (see McKibben 1990) and the end of humanity as we know it; the future they envisage (again) is a silent world “full of plastic, concrete and electronic ro-

Over four decades the book *Silent Spring* has thus permeated public consciousness and the image of a silent spring has been used repeatedly as a rhetorical resource and a mine for metaphors and images in debates about the impact of science on society and on the environment.

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**Figure 2**
Future research on a larger scale than this chapter should study the uses made of *silent spring* over four decades, between 1962 and 2002. This research would have a synchronic as well as diachronic dimension: to discover the polysemous uses of *silent spring* in modern environmental discourse and to examine the various uses of this polysemous title over time. The beginning of this development has been examined in a ‘synchronic’ study carried out by Gary Kroll in 2001. He distinguishes between three audiences and three messages that *Silent Spring*, the serialised version, the book and the broadcast, had in 1962 and 1963.

The serialized version of the book was geared to an urban audience, and its salient message was that pesticides posed a threat to the individual’s body through ingestion of staple foods coated with cancer-causing chemicals. A suburban “Silent Spring” was manifested by the book itself […], which outlined the dangers presented to personal property, home, and family within the context of a post-war domestic ideology. Finally, the televised “Silent Spring” introduced a mass audience to a philosophical discussion about the problems created when science assumes an arrogant confidence in its ability to control nature. (Kroll 2001:404)

In this chapter I slice off the very tip of the metaphorical iceberg that has steadily grown around *silent spring* since 1962 by examining the uses made of the book and the phrase in the period between 1998 and 2002.

### 3. *Silent spring* in the media

#### 3.1. Material and data collection

Carson’s book was one of the most influential popular science books of the twentieth century. It demonstrated clearly for the first time that a technology that seems harmless might have serious long-term effects on environment, wildlife, and human health. To study the impact of this book makes therefore good sense, especially at a time when debates rage about the risks and benefits of GM food and when something that seemed harmless, such as feeding cattle meat and bone meal made from sheep infected with scra-pie, turned out to be not harmless at all – BSE. *Silent Spring* also highlighted for the first time the seeming complicity between government, industry and scientists which undermined trust in these institutions – a topic still very much with us today, especially with regard to BSE and GM food.
The period under study in this chapter covers the years that followed the cloning debate in 1997 and the GM food debate in 1998 and goes up to the outbreak of FMD in the UK in 2001 and its consequences, with the shadow of BSE hanging over all these debates.

For this pilot study I used the available online material from four British broadsheets and two scientific magazines, one popular, one academic. As some online archives started in 1998 and some in 1999 the data collection has been somewhat uneven. The broadsheets studied were, in order of importance for this project:

a) *Guardian unlimited* (including the Sunday edition of *The Guardian, The Observer*):
*The Guardian* is a left-of-centre paper of social and environmental protest. Between 1999-2002 it published 28 articles using silent spring in the headline (twice) and body of the article, of which one was an interview, one a review of *Ecology Magazine*, and three were obituary/commemorative articles.

b) *The Times archive*:
*The Times* is the oldest British national daily and generally regarded as the paper of the establishment. It is conservative, but not as conservative as the Daily Telegraph. Between 1998 and 2002 it published nine articles with silent spring in the headline (three times) and the body of text.

c) *Electronic Telegraph (Daily Telegraph)*:
*The Daily Telegraph* has the strongest conservative outlook. Between 1999 and 2002 it published 8 articles using silent spring in the body of the text.

d) *The Independent*:
*The Independent* is the youngest broadsheet leaning slightly to the left, but not as much as *The Guardian*. Between 1999-2002 it published four articles with silent spring in the body of the text and once in the headline.

I studied one popular and one ‘serious’ science journal. The *New Scientist*, which calls itself ‘the world’s no. 1 science and technology news service’, published three articles and three reviews using *silent spring* in the body of the text between 1998 and 2002. *Nature*, “the renowned international weekly science journal launched in 1869”, published the same amount of articles and reviews in the same period, one of them using *silent spring* in the title.

Both the broadsheets and the science journals used *silent spring* either as a scientific reference, quoting title, author and date of publication, or as
a popular reference with all the associations it has accumulated over time. The main themes discussed by both broadsheets and science journals were the decline of the bird population, the fight against malaria using the pesticide DDT (or not) and genetically modified organisms. Only the broadsheets, not the science journals, used *silent spring* to discuss the topic of FMD. The majority of articles using *silent spring* to describe the effects of FMD appeared in *The Guardian*, whereas two important articles about GM using *silent spring* appeared in *The Times* and two in the science journals. The disappearance of birds was discussed in equal measure in *The Guardian*, the *Daily Telegraph*, *The Times*, and *Nature*.

The spread of all topics can be represented as follows.

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**Figure 3**

- Gulf war
- atomic bomb
- nuclear winter
- cold war
- malaria
- HUMAN HEALTH
  - fertility
  - cancer
- pesticides
- *SILENT SPRING*
- food
- foot and mouth
- FARMING
  - (industrial)
  - (sustainable)
- pesticides
- DECREASE IN SONGBIRDS
  - (insects, butterflies, etc.)
- pesticides
- GM
  - (genetics)
- ecology
- biodiversity
- ENVIRONMENT
  - global warming
- POLLUTION
  - (industrial)
  - (sustainable)
- death
- extinction
- emptiness
- silence
- sterility
- risks to animals, humans, food, environment, ecology
3.2. Silent spring as a scientific and popular reference

As already mentioned, both the broadsheets and the science journals used silent spring as a scientific as well as a popular reference. They referred to the book to continue the debate about the impact of pesticides and (pest resistant) GM crops on the environment and on human health and they used silent spring as a popular reference, cliché or catch-phrase to exploit its many associations with images (silence, death, emptiness, sterility etc.), emotions (fear, sadness, despair) and illocutionary forces (to alarm, alert, warn, etc.). I shall first examine the popular use of silent spring by scientists, then by journalists and by the farmers interviewed by journalists.

In 1999 Sir John Krebs, a zoologist, co-authored an article for Nature. It discussed the disappearance of birds, the loss in biodiversity and the impact of industrial agriculture on the bird population. The article was entitled: “The second Silent Spring?” using silent spring as a popular, easily understood reference. The second section of the article was headed by the question: “Where have all the birds gone?” – a question that Carson had posed in her book as: “The birds, for example - where had they gone?” (Carson [1962] 2000: 22). Inside the article itself, however, many scientific terms are used, which might not be as easily understood, such as taxon. The article thus caters both to in-group readers as well as out-group readers, to environmental activists, biologists and ecologists, as well as to environmentalists and the public at large. After summarising the since Carson well-known effects of organochlorine insecticides, such as DDT Krebs et al. (1999) continue:

The new losses in biodiversity are sometimes called the ‘second Silent Spring’. However, although they are associated with the intensification and industrialization of agriculture, they involve more subtle and indirect effects than the poisoning of wildlife by pesticide residues. In general terms, intensification is about making as great a proportion of primary production as possible available for human consumption. To the extent that this is achieved, the rest of nature is bound to suffer..

Detailed ecological studies have shown the devastating effect of the intensification of agriculture on biodiversity. Here we summarize some of the key results, taking birds as our illustrative taxon, and link them to the broader issues of society’s choices about the kind of landscape and environment it wishes to bequeath to future generations. (Krebs et al. 1999: 611)

This debate about the decline in bird population was pursued in the broadsheets with other, more poetical means, as we shall see. Meanwhile, the debate about the intensification of agriculture and its consequences for
Tracking the fate of the metaphor silent spring

The popular, as opposed to the scientific, use of the phrase silent spring in newspaper articles that dealt with FMD, GM food and the loss of song birds can be illustrated by the following quotes:

- “Silent Spring indeed”. (The Times, 19/03/98)
- “It is the year 2020 and the most silent of silent springs” (The Times, 13/07/98).
- “Now there is a threat of another silent spring”. (The Times, 13/08/98)
- “The silent spring scenario” (New Scientist, 31/10/98).
- “…another silent spring” (Observer, 09/01/00).
- “The phrase silent spring needled my brain”. (Daily Telegraph, 29/04/00)
- “‘It’s the silent spring here’” (Guardian, 26/02/01)
- “Is this the start of a silent spring?” (Guardian, 07/03/01)
- “Out of this silent spring grows a special fear” (Guardian, 07/03/01)
- “Silent spring: Farming needs steady hands now and brave thinking later”. (The Times, 14/03/01)
- “A silent spring indeed” (Guardian, 20/03/01)
- “He wonders what he will do with empty fields in a silent spring” (Guardian, 24/03/01)
- “In Britain this spring, a silence is descending on agriculture itself” (Guardian, 11/04/01)
- “Normally, by now, the fields would be alive with gambolling and baaing lambs. There is nothing: it is Silent Spring”. (Guardian 14/04/01)
- “Meanwhile, spring has become a little more silent”. (Guardian, 18/05/02)
- “… it’s a tragedy of Silent Spring proportions”. (Guardian, 17/07/02)

The ‘silent spring scenario’ exploited in these extracts had first been set out in a story with which Carson prefaced her scientific account of the impact of pesticides on wildlife and humans. She had called this fictional story ‘a fable for tomorrow’ (Carson [1962] 2000: 21–22). Here is a passage from this story. When analysing the media stories using the silent spring metaphor, we shall see how journalists (just as Sir John Krebs in the article quoted above) knowingly or unknowingly took their cue and their images from this story when writing about the loss of songbirds, the impact of GM crops or the handling of the FMD in Britain.
There was once a town in the heart of America where all life seemed to live in harmony with its surroundings. The town lay in the midst of a checkerboard of prosperous farms, with fields of grain and hillsides of orchards where, in spring, white clouds of bloom drifted above the green fields…

Along the roads, laurel, viburnum and alder, great ferns and wildflowers delighted the traveler’s eye through much of the year. Even in winter the roadways were places of beauty, where countless birds came to feed on the berries and on the seed heads of the dried weeds rising above the snow. The countryside was, in fact, famous for the abundance and variety of its bird life, and when the flood of migrants was pouring through in spring and fall people traveled from great distances to observe them…

Then a strange blight crept over the area and everything began to change. Some evil spell had settled on the community: mysterious maladies swept the flocks of chickens; the cattle and sheep sickened and died. Everywhere was a shadow of death. The farmers spoke of much illness among their families. In the town the doctors had become more and more puzzled by new kinds of sickness appearing among their patients…

There was a strange stillness. The birds, for example - where had they gone? [see article by Krebs, et al, 1999, quoted above] Many people spoke of them, puzzled and disturbed… The few birds seen anywhere were moribund; they trembled violently and could not fly. It was a spring without voices. On the mornings that had once throbbed with the dawn chorus of robins, catbirds, doves, jays, wrens, and scores of other bird voices there was now no sound; only silence lay over the fields and woods and marsh. (Carson [1962] 2000: 21–22, italics added)

The majority of articles published between 1998 and 2002 in the broadsheets are short and matter of fact, but some deserve a closer look in terms of the rhetoric and images used to convey a specific message. I shall therefore analyse some salient articles in more detail, one on the disappearance of songbirds, the theme that is most intimately connected with the phrase silent spring, one on GM crops and two on FMD.

3.3. Birds, crops and cattle – a silence of many voices

3.3.1. Songbirds

One article, with the title “The silent spring”, published in The Observer by Nicci Gerrard on Sunday, March 21, 1999, displays a particularly dense firework of metaphors and images, exploiting in particular the auditory associations suggested by the counterfactual metaphor silent spring: the
absence of animal voices (see example 14). *Silent spring* is used as a popular reference here, as Carson’s book is not mentioned. However, when reading the article, many readers, who know the book and the ‘fable for tomorrow’, would recognise direct intertextual echoes. The article begins with a description of a normal spring. This is evoked by phrases such as:

- “sounds of birds singing”
- “sweet, high sounds”
- “web of sound, up and down the scales”
- “world of sound”
- “singing their hearts out”
- “din”
- “hoarse-voiced rooks clattering from their nests”
- “reassuring call of the wood pigeons”
- “the great chorus resolves into the less rapturous songs of daytime”
- “liquid sound”
- “the dawn chorus”
- “‘There’s a greenfinch singing. Do you hear, do you hear?’”

This world or web of sound and imagery which captures the stereotypical aspects of spring in the British countryside, contrasts with the *silent spring* evoked by phrases, such as:

- “all that’s missing is the soundtrack”
- “in search of a dawn chorus”
- “the dawn chorus is becoming muted in Britain; and it is changing its chorus line”
- “their voices have faded from the countryside”
- “it is empty and silent”.

As Gerrard says, “It is more difficult to see and hear an absence”, but the metaphor of *silent spring* and the network of associated sounds and images actually allows the readers or listeners to do just that: they can see, hear, feel an absence. This is quite an emotional experience, one of loss, sadness, despair, and regret, an experience that can spur readers into action - to do something, to restore the web of sound that has been torn and to banish the silence that lies over the countryside. Gerrard portrays this silence as a symptom of changes in agriculture and food production, in particular intensive farming, subsidies, the use of pesticides and the introduction of GM crops. These are seen as agents responsible for ‘the killing of
the countryside’, as one writer, Graham Harvey, has put it in a book published at the same time (Harvey 1998). Gerrard too uses metaphors of death to portray the effects of this metaphorical and literal killing. She talks about ‘a living shroud’, and ‘a landscape of the dead’.

The theme of the killing of the countryside was pursued by other writers, who used silent spring to discuss the possible influence of GM crops on the countryside and the more direct experience of killing millions of animals during the FMD outbreak. During the FMD crisis silence became in fact a major trope for those expressing their feelings in poems and pictures.

3.3.2. Genetically modified crops

In his article on GM food and crops entitled “Silent spring” (The Times, July 13, 1998) Nick Nuttall, the Times’ environment correspondent, also exploits the auditory aspect of the metaphor silent spring and the associations surrounding the ‘silent spring scenario’ when he begins his article in the style of a sci-fi story, echoing Carson’ ‘fable for tomorrow’. Both Gerrard and Nuttall continue this fable and warn us that fiction can easily turn into fact.

It is the year 2020 and the most silent of silent springs, apart from the rustle of genetically engineered oil-seed rape, wheat, maize and other “designer” crops nodding in the breeze. Songbirds such as the lark, linnet and mistle thrush, long in decline, have finally fled the English countryside because the seed-producing weeds on which they depend have been eradicated from fields and hedgerows by relentless chemical spraying made possible by biotechnology. [“where countless birds came to feed on the berries and on the seed heads of the dried weeds rising above the snow”. Carson [1962] 2000:21]

Meanwhile the hum of bees and other insects has also been silenced, thanks to the planting of genetically altered crops that produce insect-resistant toxins. They annihilate not only aphids and other pests but also beneficial insects on which birds and bats depend. Native wildflowers are in retreat but “super-weeds”, resistant to chemical treatment, have emerged. This is the nightmare scenario surrounding genetically modified plants, echoing that of Rachel Carson’s classic book about the pesticide DDT, Silent Spring.
GM crops and foods are, like the clones that appeared on the European horizon at the same time, artificial human creations, and have been referred to as Frankenfood etc. Unlike in the cloning discourse, references to other sci-fi sources (such as *The Day of the Triffids* or *The Attack of the Killer Tomatoes*) are however rare. The metaphor most often used in GM discourse is that of *silent spring*. A reason for this might be that it is much more difficult to use stock characters and images in the debate about GM. Writers therefore also resort to stylistic devices other than metaphor, such as alliteration, literary flourishes and word play, such as ‘seeds of disaster’, ‘seeds of doubt’, ‘bitter harvest’, ‘cultivating concerns’, and so on (see Nerlich, Clarke, and Dingwall 2000), which all tie in, in one way or another, with the imagery evoked by *silent spring*.

3.3.3. Foot and mouth disease

As hinted at in the epigraph used at the beginning of this chapter, the start of 2001 was a turbulent time in the UK: “This year, like the enactment of some apocalyptic, millennial fantasy, we have already had storms, foods and blizzards. Agriculture is still linked to BSE, e-coli, salmonella, bovine tuberculosis and swine fever. Now there’s a visitation from a virus, reappearing from a painful, long-ago memory, and burning through the ecology of commerce like wildfire”. This is how Paul Evans, the *Guardian*’s countryside diarist, described the situation on March 7, 2001 in his article entitled “The silent spring”. The last major outbreak of FMD in Britain had occurred in 1967. At that time over 250,000 million animals were killed, mainly in one part of the country. This time about 10 million, mostly uninfected, animals, were killed all over the UK. It should be stressed that FMD is not harmful to humans, neither is it lethal to animals.

The strength of the virus lies in its ability to spread ‘like wildfire’ (through the population of farm animals and, on a metaphorically even more abstract level, the wider ‘ecology of commerce’ linked to farming, such as tourism), to ‘flare up’ everywhere and to undermine the economic competitiveness of a country that wants to maintain disease-free status. The reasons for eradicating FMD are therefore mainly economic. The policy of choice used since the beginning of the twentieth century is that of slaughtering all infected animals (see Woods 2002), a policy that was extended in 2001 to include millions of uninfected animals – effectively creating ‘fire-breaks’ to halt the spread of the ‘wildfire’ that was the epidemic. This was seen as the only way to ‘win the battle’ against the disease, to bring the
disease under control and thus to control Nature and the ecology of commerce (for a more detailed analysis of the metaphors used during the outbreak, including the fire metaphor and the war metaphor, see Nerlich, Hamilton, and Rowe 2002).

The war metaphors used during the FMD epidemic were quite similar to those used in the 1960s in the ‘war against insects’ as described by Carson. In both cases, FMD and insects, scientists and policy makers assumed they could control nature, either by the use of pesticides or by the less sophisticated approach of killing millions of animals. In the 1960s they did not foresee the wider effects that pesticides could have on the environment, on wildlife and on humans. In 2001 they did not foresee the environmental, as well as the wider social and psychological impact of the slaughter policy (see Mort et al. in prep.). Silent spring captured the negative emotions that underpinned popular resistance to pesticides and might yet sway popular opinion against slaughter and in favour of vaccination when FMD comes round next time. In both cases, silence followed after the noise of the battle against pests or a virus had subsided.

In most of the articles studied here silent spring evoked death, emptiness and the general despair felt by many involved in the slaughter or affected by the slaughter, a despair vividly expressed in many poems written by adults and children during the FMD crisis, poems which are permeated by the topic of ‘silence’. Here is one of countless examples, again playing with the contrast of a noisy and a silent spring:

Silence….

Lots of silence

No moo, no baa, no neigh.

No more sheep to round up no more.

Silence…

(Matthew Whitehouse, Age 11 from Settle Middle School) (published in: Life Extinguished 2001: 17 and 60)

In a second article on FMD, “Scrubs up a treat” (The Guardian, April 11), Paul Evans turned the metaphor of silent spring as denoting death and despair on its head and turned it into a symbol of hope. FMD metaphori-
cally and literally silenced cows, sheep and pigs, but it gave back a voice to wildlife, normally under threat from industrial farming and from overgrazing by sheep, which tends to destroy shrubs, scrub and trees and can lead to the loss of vegetation, soil and other animals’ habitats.

Evans points out: “When Rachel Carson published Silent Spring in 1962, she conjured up an image of spring bereft of birds caused by insidious, unchecked pollution and the profligate use of pesticides by agriculture”. As many journalists before him, Evans stressed that “[s]uch a simple yet terrifying idea inspired a generation and contributed to the rise of the modern environmental movement”.

However, the silence experienced in the spring of 2001 was a new type of silence: “In Britain this spring, a silence is descending on agriculture itself. For a countryside which owes its character to farming, this silence is also terrifying”. This was not a silence brought about by the use of pesticides, where the farm animals and crops survive but the ‘pests’ die, but a silence following the killing of these animals themselves.

After the slaughter a debate began about intensive agriculture, the role of supermarkets, the availability of cheap food for all (see Nerlich 2004a) and the alternatives, such as local food distribution, farmers markets, organic food and sustainable agriculture – a debate that is currently continuing at EU level, where some dare to think about reforming the Common Agricultural Policy, and where some dream of replacing a productivist agriculture by a post-productivist agriculture. Evans evokes these dreams and debates as follows:

Out of the silence will emerge a debate about what shape the future countryside will take. It will be motivated by competing interests and cultural, political and economic agendas. Despite the feelings of despair surrounding the present countryside crisis, there are many options.

However, new forms of agriculture may emerge which are subsidised to produce environmental benefit rather than food production. By design or default, large areas of Britain may be left to the processes of wild nature.

It could be argued that the present countryside crisis is the opposite of Silent Spring: as agriculture suffers, wildlife flourishes…

There are environmentalists who would dearly love to see an end to farming in upland areas of Britain and a return to wilderness exclusive of any human intervention… There are many who want to preserve the cultural landscape character of places like the Lake District, with its wide-open spaces maintained by sheep grazing, and find the prospect of new woodland an anathema.
The story of Silent Spring not only helped to start the environmental movement, it also coincided with the intensification of agriculture. We may have come full circle in that environmental concerns will reshape agriculture and in so doing, reshape the countryside. But promoting the value and potential of scrub will require courage. (Italics added)

It should be stressed however that while a simple contrast of powerful images makes a good story, most conservationists would acknowledge that the reality of habitat restoration and maintenance is much more complex than ‘removing agriculture to let wildlife flourish’ – living in harmony with nature is a very difficult balancing act.

4. Conclusion

In this last part of my chapter I want to answer two questions: (1) What conclusions can we draw from this investigation for the theory of metaphor?; and (2) What can this investigation tell us about the influence of silent spring on recent environmental and agricultural debates?

4.1. Silent spring and the theory of metaphor?

Metaphors, such as silent spring, are not static entities, but dynamic phenomena that adapt to the discursive needs of those who use them and to the socio-political circumstances in which they are used. They have what one could call an internal and an external productivity, which, through their interaction and feedback, mutually enhance each other. This means metaphors like silent spring develop new meanings over time and their study can shed new light on how to understand the dynamic and social aspects of polysemy and semantic change.

Metaphors like silent spring seem to have a semantic dynamics that is based on the one hand on their intrinsic or textual semantic potential and on the other on their extrinsic or contextual use in various social, political, cultural and economic circumstances over time. This dynamic adaptability and polyphonic potential is also grounded in the metaphor’s appeal to various audiences at one and the same time (see Kroll 2001) and over time. In the case of silent spring this double dynamics is further enhanced by the fact that the metaphor, unlike for example the metaphor desktop in computer jargon, is linked to a specific text, is a title that evokes a whole book.
Over time the title becomes gradually dissociated from the book and takes on its own semantic dynamics, but echoes of the book’s content survive with the title and are themselves adapted to changing circumstances. This is important if a metaphor is to survive in and reverberate with popular imagination. In his book *Frankenstein’s Footsteps* Jon Turney (1998) has suggested that just the title of a cultural reference, such as *Frankenstein*, can evoke an entire story or ‘script’, which can be used again and again as an interpretative frame. This frame then structures the narratives through which the public communicate concerns – in this case about cloning, in the case of *silent spring* about the environment.

To create a somewhat circular metaphor in the context of this special issue, one could say that by observing the various uses and manifestations of *silent spring* in a range of discourses over time, I want to contribute to a new field of metaphor studies: the ‘evolutionary ecology of metaphor’. Evolutionary ecology studies how organisms evolve and adapt in interaction with their environments, or more radically, how organisms co-evolve with the environments. The evolutionary ecology of metaphor would similarly study how metaphors adapt, change and co-evolve in contextual use.

Let us now summarise how *silent spring* has evolved and become adapted to its various environments, including its interaction with other metaphors and other textual, cultural and socio-political events.

- Its intrinsic metaphorical potential derives from the counterfactual blending or conceptual integration of the two words *silent* and *spring* and the network of connotations that they evoke, at least in some parts of western culture (see figure 2).  

- This intrinsic textual and conceptual potential is enhanced by the fact that the metaphor is the title of a book and resonates with various aspects of the book, such as the ‘fable for tomorrow’, the chapter title ‘And no birds sing’, and so on. Both the fable and the chapter title, for example, had an enduring appeal for readers over the last four decades, readers that might never have read the whole book, but who continue the textual tradition of the book and the metaphorical life of its title by linking the title to the fable and the chapter heading (and the chapter heading to a poem by Keats quoted at the beginning of *Silent Spring* and through it to the whole romantic tradition) and using them for ever new purposes. This link between blend and book gives *silent spring* a metaphorical depth and power of survival that other metaphors, such as say, *genetic time bomb*, may lack.
– The inter-textual potential of *silent spring* emerges from the way the blend resonates with other scientific and fictional narratives, which filled the literary and cultural space around it throughout the last four decades.

– The co-textual potential of *silent spring* derives from the way this blend resonates with other metaphors over time, such as *nuclear winter* and *population bomb* in the 1960s, *terminator tree* or *Frankenfood* in the 1990s (which, by the way, employ alliteration to enhance their metaphorical flavour, just like *silent spring*), and *killing fields* or *the killing of the countryside* in 2001 (for an analysis of *Frankenfood* from the point of blending theory, see Hamilton 2003).

– And finally, the con-textual potential of *silent spring* derives from the way the blend draws ‘inspiration’ not only from co-textual or inter-textual mental spaces but from backgrounded mental spaces which reflect the socio-political circumstances of those who continue to use the blend, such as the fear of the atom bomb in the 1960s, the fear of genetic modification in the 1990s and the fear of the death of British agriculture in 2001. The changing nature of these socio-political circumstances adds a temporal embedding to the blend, that is to say, a diachronic evolutionary direction: each time it is repeated, its socio-temporal embedding leaves a mark. There is continuity too, however, as the effects of pesticides on the environment, on wild life and on humans persist to be a general concern and with it the fear of a *silent spring*.

The various ‘readings’ given to the original blend over time, which are constrained but also enhanced by certain socio-political and cultural circumstances, can themselves become metaphorically and socially productive in turn and become gradually more dissociated from the book, but without ever loosing their evolutionary links to the text completely. I have tried to highlight this by analysing *silent spring* as a popular reference, a cultural given, rather than a fresh metaphor.

This ecological and dynamic view of metaphor can be further elaborated by linking it to James Gibson’s (1979) theory of ‘affordances’. He defined affordances as follows:

> The affordances of the environment are what it offers the animal, what it provides or furnishes, either for good or ill. The verb to afford is found in the dictionary, but the noun affordance is not. I have made it up. I mean by it something that refers to both the environment and the animal in a way
Gibson had been dissatisfied with the way psychologists studied perception in artificial laboratory settings as an internal cognitive event and he had wanted to replace this approach with a more ecological one. Similarly, I have been dissatisfied with the ways some cognitive linguists study metaphor in relatively artificial laboratory settings and conceptualise it as an internal cognitive event and I would like to replace this by a more ecological approach. I want to study the affordances that a certain metaphor has, what it can be actively used for and what it has been effectively used for, and how this changes the metaphor and the way it is used over time. I want to study the interaction and complementarity between a metaphor and its environments of use.

In terms of Maturana and Varela (1980) an ecological theory of metaphor would study the ‘structural coupling’ between a metaphor and the environment, how it is constantly interacting with its (discursive) environment and, in the process shaping the (discursive) environment itself, as well as, more broadly, the sociocultural/economic circumstances of the time(s). The counterfactual blend *silent spring* creates ways of ‘seeing’, of comprehending our surroundings. Over and above its intrinsic semantics it therefore has a ‘pragmatic’, dynamic, action-oriented face which allows it to interact with these (ever-changing) sociocultural/economic conditions (its environment). In the process, through these ‘structural couplings’ it changes its own shape (its meanings and connotations) and at the same time impacts its ‘environment’. It manifests what some biosemioticians and cybersemioticians call a niche-like quality (Hoffmeyer 1997), as it has the ability to aid in the mobilisation of human beings behind environmental causes.

4.2. *Silent spring* and the debate about the environment

There is no simple choice between nature and culture, the natural and the unnatural or artificial, between civilisation and wilderness, between the silent spring that silences the voices of wild animals and the silent spring that silences the voices of domesticated animals. As Carson tried to make clear throughout her career, we have to find a way to live in harmony with nature, in balance with nature (see Lear 1997). But in the search for this balanced way of living on earth we cannot abandon science and just go
back to nature, we need science to restore a balance that has been destroyed gradually since humans began to cultivate the land, but a science that dares to confront big business, where dreams of conquering, subjugating, controlling and exploiting nature are still being dreamt every day.

Testifying to a committee in 1963,

Carson took the opportunity to remind the world of the wider implications of her work: ‘We still talk in terms of conquest. We still haven’t become mature enough to think of ourselves as only a tiny part of a vast and incredible universe. Man’s attitude toward nature is today critically important simply because we have now acquired a fateful power to alter and destroy nature. But man is part of nature and his war against nature is inevitably a war against himself’. (Burnside 2002)

Since 1962 this power has increased manifold, especially through developments in human and agricultural genetics. Hence, even more care has to be taken not to run away with the advances of science.

We have seen in the UK that when it comes to fighting ancient livestock diseases, such as FMD, a primitive all-out war or slaughter – what Carson called “as crude a weapon as a cave man’s club” (Carson [1962] 2000: 256) – still seems to be politically and economically much more desirable than a more modern or ‘scientific’ approach, such as vaccination. When it comes to dealing with nature, war and conquest, whether on political, economic or scientific grounds, still seem to be the preferred options and the preferred ways of framing policies metaphorically, be it on a national or on a global level. One of the biggest challenges facing modern science, modern society and modern states is perhaps “how states can govern nature in the increasingly globalised risk society” (Macnaghten and Urry 1998: 254).

Acknowledgement

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Notes

1. I would like to thank Roslyn Frank for helping me to give this chapter some theoretical depth. Thanks also to Peter Mühlhäusler and Martin Döring for their
helpful comments on an earlier draft of this chapter. All remaining errors and aberrations are of course my own. This chapter has been reprinted with the permission of metaphorik.de, where it was first published in April 2003: http://www.metaphorik.de/04/nerlich.htm.


3. This is different when silent is associated with night, as in silent night, when it evokes peacefulness and holiness.

4. It would be interesting to see how Carson’s book title has been translated in other cultures where other connotations may prevail. Another topic worth reflecting on is the way silent spring resonates with those in western societies who spend inordinate amounts of time and money on feeding wild birds in their back gardens and to whom the dawn chorus is a symbol of their success in doing their bit for the environment and the bird population, as opposed to those in western societies who live in big cities and to whom birds, such as pigeons, are just a nuisance. Obviously, there will be still others who live in countries where songbirds don’t wake you up in the morning, where they are not valued in the same way as they are in the English suburbs, and for whom therefore the metaphor silent spring has either a very different appeal or no appeal at all.

5. “Le Guin presents in The Word for World is Forest (1972) the conflict of an extractive, industrially oriented culture of earthlings who undertake to colonize a new planet for the sake of logging so that wood, now a precious commodity on the earth, can be returned via space freight at a huge profit” (Killingsworth and Palmer 2000: 193).


7. Monsanto is the US seed and pesticide giant that tried to undermine the message of Silent Spring in the 1960s by distributing 5,000 copies of a brochure parodying Silent Spring entitled The Desolate Year that describes a world of famine and disease, where insects have take over because chemical pesticides have been banned. In the 1990s Monsanto was at the forefront of GM technology. It also tried and failed to market sterile seeds, so called terminator seeds.


9. Any of the groups to which animals are assigned according to the principles of taxonomy, including species, genus, family, order, class and phylum.


11. Since 1995, Gerrard is a senior feature writer and contributing editor at the Observer. She has also published a number of novels (see: http://www.figuresdestyle.com/french/us_web/gerrard1.htm; accessed October 2002).

12. This title is a blend exploiting the expression ‘scrubbing up a treat’, referring to a person who normally dresses blandly and unexpectedly appears in nice clothes, and the word scrub meaning ‘undergrowth’.
13. Without Roslyn Frank’s prodding this section would never have been written. There is obviously much more to say here, but this will have to wait for another occasion.

14. On blending and its dynamic features, see e.g. Fauconnier and Turner (2002).

15. A rather arbitrary dichotomy that has dogged western thinking for a long time – but this is yet another story (see Descola and Pálsson 1996).

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