# **Cognitive Linguistics** An Introduction

# Vyvyan Evans and Melanie Green



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# The nature of cognitive linguistics: Assumptions and commitments

In this chapter we address the assumptions and commitments that make cognitive linguistics a distinctive enterprise. We begin by outlining two key commitments widely shared by cognitive linguists. These are the 'Generalisation Commitment' and the 'Cognitive Commitment'. These two commitments underlie the orientation and approach adopted by practising cognitive linguists, and the assumptions and methodologies employed in the two main branches of the cognitive linguistics enterprise: cognitive semantics and cognitive approaches to grammar. Once we have outlined the two commitments of cognitive linguistics, we then proceed to address the relationship between language, the mind and experience. The embodied cognition thesis is also addressed in some detail as it is at the heart of much research within cognitive linguistics. This thesis holds that the human mind and conceptual organisation are functions of the ways in which our species-specific bodies interact with the environment we inhabit. Finally, we provide a brief overview and introduction to cognitive semantics and cognitive (approaches to) grammar, which are addressed in detail in Parts II and Part III of the book, respectively.

# 2.1 Two key commitments

In an important 1990 paper, George Lakoff, one of the pioneering figures in cognitive linguistics, argued that the cognitive linguistics enterprise is characterised by two key commitments. These are (1) the 'Generalisation Commitment': a commitment to the characterisation of general principles that are responsible for all aspects of human language, and (2) the Cognitive Commitment: a commitment to providing a characterisation of general principles for language that accords with what is known about the mind and brain from other disciplines. In this section we discuss these two commitments and their implications.

## 2.1.1 The 'Generalisation Commitment'

One of the assumptions that cognitive linguists make is that there are common structuring principles that hold across different aspects of language, and that an important function of linguistics is to identify these common principles. In modern linguistics, the study of language is often separated into distinct areas such as phonology (sound), semantics (word and sentence meaning), pragmatics (meaning in discourse context), morphology (word structure) syntax (sentence structure) and so on. This is particularly true of formal approaches: approaches to modelling language that posit explicit mechanical devices or procedures operating on theoretical primitives in order to produce the complete set of linguistic possibilities in a given language. Within formal approaches (such as the Generative Grammar approach developed by Noam Chomsky), it is usually argued that areas such as phonology, semantics and syntax concern significantly different kinds of structuring principles operating over different kinds of primitives. For instance, a syntax 'module' is an area in the mind concerned with structuring words into sentences, whereas a phonology 'module' is concerned with structuring sounds into patterns permitted by the rules of any given language, and by human language in general. This modular view of mind reinforces the idea that modern linguistics is justified in separating the study of language into distinct subdisciplines, not only on grounds of practicality but because the components of language are wholly distinct and, in terms of organisation, incommensurable.

Cognitive linguistics acknowledges that it may often be useful, for practical purposes, to treat areas such as syntax, semantics and phonology as being notionally distinct. The study of syntactic organisation involves, at least in part, the study of slightly different kinds of cognitive and linguistic phenomena than the study of phonological organisation. However, given the 'Generalisation Commitment', cognitive linguists disagree that the 'modules' or 'subsystems' of language are organised in significantly divergent ways, or indeed that distinct modules or subsystems even exist. Below we briefly consider the properties of three areas of language in order to give an idea of how apparently distinct language components can be seen to share fundamental organisational features. The three areas we will look at are (1) categorisation, (2) polysemy and (3) metaphor.

#### Categorisation

An important recent finding in cognitive psychology is that categorisation is not criterial. This means that it is not an 'all-or-nothing' affair. Instead, human



Figure 2.1 Some members of the category CUP

categories often appear to be **fuzzy** in nature, with some members of a category appearing to be more central and others more peripheral. Moreover, degree of **centrality** is often a function of the way we interact with a particular category at any given time. By way of illustration, consider the images in Figure 2.1. It is likely that speakers of English would select the first image 2.1(a) as being more representative of the category CUP than image 2.1(e). However, when drinking from the container in 2.1(e), a speaker might refer to it as *a cup*. On another occasion, perhaps when using a spoon to eat soup from the same container, the same speaker might describe it as *a bowl*. This illustrates that not only is categorisation fuzzy (for example, when does a cup become a bowl?), but also our interaction with a particular entity can influence how we categorise it.

Although the category members in Figure 2.1 may be rated as being more or less **representative** of the category CUP, each of the members appears to resemble others in a variety of ways, despite the fact that there may not be a single way in which all the members resemble each other. For instance, while the cup in 2.1(a) has a handle and a saucer and is used for drinking beverages like tea or coffee, the 'cup' in 2.1(d) does not have a handle, nor is it likely to be used for hot beverages like tea or coffee; instead, this cup is more likely to contain drinks like wine. Similarly, while the 'cup' in 2.1(e) might be categorised as a 'bowl' when we use a spoon to 'eat' from it, when we hold the 'bowl' to our lips and drink soup from it, we might be more inclined to think of it as a 'cup'. Hence, although the 'cups' in Figure 2.1 vary in terms of how representative they are, they are clearly related to one another. Categories that exhibit degrees of centrality, with some members being more or less like other members of a category rather than sharing a single defining trait, are said to exhibit family **resemblance**.

However, fuzziness and family resemblance are not just features that apply to physical objects like cups; these features apply to linguistic categories like morphemes and words too. Moreover, category-structuring principles of this kind are not restricted to specific kinds of linguistic knowledge but apply across the board. In other words, linguistic categories – whether they relate to phonology, syntax or morphology – all appear to exhibit these phenomena. Formal approaches to linguistics have tended towards the view that a particular category exhibits uniform behaviour which characterises the category. As we will see,

however, linguistic categories, despite being related, often do not behave in a uniform way. Instead, they reveal themselves to contain members that exhibit quite divergent behaviour. In this sense, linguistic categories exhibit fuzziness and family resemblance. We illustrate this below – based on discussion in Taylor (2003) – with one example from each of the following areas: morphology, syntax and phonology.

## Categorisation in morphology: the diminutive in Italian

In linguistics, the term 'diminutive' refers to an affix added to a word to convey the meaning 'small', and is also used to refer to a word formed by the addition of this affix. In Italian the diminutive suffix has a number of forms such as *-ino*, *-etto*, and *-ello*:

(1)	paese	$\rightarrow$	paesino
	'village'		'small village'

While a common meaning associated with this form is 'physically small', as in (1), this is not the only meaning. In the following example the diminutive signals affection rather than small size:

(2)	mamma	$\rightarrow$	mammina	
	'mum'		'mummy'	

When applied to abstract nouns, the diminutive acquires a meaning of short temporal duration, reduced strength or reduced scale:

(3)	sinfonia 'symphony'	$\rightarrow$	sinfonietta 'sinfonietta' (a shorter symphony, often with fewer instruments)
(4)	cena 'supper'	$\rightarrow$	cenetta 'light supper'
(5)	pioggia 'rain'	$\rightarrow$	'pioggerella 'drizzle'

When the diminutive is suffixed to adjective or adverbs, it serves to reduce intensity or extent:

(6) bello  $\rightarrow$  bellino 'beautiful' 'pretty/cute' (7) bene  $\rightarrow$  benino 'well' 'quite well'

When the diminutive is added to verbs (the verbal diminutive suffixes are *-icchiare* and *-ucchiare*) a process of intermittent or poor quality is signalled:

(8)	dormire 'sleep'	$\rightarrow$	dormicchiare 'snooze'
(9)	lavorare 'work'	$\rightarrow$	lavoricciare 'work half-heartedly'
(10)	parlare 'speak'	$\rightarrow$	parlucchiare 'speak badly' [e.g. a foreign language]

What these examples illustrate is that the diminutive in Italian doesn't have a single meaning associated with it, but instead constitutes a category of meanings which behave in a variety of distinct ways but nonetheless do appear to be related to one another. The category shares a related form and a related set of meanings: a reduction in size, quantity or quality. Hence, the category exhibits family resemblance.

## Categorisation in syntax: 'parts of speech'

The received view in linguistics is that words can be classified into classes such as 'noun' and 'verb', traditionally referred to as **parts of speech**. According to this view, words can be classified according to their morphological and distributional behaviour. For example, a word formed by the addition of a suffix like *-ness* (for example, *happi-ness*) is a noun; a word that can take the plural suffix *-s* (for example, *cat-s*) is a noun; and a word that can fill the gap following a sequence of determiner *the* plus adjective *funny* (for example, *the funny* \_\_\_\_\_) is a noun. In modern linguistics, the existence of word classes is posited not only for practical purposes (that is, to provide us with a tool of description), but also in an attempt to explain how it is that speakers 'know' how to build new words and how to combine words into grammatical sentences. In other words, many linguists think that these word classes have psychological reality.

However, when we examine the grammatical behaviour of nouns and verbs, there is often significant variation in the nature of the grammatical 'rules' they observe. This suggests that the categories 'noun' and 'verb' are not homogenous, but instead that certain nouns and verbs are 'nounier' or 'verbier' – and hence more representative – than others. In this sense, parts of speech constitute fuzzy categories.

By way of illustration, consider first the **agentive nominalisation** of **transitive** verbs. A transitive verb is a verb that can take an object, such as *import*  (e.g. rugs) and *know* (e.g. a fact). However, while transitive verbs can often be nominalised – that is, made into 'agentive' nouns like *driver*, *singer* and *helper* – some verbs, such as *know*, cannot be:

(11)	a.	John imports rugs $\rightarrow$
		John is an importer of rug

b. John knew that fact  $\rightarrow$ \*John was the knower of that fact

Now consider a second example. While verbs can often be substituted by the 'be V-able' construction, this does not always give rise to a well-formed sentence:

(12) a.	His handwriting can be read	$\rightarrow$
	His handwriting is readable	

b. The lighthouse can be spotted  $\rightarrow$  \*The lighthouse is spottable

Finally, while most transitive verbs undergo passivisation, not all do:

- (13) a. John kicked the ball  $\rightarrow$ The ball was kicked by John
  - b. John owes two pounds →
     \*?Two pounds are owed by John

Despite these differences, these verbs do share some common 'verbish' behaviour. For example, they can all take the third person present tense suffix *-s* (*s/he import-s/know-s/read-s/spot-s/kick-s/owe-s*...). Therefore, while certain verbs fail to display some aspects of 'typical' verb behaviour, this does not mean that these are not part of the category VERB. In contrast, this variation shows us that there is not a fixed set of criteria that serves to define what it means to be a verb. In other words, the linguistic category VERB contains members that are broadly similar yet exhibit variable behaviour, rather like the physical artefact category CUP.

Now let's consider the linguistic category NOUN. While nouns can be broadly classified according to the morphological and distributional criteria we outlined above, they also show considerable variation. For example, only some nouns can undergo what formal linguists call **double raising**. This term applies to a process whereby a noun phrase 'moves' from an embedded clause to the subject position of the main clause via the subject position of another embedded clause. If you are not familiar with the grammatical terms 'noun phrase', 'subject' or '(embedded) clause', the schematic representation in (14) should help. Noun

phrases, which are units built around nouns (but sometimes consist only of nouns (for example in the case of pronouns like *me* or proper names like *George*), are shown in boldtype. Square brackets represent the embedded clauses (sentences inside sentences) and the arrows show the 'movement'. Subject positions are underlined:

- (14) a. <u>It is likely [</u> to be shown [that <u>John</u> has cheated]]  $\rightarrow$ 
  - b. John is likely [ \_\_\_\_\_ to be shown [ \_\_\_\_\_ to have cheated]]

As these examples show, the noun phrase (NP) *John* can only occupy the subject position of a finite or tensed clause: when the verb appears in its 'to infinitive' form (for example, to be/to have), the NP *John* (which we interpret as the 'doer' of the cheating regardless of its position within the sentence) has to 'move up' the sentence until it finds a finite verb like *is*. However, some nouns, like *headway*, do not show the same grammatical behaviour:

- (15) a. <u>It is likely [</u> \_\_\_\_\_ to be shown [that <u>no headway</u> has been made]]  $\rightarrow$ 
  - b. \*<u>No headway</u> is likely [\_\_\_\_\_ to be shown [\_\_\_\_\_ to have been made]]

Our next example of variation in the behaviour of nouns concerns question tag formation, a process whereby a **tag question** such as *isn't it?*, *don't you?* or *mustn't he?* can be tagged onto a sentence, where it picks up the reference of some previously mentioned unit. For example, in the sentence *Bond loves blondes, doesn't he?* The pronoun *he* refers back to the subject noun phrase *Bond.* Despite the fact that this grammatical process can apply more or less freely to any subject noun phrase, Taylor (2003: 214) argues that there are nevertheless 'some dubious cases'. For example, the use of a question tag with the noun *heed* is at best marginal:

- (16) a. Some headway has been made.  $\rightarrow$ Some headway has been made, hasn't it?
  - b. Little heed was paid to her.  $\rightarrow$  ?\*Little heed was paid to her, was it?

As we saw with verbs, examples can always be found that illustrate behaviour that is at odds with the 'typical' behaviour of this category. Although most linguists would not consider this variation sufficient grounds for abandoning the notion of word classes altogether, this variation nevertheless illustrates that categories like NOUN and VERB are not uniform in nature, but are 'graded' in the sense that members of these categories exhibit variable behaviour.

#### Categorisation in phonology: distinctive features

One of the fundamental concepts in phonology is the **distinctive feature**: an articulatory feature that serves to distinguish speech sounds. For example, the sounds /b/ and /p/ are identical in terms of **place** and **manner** of articulation: both are bilabial sounds (produced by bringing the two lips together) and both are plosives (produced by momentary interruption of the airflow followed by sudden release). However, the two sounds are distinguished by the single feature voice: the phenomenon whereby the vocal folds in the larynx are drawn tightly together and vibrate as air passes through them, which affects the quality of the sound. The speech sound /b/ is voiced, whereas /p/ is produced with the vocal folds drawn apart, and is therefore unvoiced. This articulatory feature distinguishes many pairs of consonant sounds that otherwise have a similar manner and place of articulation, for example: /t/ and /d/, as in *tug* versus *dug*; /k/ and /g/, as in *curl* versus *girl*; and /s/ and /z/, as in *Sue* versus *zoo*.

In phonology, these **distinctive features** are traditionally viewed as binary features. In other words, a speech sound can be described in terms of whether it has a positive or a negative value for a certain feature. Binary features are popular in formal linguistics, because they enable linguists to describe units of language by means of a set of properties known as a **feature matrix**. This approach has proven particularly successful in phonology. For example, the sounds /p/ and /b/ can be characterised as follows:

(17)	/p/	/b/
	( + bilabial )	( + bilabial )
	+ plosive	+ plosive
	$\left(-\text{voice}\right)$	(+ voice)

However, Jaeger and Ohala (1984) presented research that questions the assumption that distinctive features are binary in nature. In fact, Jaeger and Ohala found that features like voice are judged by actual users of language as graded or fuzzy categories. Jaeger and Ohala trained naive speakers of English (that is, non-linguists), so that they could identify sounds according to whether they were [+ voice] or [- voice]. They then asked subjects to rate the English plosives, fricatives, nasals and semi-vowels in terms of the voice feature. While plosives involve a sudden release of air from the mouth, fricatives are produced by the gradual release of airflow in the mouth: these are sounds like /f/, /v/, /s/, /z/, and so on. Nasals like /m/ and /n/ involve continuous (uninterrupted) airflow

through the nose, and semi-vowels like /w/ and /j/ (which is the IPA symbol for the sound at the start of *yellow*) involve continuous airflow through the mouth.

The researchers found that these sounds were not consistently judged as either voiced or unvoiced. Instead, some sounds were judged as 'more' or 'less' voiced than others. The 'voice continuum' that resulted from Jaeger and Ohala's study is shown in (18a):

(18) a.	$\leftarrow$ most v	voiced	least voiced $\rightarrow$			
	/r,m,n/	/v,ð,z/	/w,j/	/b,d,g/	/f,θ,s,h,∫/	/p,t,k/
b.	/r,m,n/	/v,ð,z/	/w,j/	/b,d,g/	/f,θ,s,h,∫/	/p,t,k/
	←	- voiced		$\longrightarrow$	$\leftarrow$ voicel	$ess \longrightarrow$

The sounds were rated accurately by Jaeger and Ohala's subjects in the sense that voiced and voiceless sounds do not overlap but can be partitioned at a single point on this continuum, as shown in (18b). However, what is striking is that the subjects judged some voiced sounds (like /m/) as 'more voiced' than others (like /z/). These findings suggest that the phonological category VOICED SOUNDS also behaves like a fuzzy category.

Taken together, the examples we have considered from the three 'core' structural areas of human language – morphology, syntax and phonology – suggest that the nature of the linguistic categories we find in each of these areas can be described in rather similar terms. In other words, at least in terms of categorisation, we can generalise across what are often thought of as wholly distinct kinds of linguistic phenomena.

It is worth pointing out at this stage that cognitive linguistics is not unique in seeking to generalise across these 'distinct' areas of human language. Indeed, the quest for binary features in formal linguistics is one example of such an attempt. Encouraged by the relative usefulness of this approach in the area of phonology, formal linguists have, with varying degrees of success, also attempted to characterise word meaning and word classes in terms of binary features. This approach reflects an attempt to capture what are, according to many linguists, the fundamental properties of human language: the 'design features' discreteness and duality of patterning. Broadly, these features refer to the fact that human language is made of smaller discrete units (like speech sounds, morphemes and words) that can be combined into larger units (like morphemes, words and sentences), and that the capacity for varying the patterns of combination is part of what gives human language its infinite creativity (compare bin with nib, or Bond loves blondes with blondes love Bond, for example). Thus different theories of human language are often united in pursuing the same ultimate objectives - here, generalisation - but differ in terms of where and how they seek to reach these objectives.

# Polysemy

**Polysemy** is the phenomenon where a single linguistic unit exhibits multiple distinct yet related meanings. Traditionally, this term is restricted to the area of word meaning (**lexical semantics**), where it is used to describe words like *body* which has a range of distinct meanings that are nevertheless related (for example, the human body; a corpse; the trunk of the human body; the main or central part of something). Polysemy is contrasted with **homonymy**, where two words are pronounced and/or spelt the same way, but have distinct meanings (compare *sole* with *soul*, for example, which are pronounced the same way but which no speaker of English would be likely to judge as having related meanings).

Cognitive linguists argue that polysemy is not restricted to word meaning but is a fundamental feature of human language. According to this view, the 'distinct' areas of language all exhibit polysemy. Cognitive linguists therefore view polysemy as a key to generalisation across a range of 'distinct' phenomena, and argue that polysemy reveals important fundamental commonalities between lexical, morphological and syntactic organisation. Let's look at a few examples.

# Polysemy in the lexicon: over

We begin by considering evidence for polysemy at the level of lexical organisation. The word we will consider is the much studied English preposition *over*. Consider the following examples:

(19)	a.	The picture is over the sofa.	ABOVE
	b.	The picture is over the hole.	COVERING
	c.	The ball is over the wall.	ON-THE-OTHER-SIDE-OF
	d.	The government handed over power.	TRANSFER
	e.	She has a strange power over me.	CONTROL

These sentences illustrate various senses of *over*, which are listed in the righthand column. While each is distinct, they can all be related to one another; they all derive from a central 'above' meaning. We will explore this point in more detail later in the book (see Chapter 10).

# Polysemy in morphology: agentive -er suffix

Just as words like *over* exhibit polysemy, so do morphological categories. Consider the bound morpheme *-er*, the agentive suffix that was briefly discussed earlier in the chapter:

- (20) a. teacher
  - b. villager
  - c. toaster
  - d. best-seller

In each of the examples in (20), the *-er* suffix adds a slightly different meaning. In (20a) it conveys a human AGENT who regularly or by profession carries out the action designated by the verb, in this instance *teach*. In (20b), *-er* relates to a person who lives in a particular place, here a village. In (20c) *-er* relates to an artefact that has the capacity designated by the verb, here *toast*. In (20d) *-er* relates to a particular quality associated with a type of artefact, here the property of selling successfully. Each of these usages is distinct: a teacher is a person who teaches; a toaster is a machine that performs a toasting function; a best-seller is an artefact like a book that has the property of selling well; and a villager is a person who dwells in a village. Despite these differences, these senses are intuitively related in terms of sharing, to a greater or lesser degree, a defining functional ability or attribute: the ability to teach; the 'ability' to toast; the attribute of selling well; and the attribute of dwelling in a specific location. This demonstrates the capacity of morphological categories to exhibit polysemy.

## Polysemy in syntax: ditransitive construction

Just as lexical and morphological categories exhibit polysemy, so do syntactic categories. For instance, consider the **ditransitive construction**, discussed by Goldberg (1995). This construction has the following syntax:

(21) SUBJECT VERB OBJECT 1 OBJECT 2

The ditransitive construction also has a range of conventional abstract meanings associated with it, which Goldberg characterises in the terms shown in (22). Note for the time being that terms like AGENT PATIENT and RECIPI-ENT are labels for 'semantic roles', a topic to which we return in Part III of the book.

- (22) a. SENSE 1: AGENT successfully causes recipient to receive PATIENT INSTANTIATED BY: verbs that inherently signify acts of giving (e.g. give, pass, hand, serve, feed)
   e.g. [<sub>suef</sub>Mary] [<sub>verb</sub>gave] [<sub>OBI 1</sub> John] [<sub>OBI 2</sub> the cake]
  - b. SENSE 2: conditions of satisfaction imply that AGENT causes recipient to receive PATIENT
    INSTANTIATED BY: verbs of giving with associated satisfaction conditions (e.g. *guarantee*, *promise*, *owe*)
    e.g. Mary promised John the cake
  - c. SENSE 3: AGENT causes recipient not to receive PATIENT INSTANTIATED BY: verbs of refusal (e.g. *refuse*, *deny*) e.g. Mary refused John the cake

- d. SENSE 4: AGENT acts to cause recipient to receive PATIENT at some future point in time
  INSTANTIATED BY: verbs of future transfer (e.g. *leave*, *bequeath*, *allocate*, *reserve*, *grant*)
  e.g. Mary left John the cake
- e. SENSE 5: AGENT enables recipient to receive PATIENT INSTANTIATED BY: verbs of permission (e.g. *permit*, *allow*) e.g. Mary permitted John the cake
- f. SENSE 6: AGENT intends to cause recipient to receive PATIENT INSTANTIATED BY: verbs involved in scenes of creation (e.g. *bake*, *make*, *build*, *cook*, *sew*, *knit*)
  e.g. Mary baked John the cake

While each of the abstract senses associated with 'ditransitive' syntax are distinct, they are clearly related: they all concern volitional transfer, although the nature of the transfer, or the conditions associated with the transfer, vary from sense to sense. We will return to discuss constructions like these in more detail in Part III of the book.

In sum, as we saw for categorisation, cognitive linguists argue that polysemy is a phenomenon common to 'distinct' areas of language. Both 'fuzzy' categories and polysemy, then, are characteristics that unite all areas of human language and thus enable generalisation within the cognitive linguistics framework.

# Metaphor

Cognitive linguists also argue that metaphor is a central feature of human language. As we saw in the previous chapter, metaphor is the phenomenon where one conceptual domain is systematically structured in terms of another. One important feature of metaphor is **meaning extension**. That is, metaphor can give rise to new meaning. Cognitive linguists argue that metaphor-based meaning extension can also be identified across a range of 'distinct' linguistic phenomena, and that metaphor therefore provides further evidence in favour of generalising across the 'distinct' areas of language. In this section we'll consider lexicon and syntax.

# Metaphor in the lexicon: over (again)

In the previous section we observed that the preposition *over* exhibits polysemy. One question that has intrigued cognitive linguists concerns how polysemy is motivated. That is, how does a single lexical item come to have a multiplicity of distinct yet related meanings associated with it? Lakoff (1987) has argued that an important factor in motivating meaning extension, and hence the existence of polysemy, is metaphor. For instance, he argues that the CONTROL meaning of *over* that we saw in (19e) derives from the ABOVE meaning by virtue of metaphor. This is achieved via application of the metaphor CONTROL IS UP. This metaphor is illustrated by (23):

- (23) a. I'm on top of the situation.
  - b. She's at the *height* of her powers.
  - c. His power rose.

These examples illustrate that POWER or CONTROL is being understood in terms of greater elevation (UP). In contrast, lack of power or lack of control is conceptualised in terms of occupying a reduced elevation on the vertical axis (DOWN), as shown by (24):

- (24) a. Her power is on the *decline*.
  - b. He is *under* my control.
  - c. He's *low* in the company *hierarchy*.

By virtue of the independent metaphor CONTROL IS UP, the lexical item *over*, which has an ABOVE meaning conventionally associated with it, can be understood metaphorically as indicating greater control. Through frequency of use the meaning of CONTROL becomes conventionally associated with *over* in such a way that *over* can be used in non-spatial contexts like (19e), where it acquires the CONTROL meaning.

# Metaphor in the syntax: the ditransitive (again)

One of the observations that Goldberg makes in her analysis of the ditransitive construction is that it typically requires a volitional AGENT in subject position. This is because the meaning associated with the construction is one of *intentional* transfer. Unless there is a sentient AGENT who has the capacity for intention, then one entity cannot be transferred to another. However, we do find examples of this construction where the subject (in square brackets) is not a volitional AGENT:

- (25) a. [The rain] gave us some time.
  - b. [The missed ball] handed him the victory.

Goldberg argues that examples like these are extensions of the ditransitive construction, and are motivated by the existence of the metaphor CAUSAL EVENTS ARE PHYSICAL TRANSFERS. Evidence for this metaphor comes from examples like the ones in (26), which illustrate that we typically understand abstract causes in terms of physical transfer:

- (26) a. David Beckham put a lot of swerve on the ball.
  - b. She gave me a headache.

In these examples causal events like causing a soccer ball to swerve, or causing someone to have a headache, are conceptualised as the transfer of a physical entity. Clearly the English soccer star David Beckham, well known for his ability to 'bend' a football around defensive walls, cannot literally put 'swerve' on a football; 'swerve' is not a physical entity that can be 'put' anywhere. However, we have no problem understanding what this sentence means. This is because we 'recognise' the convention within our language system of understanding causal events metaphorically in terms of physical transfer.

Goldberg argues that it is due to this metaphor that the ditransitive construction, which normally requires a volitional AGENT, can sometimes have a non-volitional subject like *a missed ball* or *the rain*. The metaphor licenses the extension of the ditransitive so that it can be used with non-volitional AGENTs.

To conclude the discussion so far, this section has illustrated the view held by cognitive linguists that various areas of human language share certain fundamental organising principles. This illustrates the 'Generalisation Commitment' adopted by cognitive linguists. One area in which this approach has achieved considerable success is in uniting the lexical system with the grammatical system, providing a unified theory of grammatical and lexical structure. As we will see in Part III, cognitive approaches to grammar treat lexicon and syntax not as distinct components of language, but instead as a continuum. However, the relationship between phonology and other areas of human language has only recently begun to be explored from a cognitive perspective. For this reason, while aspects of the foregoing discussion serve to illustrate some similarities between the phonological subsystem and the other areas of the language system, we will have relatively little to say about phonology in the remainder of this book.

# 2.1.2 The 'Cognitive Commitment'

We turn next to the 'Cognitive Commitment'. We saw above that the 'Generalisation Commitment' leads to the search for principles of language structure that hold across all aspects of language. In a related manner, the 'Cognitive Commitment' represents the view that principles of linguistic structure should reflect what is known about human cognition from other disciplines, particularly the other cognitive sciences (philosophy, psychology,

artificial intelligence and neuroscience). In other words, it follows from the 'Cognitive Commitment' that language and linguistic organisation should reflect general cognitive principles rather than cognitive principles that are specific to language. Accordingly, cognitive linguistics rejects the modular theory of mind that we mentioned above (section 2.1.1). The modular theory of mind is associated particularly with formal linguistics, but is also explored in other areas of cognitive science such as philosophy and cognitive psychology, and holds that the human mind is organised into distinct 'encapsulated' modules of knowledge, one of which is language, and that these modules serve to 'digest' raw sensory input in such a way that it can then be processed by the central cognitive system (involving deduction, reasoning, memory and so on). Cognitive linguists specifically reject the claim that there is a distinct language module, which asserts that linguistic structure and organisation are markedly distinct from other aspects of cognition (see Chapter 4). Below we consider three lines of evidence that, according to cognitive linguists, substantiate the view that linguistic organisation reflects more general cognitive function.

Attention: profiling in language

A very general cognitive ability that human beings have is **attention**, together with the ability to shift attention from one aspect of a scene to another. For instance, when watching a tennis match we can variously attend to the umpire, the flight of the ball back and forth, one or both of the players or parts of the crowd, zooming 'in and out' so to speak. Similarly, language provides ways of directing attention to certain aspects of the scene being linguistically encoded. This general ability, manifest in language, is called **profiling** (Langacker 1987, among others; see also Talmy's (2000) related notion of attentional **windowing**).

One important way in which language exhibits profiling is in the range of grammatical constructions it has at its disposal, each of which serves to profile different aspects of a given scene. For instance, given a scene in which a boy kicks over a vase causing it to smash, different aspects of the scene can be linguistically profiled:

- (27) a. The boy kicks over the vase.
  - b. The vase is kicked over.
  - c. The vase smashes into bits.
  - d. The vase is in bits.

In order to discuss the differences between the examples in (27), we'll be relying on some grammatical terminology that may be new to the reader. We will explain these terms briefly as we go along, but grammatical terms are explained in more detail in the grammar tutorial in Chapter 14. The aspects of the scene profiled by each of these sentences are represented in Figure 2.2. Figure 2.2(a) corresponds to sentence (27a). This is an active sentence in which a relationship holds between the initiator of the action (the boy) and the object that undergoes the action (the vase). In other words, the boy is the AGENT and the vase is the PATIENT. In Figure 2.2(a) both AGENT and PATIENT are represented by circles. The arrow from the AGENT to the PATIENT represents the transfer of energy, reflecting the fact that the AGENT is acting upon the PATIENT. Moreover, both AGENT and PATIENT, as well as the energy transfer, are represented in bold. This captures the fact that the entire **action chain** is being profiled, which is the purpose of the active construction.

Now let's compare sentence (27b). This is a passive sentence, and is represented by Figure 2.2(b). Here, the energy transfer and the PATIENT are being profiled. However, while the AGENT is not mentioned in the sentence, and hence is not in profile, it must be understood as part of the background. After all, an action chain requires an AGENT to instigate the transfer of energy. To represent this fact, the AGENT is included in Figure 2.2(a), but is not featured in bold, reflecting the position that the AGENT is contextually understood but not in profile.

The third sentence, example (27c), profiles the change in the state of the vase: the fact that it smashes into bits. This is achieved via a subject-verbcomplement construction. A complement is an obligatory element that is required by another element in a sentence to complete its meaning. In (27c), the complement is the expression *into bits*, which completes the meaning of the expression *smashes*. This is captured by Figure 2.2(c). In figure 2.2(c) it is the internal change of state of the vase that is profiled. The arrow within the circle (the circle depicts the vase) shows that the vase is undergoing an internal change of state. The state the vase is 'moving to' is represented by the box with the letter 'b' inside it. This stands for the state IN BITS. In this diagram the entity, the change of state and the resulting state are all in bold, reflecting the fact that all these aspects of the action chain are being profiled by the corresponding sentence.



Figure 2.2 Profiling

Finally, consider sentence (27d). The grammatical form of this sentence is the subject-copula-complement construction. The copula is the verb *be*, which is specialised for encoding a particular state. In this case the state is IN BITS, which is captured in Figure 2.2(d).

In sum, each of the constructions ACTIVE, PASSIVE, SUBJECT-VERB-COMPLEMENT and SUBJECT-COPULA-COMPLEMENT is specialised for profiling a particular aspect of an action chain. In this way, linguistic structure reflects our ability to attend to distinct aspects of a scene. These examples demonstrate how linguistic organisation reflects a more general cognitive ability: attention.

It is worth observing at this point that constructions of the kind we have just discussed are not restricted to encoding a canonical action chain (one involving the transfer of energy). For example, the active construction can often be applied in cases where an action is not involved. Consider **stative verbs**, like *own*. A stative verb encodes a relatively stable state that persists over time. This verb can appear in active or passive constructions, even though it describes a state rather than an action:

(28) a	ı.	John not Steve owns the shop on Trafalgar Street.	[active]
ł	э.	The shop on Trafalgar Street is owned	[passive]
		by John not Steve.	

In Part III of the book, we will return in more detail to the issue of grammatical constructions and the range of meanings associated with them.

# Categorisation: fuzzy categories

We saw above that enitites like cups constitute fuzzy categories, which are characterised by the fact that they contain members that are more or less representative of the category. This results in a set of members related by family resemblance rather than a single criterial feature, or a limited set of criterial features possessed by every member of the category. In other words, categories formed by the human mind are rarely 'neat and tidy'. We also saw that fuzzy categories are a feature of language in that members of linguistic categories, despite important similarities, often show quite distinct behaviour. In other words, according to the cognitive framework, the same principles that hold for categorisation in general also hold for linguistic categorisation.

#### Metaphor

As we began to see in the previous chapter, and as we will see in further detail in Chapter 9, the view adopted in cognitive linguistics is that metaphor is a conceptual rather than a purely linguistic phenomenon. Moreover, the key proponents of the conceptual metaphor approach, George Lakoff and Mark Johnson (1980, 1999), argue that many of the ways in which we think and act are fundamentally metaphorical in nature.

For instance, we conceptualise institutions like governments, universities, and businesses in terms of a hierarchy. Diagrams of such institutions place the person with the highest rank at the top or 'head', while the person with the lowest rank is placed at the lowest point or 'bottom'. In other words, hierarchies are conceptualised and represented non-linguistically in terms of the conceptual metaphor CONTROL/POWER IS UP.

Just as metaphors like CONTROL IS UP show up in a range of modalities, that is different 'dimensions' of expression such as social organisation, pictorial representation or gesture, among others, we have begun to see that they are also manifest in language. The English preposition *over* has a conventional CONTROL meaning associated with it, precisely because of meaning extension due to the conceptual metaphor CONTROL IS UP.

In the foregoing discussion, we have explored three ways in which aspects of general cognition show up in language. Evidence of this kind forms the basis of the cognitive argument that language reflects general cognition.

#### 2.2 The embodied mind

In this section, we turn to **embodiment**, a central idea in cognitive linguistics. Since the seventeenth-century French philosopher René Descartes developed the view that mind and body are distinct entities – the principle of **mind/body dualism** – there has been a common assumption within philosophy and the other more recent cognitive sciences that the mind can be studied without recourse to the body, and hence without recourse to embodiment. In modern linguistics this **rationalist approach** has been most evident in formal approaches such as the **Generative Grammar** approach developed by Noam Chomsky (see Chapter 22) and formal approaches to semantics, such as the framework developed by Richard Montague (see Chapter 13). Proponents of these approaches argue that it is possible to study language as a formal or computational system, without taking into account the nature of human bodies or human experience.

In contrast, cognitive linguistics is not rationalist in this sense, but instead takes its inspiration from traditions in psychology and philosophy that emphasise the importance of human experience, the centrality of the human body, and human-specific cognitive structure and organisation, all of which affect the nature of our experience. According to this **empiricist view**, the human mind – and therefore language – cannot be investigated in isolation from human embodiment.

#### 2.2.1 Embodied experience

The idea that experience is embodied entails that we have a species-specific view of the world due to the unique nature of our physical bodies. In other words, our construal of reality is likely to be mediated in large measure by the nature of our bodies.

One obvious way in which our embodiment affects the nature of experience is in the realm of colour. While the human visual system has three kinds of photoreceptors or colour channels, other organisms often have a different number. For instance, the visual system of squirrels, rabbits and possibly cats, makes use of two colour channels, while other organisms, like goldfish and pigeons, have four colour channels. Having a different range of colour channels affects our experience of colour in terms of the range of colours accessible to us along the colour spectrum. Some organisms can see in the infrared range, like rattlesnakes, which hunt prey at night and can visually detect the heat given off by other organisms. Humans are unable to see in this range. As this simple example demonstrates, the nature of our visual apparatus – one aspect of our physical embodiment – determines the nature and range of our visual experience.

Similarly, the nature of our biological morphology (the kinds of body parts we have), together with the nature of the physical environment with which we interact, determines other aspects of our experience. For instance, while gravity is an objective feature of the world, our experience of gravity is determined by our bodies and by the ecological niche we inhabit. For instance, hummingbirds – which can flap their wings up to a remarkable fifty times per second – respond to gravity in a very different way from humans. In order to overcome gravity, hummingbirds are able to rise directly into the air without pushing off from the ground, due to the rapid movement of their wings. Moreover, due to their small size, their experience of motion is rather different from ours: hummingbirds can stop almost instantaneously, experiencing little momentum. Compare this with the experience of a sprinter at the end of a 100m race: a human cannot stop instantaneously but must take a few paces to come to a standstill.

Now consider organisms that experience gravity in an even more different way. Fish, for example, experience very little gravity, because water reduces its effect. This explains their morphology, which is adapted to the ecological niche they inhabit and enables motion through a reduced-gravity environment. The neuroscientist Ernst Pöppel (1994) has even suggested that different organisms might have different kinds of neural 'timing mechanisms' which underpin abilities such as event perception (see Chapter 3). This is likely to affect their experience of time. The idea that different organisms have different kinds of experiences due to the nature of their embodiment is known as variable embodiment.

#### 2.2.2 Embodied cognition

The fact that our experience is embodied – that is, structured in part by the nature of the bodies we have and by our neurological organisation – has consequences for cognition. In other words, the concepts we have access to and the nature of the 'reality' we think and talk about are a function of our embodiment: we can only talk about what we can perceive and conceive, and the things that we can perceive and conceive derive from embodied experience. From this point of view, the human mind must bear the imprint of embodied experience.

In his now classic 1987 book, The Body in the Mind, Mark Johnson proposes that one way in which embodied experience manifests itself at the cognitive level is in terms of image schemas (see Chapter 6). These are rudimentary concepts like CONTACT, CONTAINER and BALANCE, which are meaningful because they derive from and are linked to human pre-conceptual experience: experience of the world directly mediated and structured by the human body. These image-schematic concepts are not disembodied abstractions, but derive their substance, in large measure, from the sensory-perceptual experiences that give rise to them in the first place. Lakoff (1987, 1990, 1993) and Johnson (1987) have argued that embodied concepts of this kind can be systematically extended to provide more abstract concepts and conceptual domains with structure. This process is called **conceptual projection**. For example, they argue that conceptual metaphor (which we discussed briefly above and to which we return in detail in Chapter 9) is a form of conceptual projection. According to this view, the reason we can talk about being in states like love or trouble (29) is because abstract concepts like LOVE are structured and therefore understood by virtue of the fundamental concept CONTAINER. In this way, embodied experience serves to structure more complex concepts and ideas.

- (29) a. George is in love.
  - b. Lily is in trouble.
  - c. The government is in a deep crisis.

The developmental psychologist Jean Mandler (e.g. 1992, 1996, 2004) has made a number of proposals concerning how image schemas might arise from embodied experience. Starting at an early age, and certainly by two months, infants attend to objects and spatial displays in their environment. Mandler suggests that by attending closely to such spatial experiences, children are able to abstract across similar kinds of experiences, finding meaningful patterns in the process. For instance, the CONTAINER image schema is more than simply a spatiogeometric representation. It is a 'theory' about a particular kind of configuration in which one entity is supported by another entity that contains it. In other words, the CONTAINER schema is meaningful because containers are meaningful in our everyday experience. Consider the spatial scene described in (30).

(30) The coffee is in the cup.

Tyler and Evans make the following observations about this spatial scene:

 $\dots$  the spatial scene relating to *in* involves a containment function, which encompasses several consequences such as locating and limiting the activities of the contained entity. Being contained in the cup prevents the coffee from spreading out over the table; if we move the cup, the coffee moves with it. (Tyler and Evans 2003: ix)

It is for this reason that the English preposition *in* can be used in scenes that are non-spatial in nature, like the examples in (29). It is precisely because containers constrain activity that it makes sense to conceptualise POWER and all-encompassing states like LOVE or CRISIS in terms of CONTAINMENT. Mandler (2004) describes this process of forming image schemas in terms of a redescription of spatial experience via a process she labels **perceptual meaning analysis**. As she puts it, '[O]ne of the foundations of the conceptualizing capacity is the image schema, in which spatial structure is mapped into conceptual structure' (Mandler 1992: 591). She further suggests that 'Basic, recurrent experiences with the world form the bedrock of the child's semantic architecture, which is already established well before the child begins producing language' (Mandler 1992: 597). In other words, it is experience, meaningful to us by virtue of our embodiment, that forms the basis of many of our most fundamental concepts.

# 2.2.3 Experiential realism

An important consequence of viewing experience and conceptualisation as embodied is that this affects our view of what reality is. A widely held view in formal semantics is that the role of language is to describe states of affairs in the world. This rests on the assumption that there is an objective world 'out there', which language simply reflects. However, cognitive linguists argue that this **objectivist approach** misses the point that there cannot be an objective reality that language reflects directly, because reality is not objectively given. Instead, reality is in large part constructed by the nature of our unique human embodiment. This is not to say that cognitive linguists deny the existence of an objective physical world independent of human beings. After all, gravity exists, and there is a colour spectrum (resulting from light striking surfaces of different kinds and densities), and some entities give off heat, including body heat, which can only be visually detected in the infrared range. However, the parts of this external reality to which we have access are largely constrained by the ecological niche we have adapted to and the nature of our embodiment. In other words, language does not directly reflect the world. Rather, it reflects our unique human construal of the world: our 'world view' as it appears to us through the lens of our embodiment. In Chapter 1 we referred to human reality as 'projected reality', a term coined by the linguist Ray Jackendoff (1983).

This view of reality has been termed **experientialism** or **experiential realism** by cognitive linguists George Lakoff and Mark Johnson. Experiential realism assumes that there is a reality 'out there'. Indeed, the very purpose of our perceptual and cognitive mechanisms is to provide a representation of this reality, and thus to facilitate our survival as a species. After all, if we were unable to navigate our way around the environment we inhabit and avoid dangerous locations like clifftops and dangerous animals like wild tigers, our cognitive mechanisms would be of little use to us. However, by virtue of being adapted to a particular ecological niche and having a particular form and configuration, our bodies and brains necessarily provide one particular perspective among many possible and equally viable perspectives. Hence, experiential realism acknowledges that there is an external reality that is reflected by concepts and by language. However, this reality is mediated by our uniquely human experience which constrains the nature of this reality 'for us'.

#### 2.3 Cognitive semantics and cognitive approaches to grammar

Having set out some of the fundamental assumptions behind the cognitive approach to language, in this section we briefly map out the field of cognitive linguistics. Cognitive linguistics can be broadly divided into two main areas: **cognitive semantics** and **cognitive (approaches to) grammar**. However, unlike formal approaches to linguistics, which often emphasise the role of grammar, cognitive linguistics emphasises the role of meaning. According to the cognitive view, a model of meaning (a cognitive semantics) has to be delineated before an adequate cognitive model of grammar can be developed. Hence a cognitive grammar assumes a cognitive semantics and is dependent upon it. This is because grammar is viewed within the cognitive framework as a meaningful system in and of itself, which therefore shares important properties with the system of linguistic meaning and cannot be meaningfully separated from it.

The area of study known as cognitive semantics, which is explored in detail in Part II of the book, is concerned with investigating the relationship between experience, the conceptual system and the semantic structure encoded by language. In specific terms, scholars working in cognitive semantics investigate knowledge representation (conceptual structure) and meaning construction (conceptualisation). Cognitive semanticists have employed language as the lens through which these cognitive phenomena can be investigated. It follows that cognitive semantics is as much a model of mind as it is a model of linguistic meaning.

Cognitive grammarians have also typically adopted one of two foci. Scholars like Ronald Langacker have emphasised the study of the cognitive principles that give rise to linguistic organisation. In his theoretical framework **Cognitive Grammar**, Langacker has attempted to delineate the principles that serve to structure a grammar, and to relate these to aspects of general cognition. Because the term 'Cognitive Grammar' is the name of a specific theory, we use the (rather cumbersome) expression 'cognitive (approaches to) grammar' as the general term for cognitively oriented models of the language system.

The second avenue of investigation, pursued by researchers including Fillmore and Kay (Fillmore *et al.* 1988; Kay and Fillmore 1999), Lakoff (1987), Goldberg (1995) and more recently Bergen and Chang (2005) and Croft (2002), aims to provide a more descriptively detailed account of the units that comprise a particular language. These researchers have attempted to provide an inventory of the units of language. Cognitive grammarians who have pursued this line of investigation are developing a collection of theories that can collectively be called **construction grammars**. This approach takes its name from the view in cognitive linguistics that the basic unit of language is a form-meaning symbolic assembly which, as we saw in Chapter 1, is called a **construction**.

It follows that cognitive approaches to grammar are not restricted to investigating aspects of grammatical structure largely independently of meaning, as is often the case in formal traditions. Instead, cognitive approaches to grammar encompass the entire inventory of linguistic units defined as form-meaning pairings. These run the gamut from skeletal syntactic configurations like the ditransitive construction we considered earlier, to idioms, to bound morphemes like the -er suffix, to words. This entails that the received view of clearly distinct 'sub-modules' of language cannot be meaningfully upheld within cognitive linguistics, where the boundary between cognitive semantics and cognitive (approaches to) grammar is less clearly defined. Instead, meaning and grammar are seen as two sides of the same coin: to take a cognitive approach to grammar is to study the units of language and hence the language system itself. To take a cognitive approach to semantics is to attempt to understand how this linguistic system relates to the conceptual system, which in turn relates to embodied experience. The concerns of cognitive semantics and cognitive (approaches to) grammar are thus complementary. This idea is represented in Figure 2.3. The organisation of this book reflects the fact that it is practical to divide up the study of cognitive linguistics into these two areas for purposes of teaching and learning. However, this should not be taken as an indication that these two areas of cognitive linguistics are independent areas of study or research.



Figure 2.3 The study of meaning and grammar in cognitive linguistics

# 2.4 Summary

In this chapter, we have provided an overview of the assumptions and commitments that make cognitive linguistics a distinctive enterprise. We have outlined two key commitments widely shared by cognitive linguists. These are the 'Generalisation Commitment' and the 'Cognitive Commitment'. These two commitments underlie the orientation and approach adopted by cognitive linguists, and the assumptions and methodologies employed in the two main branches of the cognitive linguistics enterprise, cognitive semantics and cognitive (approaches to) grammar. We also introduced the embodied cognition thesis which is central to much research in cognitive linguistics and addresses the nature of the relationship between language, mind and experience. The view taken in cognitive linguistics is that conceptual organisation within the human mind is a function of the way our species-specific bodies interact with the environment we inhabit. Finally, we provided a brief overview of cognitive semantics and cognitive approaches to grammar which are addressed in detail in Part II and Part III of the book, respectively.

# **Further reading**

# Assumptions in cognitive linguistics

The following are all articles by leading cognitive linguists that set out the assumptions and the nature of the cognitive linguistics enterprise:

• Fauconnier (1999). A discussion of methodological issues and the nature of the approach adopted in cognitive linguistics, particularly with respect to meaning. Fauconnier, one of the early pioneers in

cognitive linguistics, illustrates with examples from the theory of conceptual blending, which he developed in joint work with Mark Turner.

- Lakoff (1990). In the first part of this important article, published in the very first volume of the journal *Cognitive Linguistics*, Lakoff discusses issues relating to the 'Generalisation Commitment' and the 'Cognitive Commitment'. He also explains how cognitive linguistics differs from Generative Grammar.
- Langacker (1999a). An important article by another pioneering figure in cognitive linguistics. In this article, Langacker evaluates the approach and methodologies employed in cognitive linguistics and relates this to the formalist and functionalist traditions in linguistics. He illustrates with a discussion from some of the key constructs in his Cognitive Grammar framework.
- Talmy (2000: Vol. I, 1–18). In the introduction to his two-volume edifice, *Toward a Cognitive Semantics*, Talmy outlines his view of the cognitive linguistics enterprise and describes how his own work fits in with and has contributed to this endeavour.

# Embodied cognition

- Clark (1997). Drawing on recent work in robotics, neuroscience, psychology and artificial intelligence, Clark, a leading cognitive scientist, presents a compelling and highly accessible overview of the new science of the embodied mind.
- Evans (2004a). This book addresses how time, a fundamental aspect of human experience, is conceptualised. The discussion relates neurological, phenomenological and sensory-perceptual aspects of embodied experience to the experience of temporal cognition as revealed by language. Chapter 4 provides a presentation of some key arguments for the cognitive linguistics perspective on embodied cognition.
- Lakoff (1987). This is a classic work by one of the pioneers in cognitive linguistics. Part II of the book is particularly important for the development of experiential realism.
- Lakoff and Johnson (1980). This short volume laid the foundations for the approach to embodied cognition in cognitive linguistics.
- Lakoff and Johnson (1999). This represents an updated account of experiential realism as developed by Lakoff and Johnson (1980).
- Mandler (2004). Influential developmental psychologist Jean Mandler argues for the role of image schemas in the development of conceptual structure and organisation.