Hubert Kowalewski

A Short Introduction to Cognitive Grammar

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Acknowledgments

Preface

The aim of this book is to present the theory of Cognitive Grammar (CG for short) to readers with little prior knowledge about linguistics. The theory has been used and developed since the early 1980s and its main author is the American linguist Ronald W. Langacker, who was influenced by earlier work of Leonard Talmy. Cognitive Grammar is a part of a larger constellation of theories gathered under the umbrella term *cognitive linguistics*, which have grown from (and sometimes in opposition to) other 20th-century approaches to the study of language, mainly Noam Chomsky's Generative Grammar. Given space limitations in this book the intricacies of the historical development of CG and the complicated interrelationships with other theoretical paradigms are beyond the scope of this short textbook.

During several decades of development, CG has become a rich and complex theoretical framework for describing a wide range of linguistic phenomena. As the title suggests, this book is designed to provide a concise and accessible overview of CG rather than an in-depth and comprehensive exposition of this theory. To use a cinematic metaphor, you can perhaps think of *A Short Introduction…* as an extended trailer for an epic multipart saga presented in two volumes by Ronald Langacker *Foundations of Cognitive Grammar*, followed by the sequel *Cognitive Grammar. A Basic Introduction*, with a few spin-offs, including *Concept, Image, and Symbol*, as well as *Grammar and Conceptualization*, followed by John R. Taylor's retake on the topic, entitled *Cognitive Grammar*. This "trailer" volume is meant to give you a sneak peek into the theory discussed more thoroughly in the above-mentioned texts and to equip you with basic concepts that will be helpful in further explorations.

The book grew from a collection of texts written originally as "companions" to the lectures on Cognitive Grammar taught by me at Maria Curie-Skłodowska University

in Lublin (Poland). Both the form and the content of *A Short Introduction…* have been influenced by the format of the course. The textbook is divided into concise chapters – each of which can be read in one sitting. Subsequent chapters build upon the information provided by the previous ones and progress from the basic tenets of Cognitive Grammar, via CG's take on the basic problems of theoretical linguistics (e.g. the definition of grammatical classes) to analyses of increasingly complex linguistic data: words, composite phrases, sentences, and discourses. The final two chapters go beyond the intricacies of technical analysis of data – instead they discuss practical applications of Cognitive Grammar outside theoretical linguistics and sketch a picture of the framework informed by modern philosophy of science.

1. What is Cognitive Grammar?

Producing and understanding utterances in a given language is a skill. While linguists sometimes talk about linguistic knowledge, to know a language is not only to be familiar with the meanings of words that one can find in a dictionary. It is to know how to use them in sentences in specific circumstances, so that they sound natural to other speakers. The act of using a linguistic expression in particular circumstances is termed a **usage event**. You may memorize the dictionary of a language, but this does not mean that you are able to speak this language. Thus, if speaking a language involves knowledge, it is rather an "active" knowledge on how to use language rather than a "passive" knowledge of word meanings. Linguistic knowledge is tacit and intuitive; that is to say, fluent speakers of a language are able to use the language correctly, but they do not have conscious access to knowledge of the mechanisms responsible for language production and comprehension. This can be compared to riding a bicycle. While cyclists are able to maintain balance while riding, it would be very difficult for them to explain how they do it. By the same token, even though we are all capable of producing well-formed sentences in our mother tongues, we do not quite know how we do it. This is one of the reasons why even native speakers of languages may still want to learn about the grammars of their mother tongues.

1.1. What is grammar?

In linguistics, the theories that attempt to reveal mechanisms underlying language use are called "grammars." **Cognitive Grammar** (CG for short), developed primarily by the American linguist Ronald W. Langacker, is one such theory. It belongs to a branch of language studies called "cognitive linguistics." Theories within cognitive linguistics offer models of various linguistic phenomena and they all share several

basic assumptions about the nature of language. The most important assumption is signaled in the very term *cognitive linguistics*: the belief that human language cannot be properly and fully understood in isolation from more general cognitive capacities. These capacities include, but are not limited to, categorization (the ability to group things, person, events, etc. into categories familiar to speakers), the perception of similarities and relations, the ability to focus attention on certain aspects of objects and situations, and the ability to form mental representations of things and events in the world. These cognitive abilities are not limited or specific to language; on the contrary, they are essential to our survival in the world around us and most probably pre-date the emergence of linguistic skills in our prehistoric ancestors. Thus, the ability to speak is just another way in which the capacities manifest themselves in our lives. To sum up, Cognitive Grammar is a theory that describes the mechanisms underlying language use by attempting to reveal the connections between language and cognition.

At this juncture, it is worth noting that the word *grammar* has several related meanings. Perhaps a more familiar meaning of the term is closer to "a set of rules governing the proper use of language." In linguistics, this is often referred to as **prescriptive grammar**. Strictly speaking, prescriptive grammar is not a theory of how language "*is*" used, but rather a collection of rules and prescriptions about how language "should be" used, and is formulated by whoever feels that they have the authority to dictate speech behaviors to others. Cognitive Grammar is *not* a prescriptive grammar in this sense. Rather, it is a so-called **descriptive grammar**, that is, a theory of how and why people speak the way they do. Unlike prescriptive grammars, which attempt to propose the rules of "proper" use of language, most descriptive grammars attempt to propose the models of speakers' linguistic knowledge.

1.2. The symbolic nature of grammar

One of the fundamental assumptions of CG is the so-called **symbolic thesis**, which states that words and linguistic expressions are pairings of phonological forms and meanings. This is true for all meaningful linguistic structures on all levels of linguistic organization: morphemes (i.e. meaningful parts of words), words, phrases (i.e. groups of words smaller than sentences), sentences, and larger discourses comprising multiple entences. Phonemes, roughly corresponding to single sounds, are an exception. They are inherently devoid of meaning, so they do not function as pairings of forms and meanings, and therefore the symbolic thesis does not apply to them.

The term *phonological form* may be somewhat misleading since it suggests that the form in question is a physical sound, i.e. actual vibrations of air produced while

speaking. However, in Cognitive Grammar a phonological form is in fact a concept of sounds associated with words rather than actual sounds. Roughly speaking, the phonological form *cat* is what that you "hear" when you say the word in your mind, without engaging your speech organs and producing any physical sounds. The term may also refer to a concept of a written form of a word (but again: not to an actual word written on a physical surface). Moreover, the term is also used in cognitive studies on sign languages, once again with the proviso that it refers to the concept of a gesture used by a signer rather than an actual physical gesture produced in a usage event. In sum, the term *phonological form* should be taken as shorthand for a concept of a linguistic form used to express a meaning, regardless of whether the form has anything to do with actual aural or physical sounds.

In a way, the symbolic thesis is a return to the view proposed by the Swiss linguist Ferdinand de Saussure in his seminal 1916 book *Course in General Linguistics* (1966 [1916]).[1] For both de Saussure and Langacker words are associations between (conceptual) phonological forms and meanings. Yet there are crucial differences between the two linguists. Firstly, de Saussure was silent about whether structures smaller than words (like morphemes) and larger than words (like phrases and sentences) can also be considered as pairings of phonological forms and meanings, whereas Langacker stipulates that this is, in fact, the case. Secondly, for de Saussure phonological forms and meanings were inseparably connected: one always evoked the other. To use his metaphor, the phonological form and the meaning of a word are like two sides of a sheet of paper – they could not be separated and could not exist without each other. Cognitive grammarians take a less radical position: in principle, the concepts we entertain in our minds are not so intimately tied to phonological forms and they could exist in more or less unchanged form even if we did not have any words to express them. Thirdly, de Saussure is famous for proposing the notion of the arbitrariness of linguistic signs: the claim that phonological forms are associated with meanings exclusively by convention. For example, for de Saussure there are no good reasons for associating the phonological form *cat* with the meowing domestic feline other than the fact that the community of English speakers agree that this is the word for the animal. However, cognitive linguists in general, and cognitive grammarians in particular, will argue that words and linguistic expressions are usually motivated, i.e. speakers often have some deeper reasons for saying things the way they do. Many of these reasons are intimately connected to cognition, i.e. the way we perceive and understand the world around us. In the next chapter we

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[1]   An influence acknowledged by Langacker (1987, 10–11) and discussed extensively by John Taylor (2002, chap. 3).

will discuss in more detail some cognitive mechanisms of meaning-making and their consequences for language.

1.3. Typographic conventions

Throughout this book special typographic conventions are used. Thus, words and expressions under discussion are written in italic (e.g. *cat*). Meanings of word and expressions, i.e. concepts expressed by them, are written in small capitals (e.g. CAT). Domains, to be introduced shortly in the next chapter, are marked with small capitals enclosed with square brackets (e.g. [CAT]). The asterisk (*) signals that the expression is ungrammatical (e.g. **cat roof on a*) and question marks (???) that the expression is dubious (???*a catful of food*).

Study questions

1. Can you think of any other examples of an "active" knowledge on how to do things, as opposed to a "passive" knowledge about the rules governing actions?
2. Do you think it is important to educate people about the "correct" use of language, as prescriptive grammarians do?
3. Can you think of types of signs consisting of pairings of form and meaning other than words and linguistic expressions?

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  ◦ Chapters 1–3

2. Construal

There are many ways of presenting objects and events that we encounter in the world. A specific cat sitting on your lap can be described as

(1) (a) *an animal* (c) *my sweet little ball of fur*
    (b) *the cat* (d) *a vicious bird killer*

The expressions in (1a)–(1d) depict one and the same cat differently. (1a) is more general than (1b), (1b) is less emotionally charged than (1c) and (1d), while (1c) is more affectionate than (1d). Also, (1a) and (1d) present the creature as a somewhat unspecified member of broader classes, ANIMAL and VICIOUS BIRD KILLER, respectively, while in (1b) and (1c) the cat is specified to a certain degree; for instance, in (1c) it is identified as a pet belonging to the speaker. More technically, we could state that even though all the sentences refer to the same animal, they express different mental representations of the referent in the mind of the speaker.

2.1. What is construal?

In Cognitive Grammar, **construal** is an alternate way of presenting an object or an event. It should be emphasized that construal is not merely a different verbal description of the referent, but it is a way of "imagining" the referent in the mind of the speaker. The ability to produce various mental representations of objects and events is one of the most important cognitive capacities postulated by Cognitive Grammar and one that does a lot of "explanatory work" in the theory. Within the CG framework, linguistic meanings are identified with construals, i.e. there is no "special" type of linguistic meaning independent of the mental representation. Put

differently, the meaning of a word or an expression is the mental imagery evoked by the word or the expression. But how do construals arise in our minds?

The knowledge that we have about the world is not a loose mass of disorganized and disconnected information. On the contrary, the information is organized into so-called **domains**. A domain collects all the information that the speaker has about a particular subject matter. For example, the domain [CAT] gathers all the information that a speaker has about cats. This means that domains are usually very rich in information. In order to recruit the knowledge for the purpose of producing a linguistic expression, some portion of the domain has to be selected and its content has to be "highlighted" in a certain way. Alternate construals of one referent[2] arise when various portions of the relevant domain are highlighted in different ways. You can think about this "highlighting" as giving more attention to certain aspects of the referent in order to "depict" it in a certain way in a speaker's mind. For example, the construal behind (1d) highlights the information that the cat in question kills birds in a vicious manner. By contrast, (1c) highlights the information that the cat curls up in a ball, has fur, and the speaker perceives the animal as "sweet." To sum up, the term *construal* refers to the way in which various information in a domain is highlighted for the purpose of linguistic communication.

2.2. Dimensions of construal

In order to characterize a construal, we need to characterize several **dimensions**. One of them is the distinction between the **profile** and the **base**. The profile is a technical term for the already mentioned part of the domain that is highlighted. The portion of the domain against which the profile is highlighted is the base for this profile. The relation between the profile and the base can be understood metaphorically as the relation between the foreground and the background in a painting. While in most paintings certain elements are in the foreground, i.e. they are presented in a way that "stands out" and draws most viewers' attentions, the elements are always viewed against a background. Elements in the background are less prominent almost by definition, but they nonetheless provide the context against which the elements in the foreground are interpreted. In a picture of a cat frolicking happily in a meadow, the cat may be the foregrounded element attracting most of viewer's attention, but removing the meadow from the background would change the painting dramatically. Therefore, in order to fully characterize a construal, it is necessary to describe both the elements highlighted in the profile and the portion of the domain serving as the base.

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[2]   For our purposes, we may define the referent as the entity or the event that the speaker has in mind while using a word or an expression.

Let us take a more language-oriented example. As already mentioned, the meaning of a word, for example, *peninsula* is simply the mental representation of a peninsula in the mind of the speaker. The base for the representation is the domain [LANDMASS] collecting all knowledge the speaker has about landmasses. Some portion of the domain is highlighted and this portion functions as the profile. This construal is presented schematically in Figure 1. While the key meaning of *peninsula* is simply the profile, it should be borne in mind that in order to provide a complete description of the meaning, it is necessary to characterize not only the highlighted profile, but also its base. In other words, it is necessary to add that the profile stands against the speaker's background knowledge about landmasses.
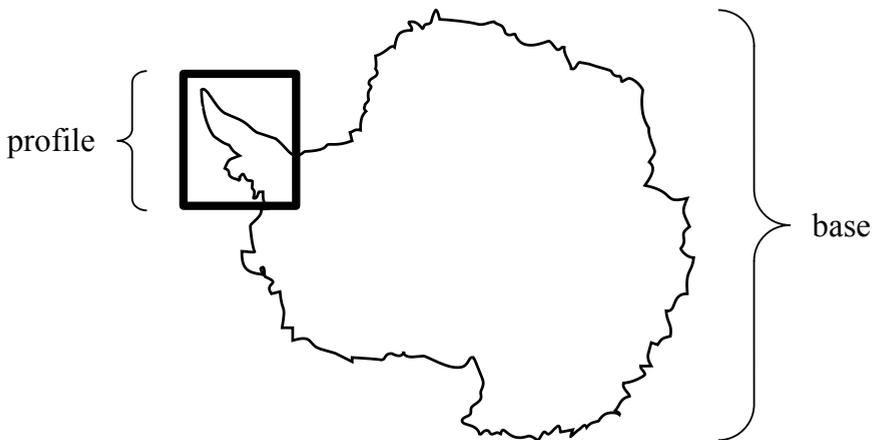
Figure 1: The construal behind *peninsula*

Multiple words may share the same base and differ only with respect to which portion of the domain is highlighted. Take, for example, the names of days of the week. All of them share the notion of the seven-day cycle that we use to organize our lives, which forms the domain [WEEK] and serves as the base for the profile. The key difference between the words *Monday* and *Friday* lies in the part of the base that they highlight: the former profiles the first day of the cycle (Figure 2(a)) and the latter the fifth day (Figure 2(b)).

Something similar happens in the case of adjectives, like *heavy* and *light*. A more detailed characterization of the semantics of adjectives will be given in Chapter 3, but at this point we may accept that both of the words profile relations to a region on a weight scale. The scale serves as the base for the construal and has a region of "standard" weight, which is the normal and expected weight of an object (whatever this might be). Now, *heavy* profiles the region "above" the standard weight (Figure 3(a)), when the object is judged to be heavier than normal or expected, and *light* profiles the

region "below" the standard, when the object is judged to be lighter than normal and expected. Once again the construals behind the two words use the same conceptual base and they differ only with respect to the part of the base that they highlight.
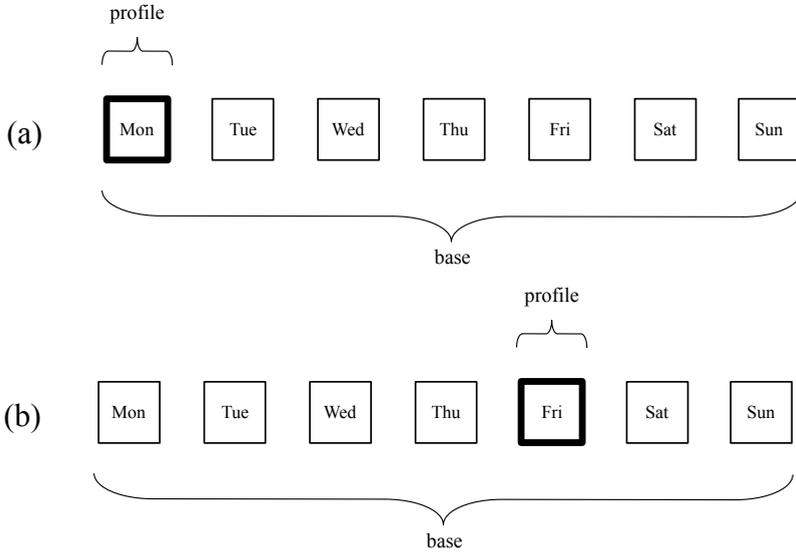
Figure 2: The construals behind *Monday* (a) and *Friday* (b)
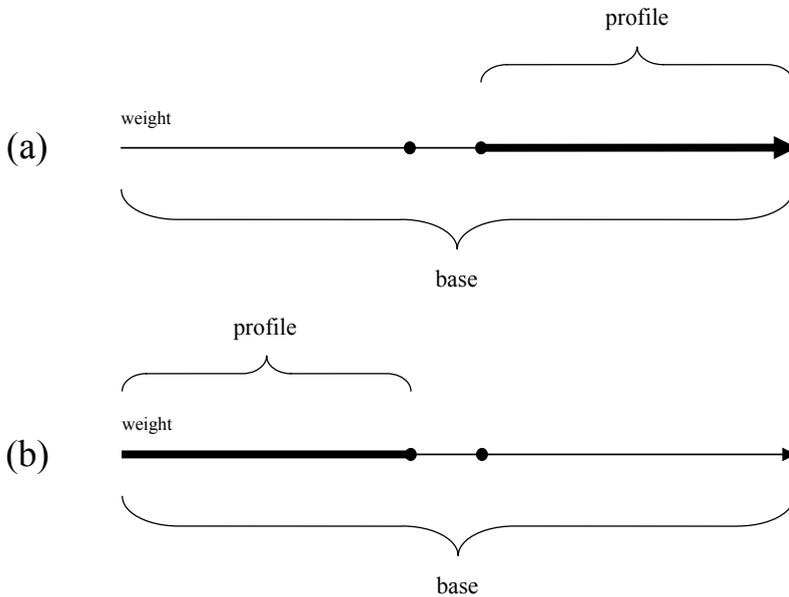
Figure 3: The construals behind *heavy* (a) and *light* (b)

Another dimension of construal is the **scope of domain** which is evoked to characterize the referent. During profiling it is not always necessary to activate all of the knowledge gathered in a domain; oftentimes only a limited portion of the domain is enough. More technically, it is useful to draw the distinction between the **maximal scope**, spanning across the entire domain and embracing effectively all knowledge about a certain topic, and the **immediate scope**, which is a smaller portion of the domain relevant for the purpose of conceptualization at hand. Langacker (2008, 64) illustrates the distinction with the way we think about certain part-whole relations. Consider the hierarchy of body parts (the symbol ">" stands for the relation "has part"): BODY>ARM>HAND>FINGER>KNUCKLE. Within this hierarchy, each element is most readily understood as a part of the adjacent element on the left; e.g. a knuckle is best described as a part of a finger. Ultimately, the entire hierarchy of elements is within the domain [HUMAN BODY], because all of the elements are understood as body parts. In Cognitive Grammar terms, we may say that for each body part concept, the element adjacent on the left side is the immediate scope of conception. The domain [HUMAN BODY], in turn, is the maximal scope for all of the elements in the hierarchy. The distinction between the immediate and the maximal scope has consequences in language. Consider the expressions in (2).

(2) (a) *The finger has 3 knuckles.*
     (b) ˀ*The hand has 14 knuckles.*
     (c) ˀˀˀ*The arm has 14 knuckles.*
     (d) ˀˀˀ*The body has 28 knuckles.*

Strictly speaking, all the sentences in (2) are true, but (2c) and (2d) sound somewhat weird if no extra context is provided. This is because when we think about a body part, we naturally characterize the part in terms of a bigger whole within the immediate, but not necessarily in the maximal, scope of conception. Thus, a knuckle is most naturally described as a part of a finger (rather than a part of an arm or the entire body), a finger is most naturally described as a part of a hand, etc. When the whole from beyond the immediate scope is evoked to characterize a part, the characterization becomes more and more unnatural. Thus, the immediate scope is a portion of domain that is the most relevant for the profile. The maximal scope, in turn, typically corresponds to the entire domain. The relationship between the three are sketched in Figure 4.

Yet another dimension of construal is **specificity**. One object can be described with a varying amount of details, as evident from the expressions from (1a) to (1d). To use more technical terminology, more general concepts are **schematic** relative to more specific concepts and more specific concepts **elaborate** more schematic

maximal scope

immediate scope
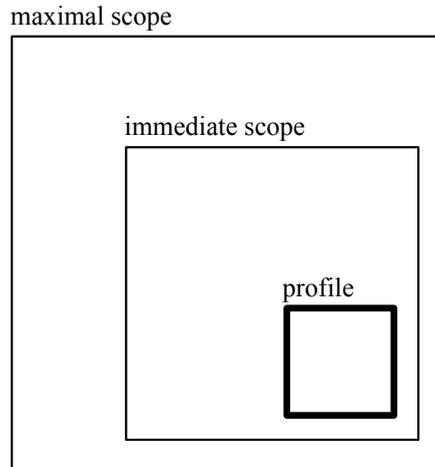
profile

Figure 4: The relation between the profile, the immediate, and maximal scope

concepts. For instance, the concept ANIMAL is schematic relative to the concept CAT, which in turn is more schematic relative to the concept FLUFFY KITTY, and so on. One may also say that the concept FLUFFY KITTY elaborates (i.e. specifies in more detail) the concept CAT, which in turn elaborates the concept ANIMAL. As we will see, schematic and elaborated concepts will play a big role in the description of many grammatical phenomena.

more schematic

ANIMAL > CAT > FLUFFY KITTY

more elaborated
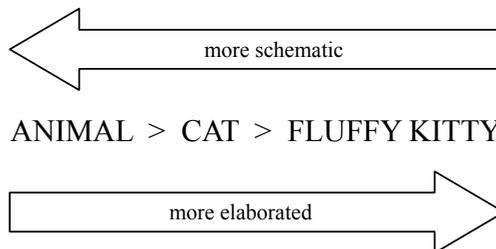
The final dimension of construal is **perspective**, which captures various aspects of the relation between the speaker and the content of the word or an expression. This includes the **vantage point,** which is the location in time and space from which the conceptualizer apprehends the situation described in a sentence. For example, the expression *to the left* and *to the right* can be fully interpreted only when the spatial location of the speaker is taken into account. More specifically, the latter expression usually means "to the right relative to where the speaker is facing." By default, a speaker's vantage point is the speaker's location at the moment of speaking, but we are able to imagine a situation from vantage points different

from ours. When I say *My cat is the one on the left*, it is implied that I am locating the cat relative to my own vantage point. Nonetheless, I may also assume the vantage point of the hearer and say *My cat is the one on your left*. In such a case, the animal is located in relation to the vantage point of the hearer, which may not coincide with the speaker's.

Briefly summing up this chapter, construal is a central theoretical notion in Cognitive Grammar used to explain many grammatical and semantic behaviors of words and linguistic expressions. In the next chapter, construal will be instrumental for drawing some of the most fundamental grammatical distinctions between various types of words.

Study questions

1. What is the typical domain against which the following nouns are construed?
   a) *wall*
   b) *hand*
   c) *lid*
   d) *glass*
   e) *wave*
   f) *tension*
   g) *democracy*
   h) *claustrophobia*
   i) *espionage*
2. Choose two words from Question 1. What is the difference between the immediate and the maximal scope of construal for these words?
3. For each word below, provide one word or expression that construes the word with greater specificity and one that construes it with smaller specificity.
   a) *giraffe*
   b) *pirate*
   c) *(to) eat*
   d) *(to) worry*
   e) *sweet*
   f) *blue*

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3. Grammatical classes

As already discussed in Chapter 2, in Cognitive Grammar a linguistic meaning is identified with a construal, i.e. a mental representation of a thing, a person, an event, etc. denoted by the word or the expression. This is worth bearing in mind, because a number of grammatical phenomena are straightforward consequences of the way we construe things and events in our minds. In this chapter we will use the notion of construal to solve one recalcitrant problem in virtually all grammars: the definition of grammatical classes.

3.1. Traditional grammatical classes

Words in a language fall into different categories: words are similar to each other and different from other words with respect to meaning, form, and grammatical behavior. For instance, in English one can propose a category of words which denote things and living organisms. These words have singular and plural variants, the latter being formed by adding the suffix *-s*, like in *cat-cats*. The words differ in these respects from words denoting actions which may take the *-ing* suffix, like *eat-eating*. The technical term for such categories of words are **grammatical classes**, also known as parts of speech. While the details of the definitions, classifications, and even the number of classes vary across theories, a popular traditional typology includes:

Table 1. Traditional grammatical classes

Grammatical class	Examples
nouns	*cat, democracy, redness*
verbs	*to run, to kick, to know*

adjectives	*big, red, disgusting*
adverbs	*noisily, nearly, always*
prepositions	*in, towards*
pronouns	*I, her*
conjunctions	*and, but*

In most cases, intuitive judgments of speakers familiar with the definitions of basic grammatical concepts are enough to classify words into one of these categories. Nevertheless, after a closer look it turns out that most traditional classifications create surprising and unexpected problems. Firstly, some words do not fit nicely into one of above categories or appear to be on the borderline between two of them. For example, words like *three* or *the* do not appear to fall into any of the above classes. Problems of this sort are not fatal and they are usually solved by creating additional grammatical classes like numerals and articles. However, words like *written* or *regulated* appear to be somewhere between adjectives and verbs. While it is possible to make yet another category for these problematic words (they are traditionally classified as "participles"), this solution looks like merely creating yet another label without explaining how these words are related to other types. Secondly, it is not always obvious how to define the classes. Traditional semantic definitions, which attempt to point out similarities in meanings of words, are imperfect because nouns, verbs, adjectives, and adverbs are considerably varied semantically. For instance, a noun can refer to a physical object (e.g. *chair*), a person (e.g. *teacher*), an abstract idea (e.g. *number*), a place (e.g. *Great Britain*), a property of an object (e.g. *redness*), nothing (e.g. *nothingness*), etc. Similarly, a verb can refer to an action (e.g. *to kick*), an event (e.g. *to rain*), a state (e.g. *to sit*), a perceptual or mental experience (e.g. *to hear*, *to seem*), etc. Moreover, it is not clear how the nouns like *regulation* differ from verbs like *to regulate*, both of which appear to refer to an action. Certainly, traditional definitions based on meaning and relying on some sort of enumeration of possible referents turn out to offer open-ended lists without explaining the similarities between the members of one class. This, of course, undermines the whole endeavor of defining grammatical classes in terms of similarities between the members of one class.

One solution to the problem is to propose formal rather than semantic definitions of classes. In formal definitions classes are characterized not in terms of similarities in meaning between the members, but similarities in formal properties. More specifically, a word is classified as a noun when it appears within a sentence in a position that can be taken by other nouns (e.g. the grammatical subject) or when it accepts affixes taken by nouns (e.g. the plural ending *-s* in English).

Formal classifications steer clear of the problems of semantic classifications (simply because the meanings of words are not taken into account), but suffer from problems of their own. Due to limited space, we will not be going into a detailed discussion on the shortcomings of formal definitions, but let us just note that they do not explain the impression that words like *to regulate*, *regulation*, and *regulated* are closely related not only in form, but also in meaning. Unless the definitions are further qualified, the three words are judged to be entirely different members of separate grammatical classes. While this may be true if we only pay attention to the form of these words, this conclusion does not do justice to the impression that the words are closely related to each other semantically. Also, as we will see in the following section, it is sometimes the case that words that "look" like members of one grammatical class "behave" in a sentence like members of a different class. Moreover, speakers may have strong intuition that their meanings match the meaning of a different class.

3.2. Grammatical classes in Cognitive Grammar

Cognitive Grammar tackles these problems by proposing a functional rather than a formal classification. In functional classifications it is more important what a word "does" in a sentence rather than what phonological form it has. The theory assumes that the main "job" of a word in a sentence is to express a meaning in a certain way and therefore if a word is used to express a concept of a thing, the word is a noun regardless of what it looks like. Since speakers can use words in novel, creative, and unconventional ways, this type of classification must admit a fair degree of flexibility. In general, cognitive grammarians do not view grammatical classes as rigid, cut-and--dry categories for pigeonholing words. Instead, the grammatical status of a word is determined primarily by means of the construal associated with it. For this reason, in the CG framework it is better to talk about "nominal construal," "verbal construal," "adjectival construal," etc. rather than "nouns," "verbs," "adjectives," etc. Construal is dynamic and flexible in nature, so the classification of a word may vary depending on the context in which it is used. Langacker (2008, 102) illustrates this point with various senses of the word *yellow*, reproduced here in (1).[3]

(1) (a) ***Yellow*** *is a nice color.*
    (b) *This **yellow** would look good in our kitchen.*
    (c) *There's a lot of **yellow** in this painting.*

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[3]   (1f) does not appear in Langacker's discussion.

(d) *The ball is **yellow**.*
(e) *Gradually the paper **yellowed**.*
(f) *The gold shone **yellow**.*

Even though *yellow* is most readily thought of as an adjective, (1d) is the only sentence in which the word can be reasonably classified in this way. In (1a)–(1c) *yellow* functions as a noun. This would have to be admitted even by the proponents of formal classification, since in the sentences the word occupies the "slot" reserved for nouns: it is a grammatical subject in (1a) and (1b), it is modified by *this* in (1b) and appears after *of* in the *a lot of* construction in (1c). In (1e) *yellow* functions as a verb (it takes the verbal past tense suffix -*ed*) and in (1f) as an adverbs modifying the verb *to shine*. This variety of senses may be problematic for grammarians who would like to view grammatical classes to be rigid and mutually exclusive categories. A cognitive grammarian, however, may simply argue that in each of the sentences in (1) the construals behind *yellow* are slightly different, which results in slightly different grammatical functions and, consequently, different classifications. Let us take a closer look at the details.

3.2.1. Nominal profiles

Whenever we want to characterize a construal, it is necessary to specify what is the profile and what is the base against which the profile "stands out." In the case of nouns, the crucial cognitive capacity that gives rise to the profile is the so-called **mental grouping**. The product of the mental grouping is a **thing**, but it should be remembered that in the CG terminology the term has a special technical meaning – it refers to a particular way of thinking about and imagining a referent rather than a specific physical object in the real world. Thanks to mental grouping we are able to perceive structures and patterns in a mass of complex data. The most straightforward illustration is mental grouping in visual input. Take a look at Figure 5. The chessboard in the top left corner of the diagram represents "raw" unprocessed visual data with no mental grouping. The viewer may wish to "highlight" particular portions of the chessboard in various ways. For instance, one can focus on the fields along one of the diagonals and to perceive them together as one sequence (the top middle chessboard). Alternatively, one may focus on fields in a column or a row (top right and bottom left chessboards). It is also possible to focus attention on one particular field (bottom middle) or the L-shaped pattern similar to the movement of the knight in chess (bottom right). These five arrangements are the results of five different ways of mental grouping, i.e. the process of imposing patterns on the original visual data. It is possible to "switch" between the groupings instantaneously – you can probably

quickly shift your attention from a column to a row. Yet typically when we focus on one pattern, we tend to lose sight on another – it is impossible to focus on a column and a row at the same time. If we wished to describe Figure 5 in CG terms, we could say that each chessboard correspond to a different construal arising from imposing different profiles (the thick red frames) on the same base (the chessboard). Obviously, in Cognitive Grammar not all construals are visual in nature, but mental grouping may also operate on more abstract concepts. For instance, the already mentioned word *democracy* denoted a mental grouping of abstract ideas rather than visible objects. Yet, in an important sense, the ideas known as democracy form a mental grouping of a particular sort somewhat like the patterns of fields in Figure 5.
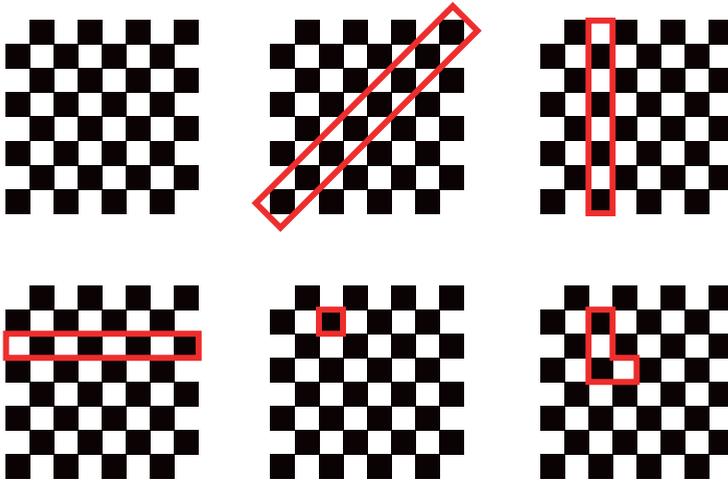
Figure 5: Various mental groupings of chessboard fields

Returning to our examples, in (1a) the base for the construal is the color space, which can be thought of as a mental representation of all the colors recognized by the conceptualizer. In Figure 6, the color space is presented in a simplified form as a color spectrum.

Figure 6: The color space – a mental representation of colors

Just as in the case of names of days of the week from Chapter 2, the base remains the same for all construals in (1). This accounts for the fact that all instances of *yellow* have some sort of connection to one of the colors in the spectrum. The differences in meanings are mostly a matter of the specifics of the profile. Thus, in (1a) the word profiles a region in the color space embracing all colors that qualify as yellow. This profile is highlighted in Figure 7.
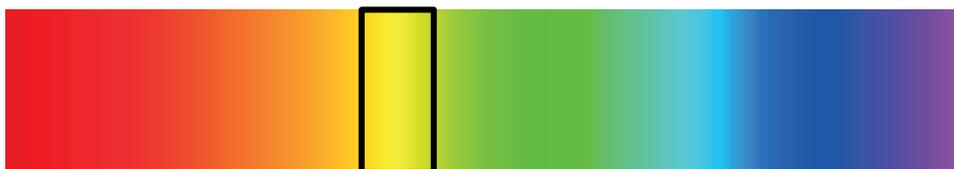
Figure 7: The construal behind *Yellow is a nice color*.

In (1b) the word refers to a particular shade of yellow rather than all shades that count as yellow. Arguably, the word is a countable noun; it is not inconceivable in a similar context for someone to say something like *These yellows look good in our kitchen*, meaning several distinct shades. Therefore, Figure 8 depicts the profile as a smaller slice of the color spectrum corresponding to one shade only.
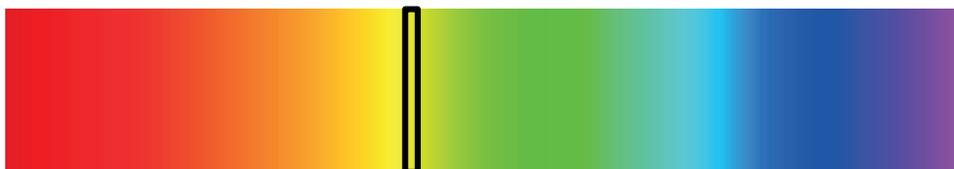
Figure 8: The construal behind *This yellow would look good in our kitchen*.

Yellow in (1c) is somewhat different in that, strictly speaking, it does not refer to a particular color, but all yellow regions in a particular painting. Of course, to fully understand (1c) we still need some sort of reference to the color space, but this time it is a portion of the painting, rather than a portion of the color space itself, that is at stake. More technically, the profile corresponds to the blotches of a color in the painting (as indicated by the heavy-line ellipsis) and the color is related to a region in the color space, as depicted in Figure 9.

Notice that in our analyses so far the nominal construals behind *yellow* involve abstract regions of some sort: in (1a) and (1b) the regions are portions of the color space, while in (1c) it is a yellow portion of the painting. This hints at a more general point: in Cognitive Grammar nouns are words with nominal profiles involving some sort of regions, usually formed through the process of mental grouping.
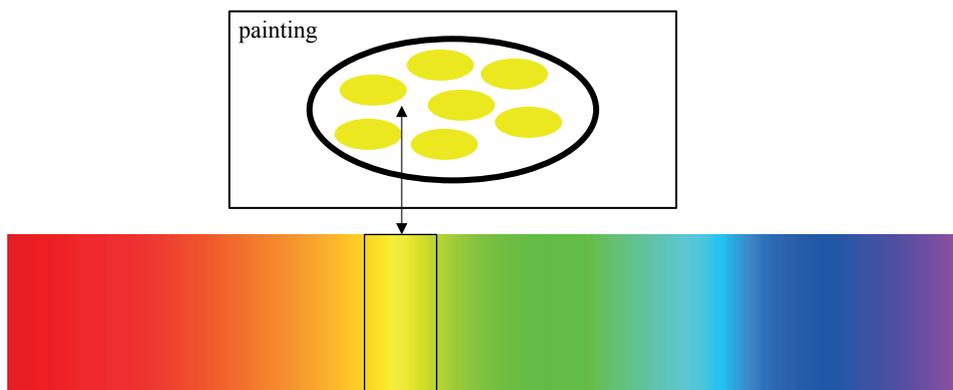
Figure 9: The construal behind *There's a lot of yellow in this painting*.

These regions and other groupings are conceptualized as abstract things. In a nutshell, we may say that **nouns profile things**, although it should be remembered that here the term *thing* has a special technical meaning and does not refer to inanimate physical objects alone. In the technical sense, a mental representation of a person is also a thing, because it involves a mental grouping of a sort: people exist in space, and therefore occupy certain three-dimensional regions, and consist of various parts that work together as a whole. Similarly, the abstract concept DEMOCRACY is a thing, because it involves a "grouping" of ideas about the political system of a state that form a coherent whole. The definition of a thing, and consequently of a noun, is admittedly abstract and general, but its main strength is that it makes possible coherent characterization of the different noun types, discussed briefly in Section 3.1. Given the sufficient degree of abstract thinking, all physical objects, people, places, colors, properties, etc. expressed by nouns can be analyzed as products of mental grouping occupying some sort of physical or abstract region.

3.2.2. Relational profiles

Let us now move on to the more "standard" meaning of *yellow* in (1d). In Cognitive Grammar, adjectives refer to the so-called **atemporal relations**. As the name suggests, one defining property of an atemporal relation is that they can be exhaustively characterized without any reference to the flow of time. At first blush, it may seem counterintuitive to think about the meaning of *yellow* in (1d) in terms of a relation. After all, a color is a visual sensation and not a relation between two things. Note, however, that whenever an adjective is used in a sentence, it specifies a property of a thing (as defined in the previous paragraph). Thus, one could argue

that adjectives relate things to properties specified within some sort of quality space, i.e. an abstract collection of properties that a thing may possess. In the case of color terms, the quality space is the already discussed color space. Hence, the sentence *The ball is yellow* relates the referent of the word *ball* to the portion of the color space corresponding to *yellow*. The construal is sketched in Figure 10, where "B" stands for the ball.
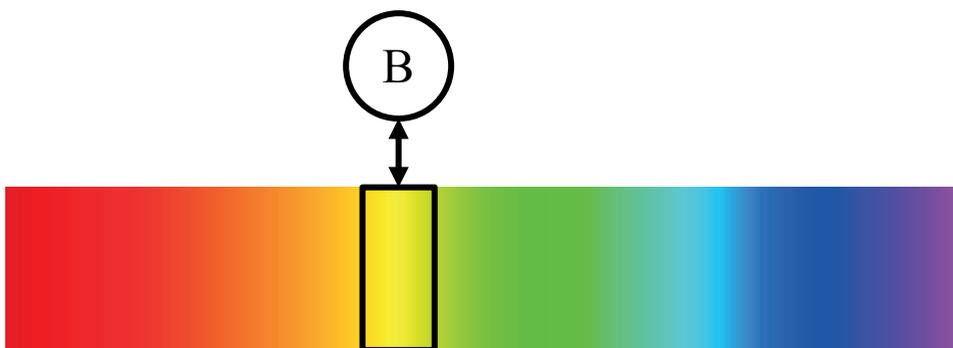
Figure 10: The construal behind *The ball is yellow*.

At this juncture, it is useful to introduce two important theoretical terms pertaining to relations. Relationships always hold between participants, oftentimes two or more, but (as we will see) some admit only one participant. Usually, the participants do not enjoy equal status – one of them is more prominent for one reason or another. This prominence should be understood as the subjective importance for the speaker or the amount of attention given to the entity within a construal and does not have to correspond to any objective properties of the entity. For instance, the sentences in (2) depict the same relationship between dogs and foxes, but the construals behind the two sentences are somewhat different. In (2a) dogs are compared to foxes, so dogs are in the primary focus of attention; in (2b) it is the other way around – foxes are compared to dogs and they enjoy greater focus of attention. Grammatically, the greater prominence of one of the entities is often signaled by the fact that the entity is the subject of the sentence. In CG terms, the participant enjoying greater prominence in a relation is called **the trajector** and the one enjoying less prominence is called **the landmark**. Thus, in (2a) the concept DOGS is the trajector and the concept FOXES is the landmark, while in (2b) it is the other way around.

With these two new terms at our disposal, we are now in a position to return to (1d) and characterize the construal in more technical terms. Thus, in *The ball is yellow*, the concept BALL is the trajector and the respective region in the color space is the landmark. More generally, *yellow* with its adjectival meaning profiles a relation, because it expresses a relation between a thing and the yellow region in a color space.

(2) (a) *Dogs resemble foxes*.
    (b) *Foxes resemble dogs*.

Turning to (1e), in Cognitive Grammar verbs profile **processes**, which are in turn described as **temporal relations**. In analogy to atemporal relations discussed in the context of adjectives, temporal relations can be exhaustively characterized only when the flow of time is taken into consideration. Just like atemporal relations, processes involve at least one participant. In (1e) we have, in fact, two. The trajector of the process, i.e. the more prominent participant functioning here as the grammatical subject, is the concept PAPER. The other (and perhaps less obvious) participant is the region of the color space corresponding to yellow. The relationship can be characterized in the following way: over time the paper changes in such a way that its color gradually becomes more yellow. Figure 11 may be slightly misleading: the multiple circles marked with "P" stand for a single referent during several stages of the process (and not to several different participants existing in the same moment). The flow of time necessary for understanding the process is signaled with the horizontal arrow with "T."
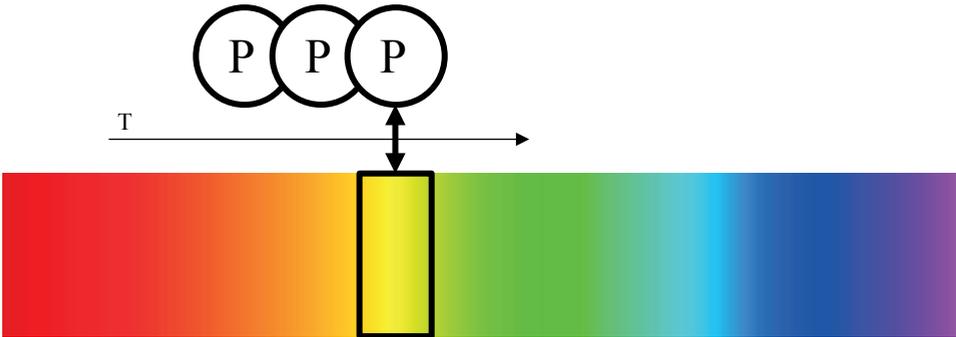
Figure 11: The construal behind *Gradually the paper yellowed*.

In many respects the adverbial construal behind *yellow* in (1f) is similar to the adjectival construal in (1d), since in Cognitive Grammar adverbs profile atemporal relation, too. The key difference between an adjective and an adverb is that the trajector of the former is a thing and the trajector of the latter is another relation. This explains why adverbs can modify words belonging to seemingly different grammatical classes: verbs (e.g. *to shine **brightly***), adjectives (e.g. ***extremely** small*), and other adverbs (e.g. *to shine **extremely** brightly*). In the CG framework, all of these classes profile relations, either temporal (verbs), or atemporal (adjectives and adverbs), so they are compatible with the adverbs which require a relation as their trajectors. In the case of (1f), *yellow* profiles a relationship between the process of shining and the color yellow. More technically, the

trajector of the relation is the process TO SHINE and the other participant is the yellow region of the color spectrum. The fact that in Figure 12 the stages of the process are not marked with a bold line is meant to indicate that this time *yellow* does *not* profile a temporal relation. The flow of time inherent in a temporal relation can be found in the meaning of *to shine*, i.e. it is "built into" the trajector of the relation denoted by *yellow* rather than in the relation itself. After all, it is possible to understand the basic meaning of *yellow*, even when it is used as an adverb, without considering the flow of time.
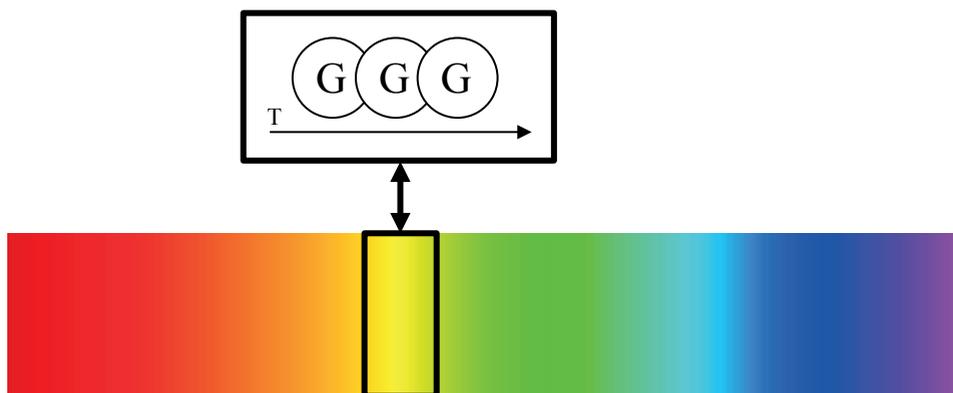
Figure 12: The construal behind *The gold shone yellow*.

The last grammatical class to be discussed in this chapter is prepositions. In their basic meanings, these words profile spatial relations involving things. Thus, one characteristic property of prepositions is that their landmarks (lm) are things and their trajectors (tr) can be either things (e.g. *a cat*$_{tr}$ *in a box*$_{lm}$), or relations (e.g. the temporal relation TO SLEEP in *to sleep*$_{tr}$ *in a box*$_{lm}$). In this respect, prepositions are to some extent similar to adjectives, when the trajector of the preposition is a thing, and to adverbs, when the trajector is a relation. This semantic similarity is nicely illustrated by the dubious status of the word *near*, which may function as a preposition when referring to a spatial relation (e.g. *a cat **near** the box*), an adjective when modifying a noun (e.g. *a **near** relative*), or an adverb when modifying a word with relational meaning (e.g. *We are **near** related*). The main difference between typical adjectives/adverbs and typical prepositions is that the landmarks of the former are not expressed explicitly in the phrases and the landmarks of the latter are. For example, a complete characterization of the adjective *yellow* involves both the landmark (the yellow region of the color spectrum) and the relation to the landmark. One could say that in typical adjectives and adverbs the landmark is (as if) "built into" the meaning of the adjective. In a preposition like *on* the landmark is not "built into" the meaning, so it has to be specified explicitly in the phrase, e.g.

*the cat **on** the box*$_{lm}$. Sometimes it is perfectly natural to omit the landmark of the preposition, e.g. *the cat is around*, but in such cases the landmark is typically obvious from the context (*the cat is around (here)*), so it is still not "built into" the preposition, but comes from a widely understood context in which the expression is produced.

The differences between the construals in the grammatical classes involving atemporal relations are summarized in Figure 13. The cross-hatched circles indicate that the participant of the relation is not specified in the semantics of the word and it has to either be signaled explicitly in the expression or can be inferred from the context, like in the already mentioned *the cat is around*. The boxes enclosing the relations in adverbs and adverb-like prepositions indicate that the trajector is the entire relation inside the box.
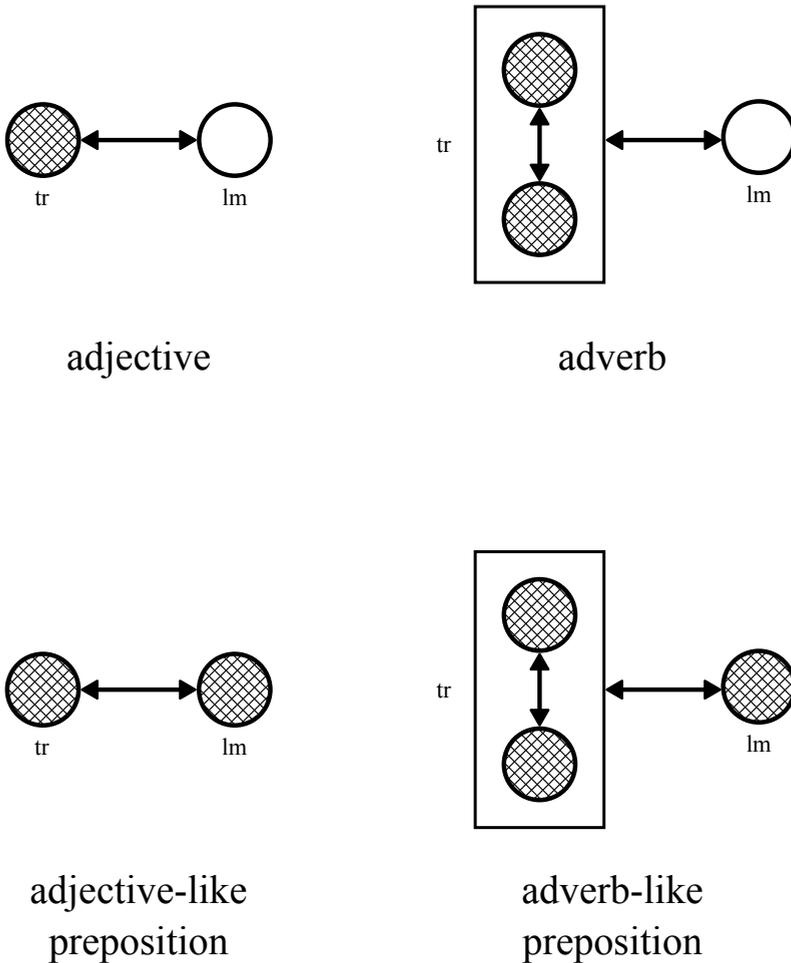
Figure 13: Differences in the construals of atemporal relations

The differences between the grammatical classes discussed in this chapter are summarized in the flowchart in Figure 14. The diagram illustrates a rule of the thumb procedure for determining the grammatical class of a word.
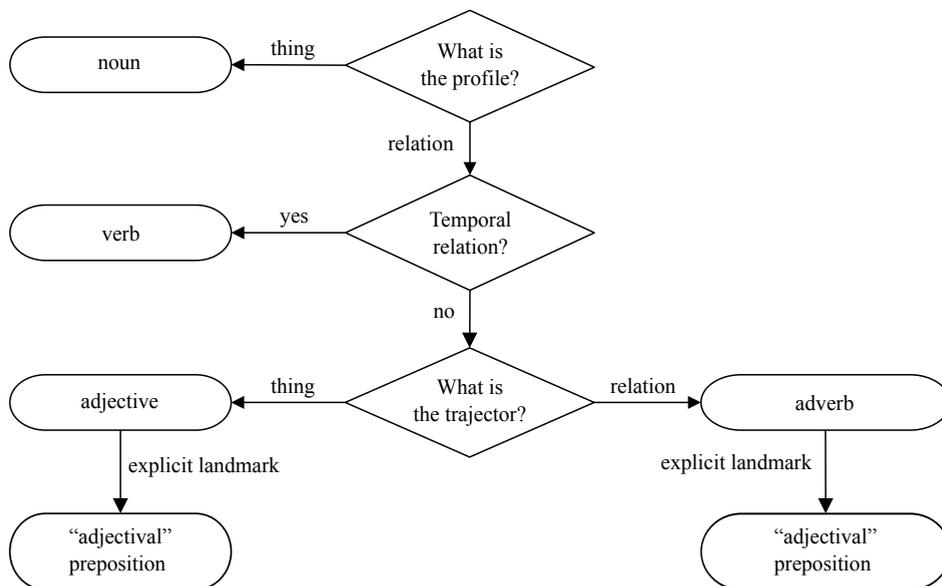
Figure 14: Procedure for determining the grammatical class of a word

Study questions

1. The word *wolf* in the sentences a)–c) below belongs to different grammatical classes. Assuming that the three construals behind the word are profiled against the same base, what is the difference between the construals?
   a) *I saw a **wolf** near my house yesterday.*
   b) *He always **wolfs** down supper after a long day at work.*
   c) *If you encounter a **wolf** pup in a forest, don't take it with you!*
2. Can you think of other words with the same phonological form that can be construed as belonging to different grammatical classes?
3. Can you think of several alternate ways to mentally group the geometric shapes in the diagram below?
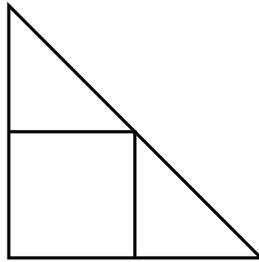
References and further reading

- Langacker, Ronald W. 2008. *Cognitive Grammar. A Basic Introduction.* New York: Oxford University Press.
  - Sections 4.2–4.3
- Langacker, Ronald W. 2013. *Essentials of Cognitive Grammar.* Oxford–New York: Oxford University Press.
  - Sections 4.2–4.3
- Taylor, John R. 2002. *Cognitive Grammar.* Oxford: Oxford University Press.
  - Chapters 11, 18

4. Major subclasses of nouns and verbs

Grammatical classifications are not limited to proposing broad categories of the noun, the verb, the adjective, etc. It is often useful and informative to propose more specific subcategories within these broad classes. In this chapter we will focus on two major subclasses of nouns and verbs. Even though the two types of words seem to be very different in nature, the basic cognitive mechanisms governing their respective subtypes are surprisingly similar.

4.1. Count and mass nouns

Cognitive Grammar offers its own interpretation of the traditional distinction between countable and uncountable nouns, although uncountable nouns are renamed into *mass nouns* to better reflect the way we think about them. Thus, when we think about things, we usually think about objects with clearly delineated boundaries, like cars, houses, and rocks, or amorphous masses with vague or elusive boundaries like water, sand, or air. These are the two basic **conceptual archetypes**. A conceptual archetype can be thought of as a mental "template" for thinking about things. Within CG's framework, the traditional countable/uncountable distinction is not a distinction between two rigid categories of nouns, but two different ways of thinking about things. Therefore, a **count noun** is not so much a cut-and-dry type of noun, but a noun whose meaning is construed in accordance with the count object archetype. A **mass noun**, by contrast, is a noun whose meaning is construed in accordance with the mass archetype. Table 2 summarizes the key features of count object and mass archetypes according to Langacker (2008, sec. 5.1):

Table 2: Mass vs. count objects

Count objects are...	Masses are...
• *bounded* – The boundaries of the thing are inside the immediate scope of conception. • *heterogeneous* – Objects are not the same throughout. • *non-contractible* – Portions of count objects are not the same as the objects. • *replicable* – Count objects can be replicated; adding another results in a plural amount of objects.	• *unbounded* – The boundaries of the thing are outside the immediate scope of conception. • *homogeneous* – Masses are the same throughout. • *contractible* – Every portion of a mass is a valid instance of the mass. • *expansible* – Adding a portion of mass results in the same mass.

Grammatical evidence suggests, however, that the picture may be more complicated than that. There are good reasons to propose that we may also need to distinguish **plural masses**. Masses of this sort are simply masses composed of multiple instances of count objects and are expressed by plural forms of countable nouns, e.g. *cats*.

```
                        nouns
                       /      \
            count nouns        mass nouns
             (e.g. cat)        /        \
                          plural          non-plural
                        mass nouns        mass nouns
                        (e.g. cats)       (e.g. fur)
```
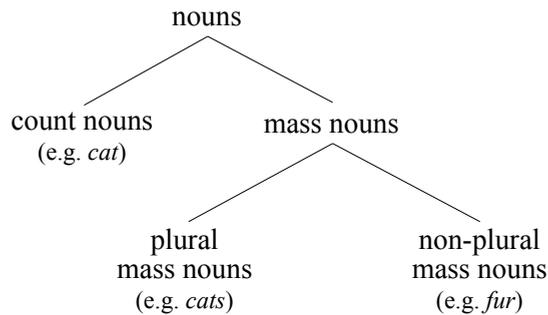
As the name suggests, plural masses are a type of mass, as they behave grammatically unlike count nouns (cf. Langacker 2008, sec. 5.1.1):
• Only count nouns (but not mass nouns) can be used with the indefinite article.
  ○ *They have {*cat / fur / cats}.*
  ○ *They have a {cat / *fur / *cats}.*
• Mass nouns (but not count nouns) can be used with quantifiers like *most* and *all*.
  ○ *most {*cat / fur / cats}*
  ○ *all {*cat / fur / cats}*

Yet grammatical behavior also provides reasons for drawing a distinction between plural and non-plural masses:
• Non-plural masses can be used with the demonstratives *this* and *that*; plural masses can be used with *these* and *those*.

- ◦ *these cats* vs. *this fur*
- ◦ *those cats* vs. *that fur*
- Non-plural masses can be used with the quantifiers *much* and *little*; plural masses can be used with *many* and *few*.
  - ◦ *many cats* vs. *much fur*
  - ◦ *few cats* vs. *little fur*
- The adjectives *several* and *numerous* can be used only with plural masses.
  - ◦ *several cats* vs. **several fur*
  - ◦ *numerous cats* vs. **numerous fur*

It should be remembered that construal is dynamic and flexible, so that we are usually able to think about things and events in new, non-standard ways. For this reason, it is perhaps not surprising that what we typically think of as a mass referent can be re-conceptualized into a count referent. While in the example above *fur* is offered as an example of a mass noun, there is also a count variant of the word referring to an item of clothing, like in *Anne has two **furs** in her closet*. The flexibility of construal is reflected in alternate senses of various count and mass nouns.

(1) (a) **Water** *is composed of hydrogen and oxygen.*   (mass noun)
    (b) *I bought two **waters**.*   (count noun)
(2) (a) *I don't like **meat**.*   (mass noun)
    (b) *We offer a wide selection of **meats**.*   (count noun)
(3) (a) *The plane crashed, because it ran out of **runway**.*   (mass noun)
    (b) *The airport has only two **runways**.*   (count noun)

To capture the key conceptual difference between mass and count nouns, we need to return to the notion of immediate scope of construal discussed in Section 3.1. We know that count nouns express the construal of a bounded object. More technically, in the case of a bounded object, the boundaries of the thing are within the immediate scope of construal. Less technically, when we think about bounded object, we easily imagine the boundaries separating it from its surroundings. This is quite typical of objects whose boundaries are well delineated and easy to perceive, like rocks, chair, and cats. Mass nouns, in turn, denote unbounded masses, i.e. things whose boundaries are beyond the immediate scope of construal. This, of course, does not mean that masses have no boundaries or that we are entirely unaware of them. Rather, it means that we do not readily think about them, because they are vague, hard to observe, or irrelevant for some reason. When I say *I don't like meat* as in (2a), where the concept MEAT is construed as an unbounded mass, I am not saying that meat is somehow boundless in the real world – after all, not everything is meat, so meat must end somewhere. Instead, I am saying that I do not like eating

a particular type of food in general. Since I do not eat meat – any meat whatsoever – in this particular context there is no need to emphasize the "boundedness" of a singular piece of meat. In other words, I am referring to a particular kind of substance, rather than any specific portion of the substance with definite shape and size, so the unbounded construal that ignores the boundaries of the thing is a natural choice in this context. The difference between bounded and unbounded construal with respect to the immediate scope of conception is sketched in Figure 15.

bounded object (e.g. *cat*)   unbounded mass (e.g. *fur*)
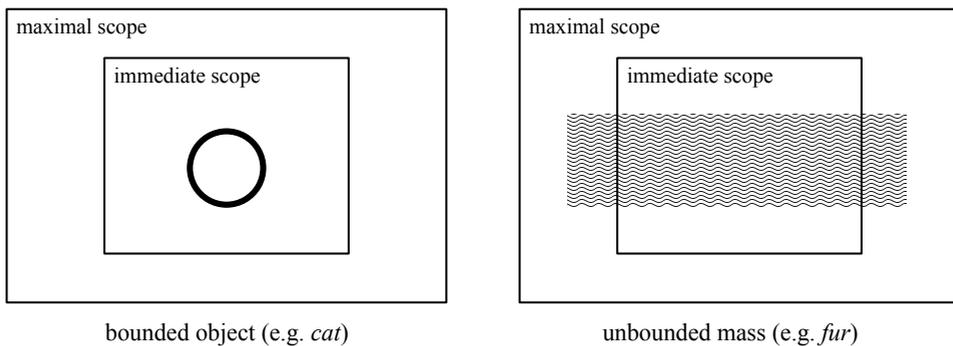
Figure 15: Bounded vs. unbounded construal in nouns

4.2. Perfective vs. imperfective verbs

There are many ways of subdividing verbs depending on the theoretical criteria we choose to take into consideration. In this section, we will have a closer look at the distinction between **perfective** and **imperfective** verbs. Even though it may not be apparent at first blush, the conceptual mechanisms underlying this distinction are in fact very similar to the ones behind the count/mass noun distinction.

Perfective and imperfective verbs reflect two different ways of construing the processes denoted by the two classes of verbs. Just like nouns, the two construals reflect two conceptual archetypes for a process. Roughly speaking, "perfective" processes have a clearly delineated beginning and end, and they are composed of several distinct stages. Oftentimes the participants involved in the process undergo some kind of change. Good illustrations of this archetype are denoted by the verbs *to cook*, *to eat*, *to watch*, and *to prepare*. "Imperfective" processes have vague, unspecified, or irrelevant beginning and end, and less differentiated stages. Oftentimes, there is no clear or obvious change happening to the participants. Examples of this construal are denoted by the verbs *to know*, *to see*, *to prefer*, and *to be*.

Grammatical evidence for the distinction is that in English perfective verbs sound more natural in the continuous aspect and imperfective verbs in the simple aspect. Consider, for example, the sentences in (4).

(4) (a) *I'm **eating** an apple.*
    (b) **I **eat** an apple.*
    (c) *I **like** apples.*
    (d) **I'm **liking** apples.*

Why is this so? Eating is a deliberate and controlled action with clearly delineated beginning and end. Liking is the opposite: it would be hard to argue that the speaker likes apples "deliberately" or that they have full conscious control over their preferences. Moreover, the beginning and the end of the process are somewhat vague and unspecified. In principle, there must have been a time when the speaker had never eaten an apple and therefore had not liked them. Since the speaker likes them presently, there must have been a time when they developed the liking for the fruit. Yet it could be hard for the speaker to pinpoint this exact moment. Similarly, it is far from clear whether the speaker will ever change their mind about apples, so the process does not necessarily have a distinct endpoint. Furthermore, eating is more "structured": it consists of several different stages. Liking, on the other hand, does not consist of stages: it is simply a fairly stable and unchanging preference for something. In sum, the perfective construal takes place when the process is thought of as structured and delimited in time, like eating in (4a), and the imperfective construal takes place when the process is thought of as "unstructured" and not delimited in time, like liking in (4c). Just like in the case of nouns, construals behind verbs are flexible and dynamic, so it is usually possible to come up with contexts in which, for example, a perfective noun sounds natural in the simple aspect (e.g. *I eat one apple every day*), but without any additional provisos (4b) and (4d) sound rather weird.

In more technical terms, the distinction between the perfective and imperfective aspects is essentially not unlike the one between count and mass nouns discussed in Section 4.1. The claim that the beginning and the end of a perfective process is clearly delineated can be cashed out in more abstract and technical terms by saying that the beginning and the end of the process are within the immediate scope of construal. In this sense, perfective verbs are similar (in a rather abstract sense) to count noun construal, where the boundaries of the thing are within the immediate scope as well. The beginning and the end of a process denoted by an imperfective are less specified; hence, they fall outside the immediate scope of construal. This makes them similar to masses, whose boundaries are outside the immediate scope, too. Just like in the case of mass nouns, the fact that the boundaries of the process are outside

the immediate scope does not mean that the process will never end. After all, the preferences of the speaker of (4c) may evolve over time, so that they may not like apples anymore in the future. It only means that the start and the end of the process is less clearly defined in the construal. To put this point somewhat metaphorically, imperfective processes are "diffuse" in time, just as masses are "diffuse" is space and the endpoints of the process are "fuzzy" in time in the same way that the boundaries of masses are "fuzzy" in space. The distinction is sketched in Figure 16 (pay attention to overall structural similarities between Figures 15 and 16).

<div align="center">

perfective construal   imperfective construal
(e.g. *eat*)   (e.g. *like*)
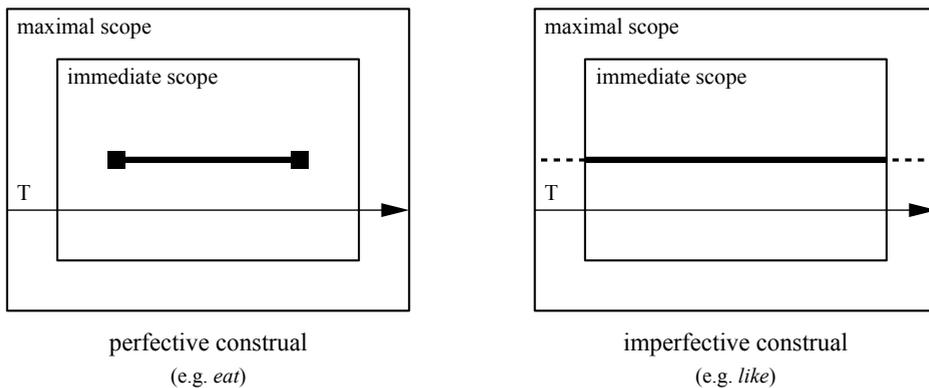
Figure 16: Perfective vs. imperfective construal in verbs

</div>

   Some further examples may help to clarify the difference between perfective and imperfective verbs (adapted from Langacker 2008, 148–149). The pairs of sentences in (5) also illustrate the flexibility of construal: it is often possible to think about processes in different ways depending on the situation. Moreover, alternate construals have consequences for the grammatical shape of sentences: the perfective construal is expressed by the continuous aspect, while the imperfective with the simple aspect.

(5) (a) *She **is covering** the hole with a picture.*   (perfective verb)
    (b) *A picture **covers** the hole.*   (imperfective verb)
    (c) *We **are connecting** the wires.*   (perfective verb)
    (d) *A tunnel **connects** the two buildings.*   (imperfective verb)
    (e) *She is **swimming** right now.*   (perfective verb)
    (f) *She **swims** well.*   (imperfective verb)

   In (5a) the process of covering has clearly defined endpoints: it will last as long as the hole is successfully concealed by the picture. This is a perfective construal, which goes well with the continuous aspect. In (5b) the process is depicted as lasting indefinitely

in time, so we do not know when it started and when it ends. Hence, the construal is imperfective and the simple aspects is more natural in this case. (5c) and (5d) are very similar to the previous pair, but they illustrate the construal with a different process. In (5e) the action of swimming has well defined endpoints: is started when the woman got into the water and will end when she gets out. The sentence in (5f) depicts the process as more "diffuse" over time and the endpoints are irrelevant (if they can be specified at all); what is important is the fact that the woman has a certain skill rather than the fact that the skill was mastered at some definite time in the past.

Study questions

1. What are some other examples of nouns (apart from the ones mentioned in this chapter) that can have both "count" and "mass" construals? Provide examples in full sentences.
2. What are some other examples of verbs (apart from the ones mentioned in this chapter) that can have both perfective and imperfective construals? Provide examples in full sentences.
3. Can you think of a context in which 4(d), *I'm **liking** apples*, is grammatically correct? How does the context differ from a typical situation in which the verb *to like* is used?

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5. Scanning

The distinctions between count and mass nouns, as well as perfective and imperfective verbs can be characterized in a different fashion (though a reader hoping for a less abstract account than the one offered in this chapter should not rejoice prematurely). The crucial element of the alternative formulation is the cognitive ability known as scanning. This mental skill is helpful in explaining a number of grammatical phenomena. This chapter showcases just a handful, but we will see that scanning will pop up on several other occasions throughout this book.

5.1. Summary and sequential scanning

Think about an eight-digit number, for example 73654967. Let us suppose for the sake of the argument this is a serial number of your computer that has recently begun to malfunction. You are calling a repair service professional, who needs to know this very number to diagnose the problem. Since the repairer cannot read it off on their own, you have to dictate it over the phone. When you are looking at the number on your computer, you see the entire sequence of digits at once. But of course you cannot dictate all the digits at once over the phone. You have to spell them out in a sequence dividing the serial number into smaller "chunks." How do you go about this?

The simplest way is to dictate every digit one by one: "seven, three, six, five…" But the repairer is getting impatient and says: "Could you speed it up a bit?" So you start from the beginning and now you break the number into two-digit chunks: "seventy three, sixty five, forty nine, sixty seven." The repairer seems to be more satisfied, but she still asks: "Could you repeat the last but one digit? I didn't quite get it…" Now you look at the end of the number and single out the second digit from the right: "Six."

Let us recapitulate. During your conversation with the repair professional you "accessed" the digits of the serial number in four different ways. First, you saw the number as a single grouping of digits when you read it off your computer:

(i) 73654967

Second, you went through the digits one by one starting from the left-hand side, when you dictated the number for the first time:

(ii) $7 \rightarrow 3 \rightarrow 6 \rightarrow 5 \rightarrow 4 \rightarrow 9 \rightarrow 6 \rightarrow 7$

Third, you grouped the digits into pairs and went through the chunks one by one starting from the left-hand side, when you dictated the number for the second time.

(iii) $73 \rightarrow 65 \rightarrow 49 \rightarrow 67$

Finally, you were asked to single out the penultimate digit. This time it was more convenient to start from the right-hand side, get to the second element from the end and ignore all the rest.

(iv) $7365496 \leftarrow 7$

This simple story illustrates different ways of **scanning** a grouping of elements. Scanning is a process of "accessing" elements of a complex entity for some purposes. When all the elements of the grouping are accessed at once, as if in a single glance, like a sequence of digits seen together as a whole number in (i), cognitive grammarians talk about **summary scanning**. When the grouping is broken into smaller portions and the portions are accessed one by one in a certain sequence, as in (ii), (iii), and (iv), cognitive grammarians talk about **sequential scanning**. Scanning is a cognitive ability that has important consequences for construal and affects the way we speak about the world around us. Scanning is evident in many grammatical phenomena on all levels of linguistic organization. The case studies in the remainder of this chapter serve as a handful of illustrations and should not be thought of as a complete and exhaustive list.

5.1.1. Nouns and verbs

Let us begin with the topic already covered in the previous chapters: grammatical classes. Scanning may help us to understand the distinctions between count and

mass nouns, as well as perfective and imperfective verbs. One way to capture the distinctions is to say that boundaries of things in nouns and endpoints of processes are:

- inside the immediate scope of construal in count nouns and perfective verbs, and
- outside the immediate scope in mass nouns and imperfective verbs.

Since things and processes are usually complex entities composed of multiple parts or stages, it makes sense to propose that when we think about them, we "access" their components in different ways. Therefore, another way of capturing the count/mass and perfective/imperfective distinctions is to specify how the complex entities are scanned. When we take into consideration the immediate scope of conception, there are essentially two options.

A) Scanning within the immediate scope may cover the entire thing or process. That is to say that when we access the components of things and processes in a sequence within the immediate scope, we eventually access *all* the components.

B) Scanning within the immediate scope may *not* cover the entire thing or process. That is to say that when we access the components of things and processes in a sequence within the immediate scope, we do *not* access all of the components – some components outside the immediate scope remain unscanned.

As you may have guessed, A) corresponds to count nouns and perfective verbs, while B) to mass nouns and imperfective verbs. In other words:

a) In count nouns, the scanning of the thing within the immediate scope reaches the thing's boundaries; in perfective verbs, the scanning of the process within the immediate scope reaches the process's beginning and end.

b) In mass nouns, the scanning of the thing within the immediate scope *does not* reach the thing's boundaries; in imperfective verbs, the scanning of the process within the immediate scope *does not* reach the process's beginning and end.

Scanning may also help to explain the process of deriving nouns from verbs (and the distinction between nominal and processual construal in general). What is the difference between the words like *to swim*, *swimming*, and *a swim*? Undoubtedly, they are very similar in meaning, since all three denote an action of locomotion in water, but their grammatical behaviors strongly suggest serious differences between them. Obviously, *to swim* is a verb: it takes verb affixes (*-s* for the 3rd person singular and *-ing* for present participle) and appears in the "verb position" within a sentence. *Swimming* and *a swim* are nouns:[4] the former can be used in the phrase *a lot of swimming*, where we expect a noun or a nominal phrase following *of*, and the latter sounds natural

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[4]   *Swimming* may also function as present participle, but at this juncture we will focus on the nominal sense.

when preceded by the indefinite article *a*, which is characteristic of nouns. The fact that *swimming* does not readily take the indefinite article suggests that it is more similar to mass nouns, while *a swim* is more similar to count nouns. To account for the differences in a more technical way, we need to take a closer look at the construal behind these words. Thus, in a sentence like *I **swim** a lot*, the verb profiles a process developing over time. In processual construals, scanning is sequential, which means that the stages of the process are accessed in a sequence; here the sequence is simply the sequence of the stages of swimming. In Figure 17(a) this is signaled by the fact the profiled portion of the time arrow ("T") is aligned to the dotted arrow denoting scanning ("S").

(a) *I swim (a lot)* (verb)   (b) *swimming* (mass noun)   (c) *a swim* (count noun)
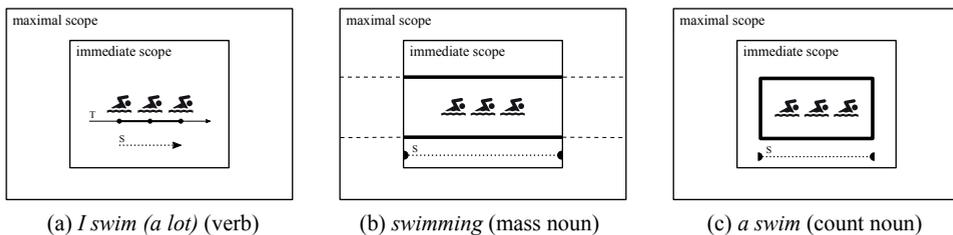
Figure 17: Construal behind the verb *to swim* and deverbal nouns

By contrast, nominal construals involve summary rather than sequential scanning. The things denoted by nouns, like *swimming*, still consist of stages, but now the stages are conceptualized as a stable grouping of a sort, rather than stages developing over time. To put this point more metaphorically, all of the stages are "viewed" at once, like the digit in the number discussed at the beginning of the chapter. The lack of the time flow in the characterization of the nouns' meaning is signaled in Figures 17(b) and 17(c) by the lack of the time arrow "T." Notice also that the dotted lines indicating summary scanning end with the half circles as opposed to the arrowhead in Figure 17(a), marking sequential scanning. In Figure 17(c) the noun denotes a bounded thing, whose boundaries (marked by the heavy-line box) are included in the immediate scope and scanning in the immediate scope covers the entire thing. Finally, in Figure 17(b) the noun profiles a mass noun, whose boundaries extend beyond the immediate scope and scanning does not cover the entire thing.

5.1.2. Participles, infinitives, and finite verb forms

A combination of scanning and profiling is also helpful in describing the meanings of participles, infinitives, and finite verb forms. In traditional linguistics the exact

definitions of these terms are subject to debates. It is also far from clear, whether all of these forms can be found in all languages. As far as English is concerned, the forms can be roughly defined as follows:

- **Infinitives** are the forms of verbs that do not provide any information about grammatical person, tense, and aspect, etc.; these forms are found in dictionaries (e.g. *to **break***).
- **Finite forms** serve as main verbs in sentences and they provide information about person, tense, and aspect, etc. (e.g. *Floyd **broke** the glass*).
- **Participles** are adjective-like words derived from verbs (e.g. *a **broken** glass*, *glass **breaking** Floyd*).

Even though the three types of words can be defined in terms of formal properties – they do behave similarly in sentences and accept certain affixes – just like in the case of grammatical classes, Cognitive Grammar prefers to characterize these types of words in terms of their meaning, and more specifically, in terms of the construal that they convey.

You may remember that the semantic differences between various senses of the word *yellow* are a matter of imposing different profiles on the same base. This is how we are going to analyze various verb forms of the word *to break*: the differences between infinitives, participles, and finites are largely a matter of "highlighting" various parts of the process in different ways. The base is a conception of a process in which an object loses its physical integrity, as sketched in the top left corner of Figure 18. The other parts of the diagram depict the construals behind various verb forms resulting from imposing various profiles on this base. It should be noted that the diagrams are simplified and do not attempt to capture the entire meaning of the sentences, but rather only the construals behind the various forms of the verb *to break*.
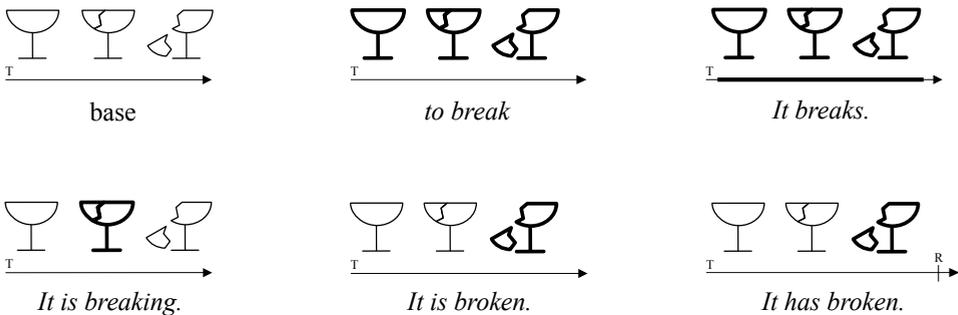
Figure 18 : Construals behind finite and non finite verb forms

Infinitives (upper middle part of Figure 18) do not involve sequential scanning over time. This means that the flow of time is not profiled and the construal is simply

a sequence of stages of the denoted process. In this respect, infinitival construals are similar to the construals of nouns and English infinitives sometimes appear in syntactic positions where nouns are usually found (compare *I want **a car*** and *I want **to sleep***). When sequential scanning is added and the flow of time becomes an important element of the profile, the verb has a finite form,[5] like in *It breaks* (upper right part of the diagram). This particular sentence does not offer appreciable details about the circumstances of the event, so it is typically interpreted as expressing a fairly general statement about the subject (in this case, about whatever is referred to by means of *it*).

Turning to participles, the present participle *breaking* as used in *It is breaking* profiles a middle stage between the beginning and the end of the process. This is why in English sentences in progressive aspects are usually interpreted as expressing actions or events progressing during the time of speaking. Since the final stage of the process is unprofiled, the sentence is silent about whether the action is finished successfully, interrupted, aborted, etc. Similarly, the sentences are also silent about the beginning of the action. More technically, the endpoints of the process are outside the immediate scope of construal. Notice that when an *-ing* form is used to denote a noun, the basic structure of the profile remains the same. For example, the already discussed *swimming* is a mass noun whose boundaries fall outside the immediate scope of construal. Thus, the "unboundedness" appears to be a central element of the semantics of *-ing* forms, whether they are used as nouns or parts of *to be X-ing* constructions. When the *-ing* form is used as an adjective, the middle stage of the process is still relevant. This time, the stage serves as the landmark of the relation profiled by the adjective. For instance, in *(the sound of) **breaking** glass*, the participle profiles the relation between the glass (the trajector) and the middle stage of the action of breaking (the landmark). As already mentioned in Chapter 3, adjectives provide additional information about nouns and in this case the glass is specified as undergoing the action of breaking.

Finally, past participles like *broken* profile the final stage of the process. This is perhaps most apparent in the English passive sentences like *It is broken* (middle left part of Figure 18). The sentence is about the state that resulted from the process of breaking, but the entire process is not profiled. Here, the entire process is evoked as the base of the construal in order to say something more about the state of the thing in question, i.e. the thing is in the "broken" state which is the final stage of the action of breaking. This facet of meaning is less apparent in English perfect sentences

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[5]   More precisely, it is not enough to add the flow of time in the construal to arrive at finite forms, since they also involve the so-called grounding. This topic will be discussed in more detail in Chapter 9.

(e.g. *It has broken*; lower right part of the diagram), which also use past participle, but after a closer inspection it turns out that the final stage plays a crucial role in the construal, too. Sentences of this kind express actions completed before some reference point in time (marked in Figure 18 with "R"). In present perfect sentences, this reference point is the moment of speaking. Thus, *It has broken* means that the final stage of the process of breaking occurred before the time of speaking. Saying that the final stage of the process has already occurred is, of course, equivalent to saying that the process is completed. Past perfect sentences (e.g. *It had broken before I arrived*) differ from present perfect sentences in that the reference point is another event in the past (e.g. my arrival) rather than the moment of speaking.

Participles like *breaking* and *broken* involve summary, and not sequential, scanning. Notice that the time arrow "T" in the diagrams in the bottom half of Figure 18 are not marked in bold, which is to signal that the respective stages are accessed via summary scanning (rather than sequential). Of course, the whole sentences *It is breaking*, *It is broken*, and *It has broken* profile relations developing over time, but the flow of time is evoked by the main verbs of the sentences, *to be* and *to have*, and not by the participles themselves. The lack of focus on time flow in the semantic characterization is corroborated by the fact that participles *breaking* and *broken* can function as adjectives, which (as you may remember from Chapter 3) profile atemporal relations. The construals, and consequently the meanings, of participles in progressive and perfect sentences are in fact very similar to the adjectival construals in nominal phrases. Consider the similarities in meaning between the expressions in (1):

(1) (a) *a **breaking** glass*   (a′) *A glass is **breaking**.*
      (b) *a **broken** glass*   (b′) *A glass is **broken**.*

To sum up, the construals behind participles involve "accessing" specific stages of processes denoted by their respective verbs and highlighting the stages for various purposes. The English present participle (*-ing*) profiles the middle stage, for instance, in order to convey that the process is in progress; the English past participle profiles the final stage, for instance, to specify the state of a thing or to convey that the final stage occurred before some moment in time (in perfect sentence). Both of the cases involve summary scanning: the middle and the final stages are depicted as atemporal relations. This is what makes it possible for them to function as adjectives in nominal phrases. When used in sentences, which express processes developing through time by definition, the time flow is denoted by the main verb of the sentence rather than the participle.

5.2. Scanning in other linguistic phenomena

Scanning is ubiquitous in language, because whenever we conceptualize complex entities, we access their component parts in one way or another. In this section we will take a closer look at two more examples of the process.

5.2.1. Virtual motion

Consider the examples in 2 (below). There is something seemingly paradoxical happening: the sentences use a verb denoting motion to talk about an unmoving object. In CG, this phenomenon is termed **virtual motion**. Even though the path in question is perfectly motionless, we evoke the concept of movement to describe its relation to the city and the forest. But if the path is motionless, why do the sentences refer to motion in the first place? The answer to the question is complex and the topic will be discussed in more detail in Chapter 11, but at this point we may simply conclude that the verb *to run* signals sequential scanning along the path performed in the mind of the speaker. In other words, it is not the path that runs, it is the conceptualizer that mentally traces the path between the city and the forest. The difference in meaning between (2a) and (2b) is essentially the difference in the direction of scanning: in (2a) the starting point of scanning is the city and the end point is the forest, while in (2b) it is the other way around. Since the road does not actually move in any direction, both of the sentences sound natural: it is entirely up to the speaker which direction of the virtual motion they choose, because nothing in the real world determines the choice between the two variants.

(2) (a) *The road* **runs** *from the city to the forest.*
    (b) *The road* **runs** *from the forest to the city.*

A less apparent example of virtual motion can be found in (3) (derived from Talmy 1988b). When you think about it, the sentence is slightly weird, because while referring to location of the houses, it uses the expression *every now and then*, which refers to occurrence of events in time.

(3) *There's a house* **every now and then** *through the valley.*

This can be explained by proposing that the construal behind the sentence involves sequential scanning. Even though the locations of the houses remain static, the conceptualizer accesses them one by one in a sequence, starting from

some reference point ("R"). The construal is sketched in Figure 19. This instance of scanning can be likened to looking at the valley from a bird's-eye view, when the observer focuses first on the nearest house, then shift their gaze to another house, and so on, until all the houses are covered. We may describe this as virtual motion, because even though nothing moves in physical space, the conceptualizer "moves" with their gaze from one location to another.
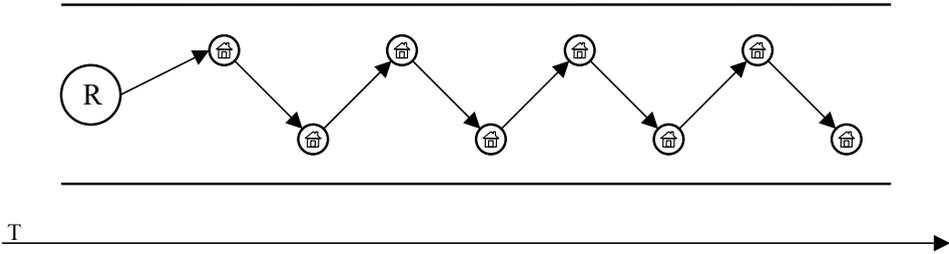
Figure 19 : Virtual motion in (2)

5.2.2. *Each* vs. *every*

Scanning can also account for the semantic difference between the quantifiers *each* and *every*. Quantifiers are words and expressions that specify the amount of some entity and usually go together with plural and non-plural masses (see Section 4.1). Words of this type will be covered in greater detail in Chapter 10; at this juncture, we will only focus on a subtle difference in meaning between *each* and *every*. The two words are similar in that both profile a single item from a collection of objects. Yet even though the quantifiers refer to a single item, they serve to indirectly refer to all items in the collection. For example, in (4) the singular form of the noun in *every slice* indicates that the whole expression refers to one piece of pizza, but ultimately both of the sentences say something about all slices. How is this possible?

(4) (a) *I will enjoy **every** slice of the pizza.*
    (b) *I will enjoy **each** slice of the pizza.*

The meanings of the two quantifiers involve the idea that all elements of the collection are the same in some respect; e.g. in (4) the speaker enjoys all slices of pizza equally. Since all of the items are the same in some respect, the speaker has a choice to focus on one representative element, because what is explicitly said about this element will be indirectly implied about all the others. This is what *each* and *every* have in common. The difference between then lies in how the speaker apprehends the collection. In the

case of *every*, the representative is construed against the group of things apprehended simultaneously via summary scanning. The speaker could say (4a) while looking at a pizza that has just been cut into slices, but all of the pieces are still in place. In the case of *each*, the items are accessed one by one in a sequence, i.e. sequential scanning takes place. Thus, the speaker of (4b) may be looking at a sliced pizza, while imagining the action of eating one slice after another. In general, the presence of sequential scanning in *each* creates the impression that greater emphasis is placed on individual element of the collection. This is because during particular steps in sequential scanning the respective elements are singled out as the focus of attention to a greater extent than in the case of summary scanning in *every* (cf. Langacker 2016, 146).

Study questions

1. At one point of his novel *Roadmarks*, Roger Zelazny describes a dragon in the following way: "Its coinlike scales ranged from gold on its breast to jet upon its back, running from copper through red down the length of its tail and back across the breadth of its great vanes" (Zelazny 1979). How is scanning used in the construal behind this description?
2. Can you think of another pair of sentences, other than (4), that illustrates the difference between *each* and *every*?
3. On the chessboard below, there are several paths from point "A" to point "B." Each path is created when the fields of the chessboard are scanned in a certain sequence. Can you propose 3 different paths leading from "A" to "B"?
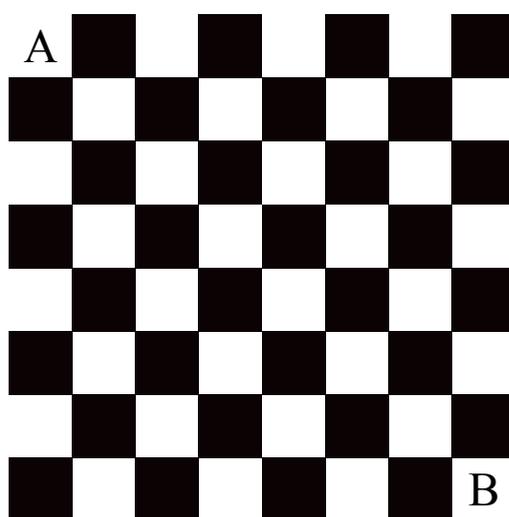
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6. Grammatical relations

Words in a phrase or a sentence are closely connected to each other; this is precisely what makes phrases and sentences (fairly) self-contained wholes rather than arbitrary bunches of random words. However, not all elements of a phrase or a sentence are related to each other in the same way. For instance, in (1) the first indefinite article *a* is more closely associated with *cat* than with *on* or *mat*.

(1) *a yellow cat on a mat*

Similarly, the *yellow* in (1) specifies the cat rather than the mat, even though in principle *mat* can also go with a color adjective. In complex expressions words create groupings of closely related elements. The grouping may form hierarchies: individual words form smaller groups and the groups may function as elements of yet more complex assemblies. For instance, in (1) *a mat* forms a tightly connected pairing, which, in turn, is a part of the entire phrase.

In this chapter we will discuss in more detail two kinds of fundamental grammatical relations between elements of sentences and other expressions: modification and complementation. The relations are used to form **composite expressions**, which can be defined tentatively as "meaningful combinations of words," regardless of whether they are fully-fledged sentences or not. Yet before we move on, we need to introduce a new theoretical term: **elaboration site** (**e-site** for short).

6.1. Elaboration sites

The notion of elaboration has been discussed briefly in the context of dimensions of construal (see Section 3.1). The process consists in specifying a more schematic (i.e.

general) concept in more detail. For example, the schematic concept ANIMAL can be elaborated into the more specific concept CAT. An elaboration site is a schematic element of word's meaning that can be specified by other element of an expression. This is perhaps best illustrated with words involving relational construals like prepositions. For example, in its basic sense, the preposition *in* denotes a spatial relation between two entities, but it does not specify in any appreciable detail what these entities are. The technical terms for the entities in the relation are already familiar: the more prominent one is the trajector (e.g. the entity in a "container") and the other one is the landmark (the "container" entity in which the trajector is located). However, the fact that the entities are not specified does not mean that they are entirely absent from the meaning of the prepositions; it only means that they function as "slots" to be "filled in" by something prompted by other words in a sentence. In fact, even when the preposition appears in isolation, we may be able to say something more about the trajector and the landmark. For example, in the case of *in*, we know that the landmark will have to be a thing and that the trajector can be either a thing (as in *a cat in a box*) or a relation (as in **I bought the cat** *in January*). This information about the participants is "built into" the meaning of the preposition. If this were not the case, we would not be able to say anything about the participants on the basis of *in* alone.
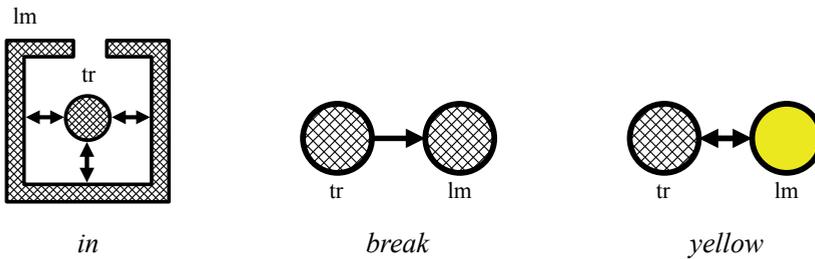
Figure 20: Elaboration sites of *in*, to *break*, and *yellow*

In general, a word with a relational profile involves an elaboration site when a participant of the relation is schematic and very little can be inferred about the participant on the basis of the word alone. For instance, when we specify that the word *yellow* is used as an adjective, we do know that the word specifies the color of a thing, but we do not know what this thing is. Therefore, the thing serving as the trajector of *yellow* is a part of the word's semantics, but it remains schematic and is an elaboration site of the adjective. Similarly, the process denoted by the verb *to break* suggests two participants, the trajector performing the action of breaking and the landmark that is broken, but the verb does not say much about either of the participants; hence, the participants are schematic elaboration sites of the verb.

Figure 20 sketches the profiles of *in*, *yellow*, and *to break*; the cross-hatched elements are the respective e-sites.

6.2. Modification

The name of this relationship may be misleading. Strictly speaking, modification does not necessarily change anything about the "modified" word; usually, it merely provides additional information about the word's referent. A typical instance of modification is the relationship between an adjective and a noun in a noun phrase. In (1), the relationship holds between *yellow* (the modifier) and *cat* (the modified element).[6] Thus, the relationship between an adjective and a noun will serve as a basic illustration of the mechanisms behind this grammatical relation.

As already mentioned (Section 3.2), within the CG framework, adjectives profile relations. This indicates that their meaning typically features at least two elements, the trajector and the landmark, connected by a relationship of some sort. In the case of color terms like *yellow*, the landmark is a region of the color space. When the adjective appears in isolation, outside the context of a larger phrase, the trajector is an unspecified thing, i.e. it is an unelaborated e-site. For *yellow*, this configuration is sketched in Figure 21(a). The e-site is marked with cross-hatched circle and for the sake of simplicity only the relevant part of the color spectrum is presented in the landmark.
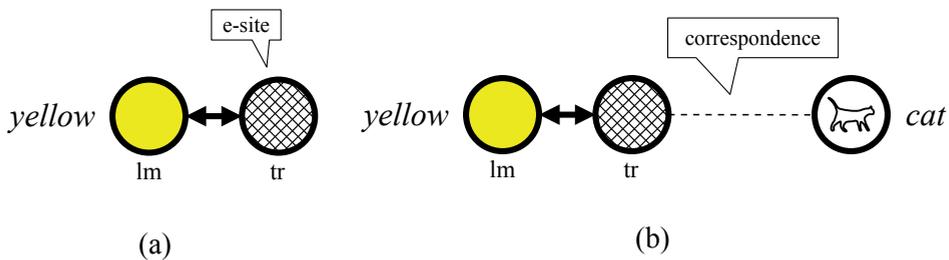
Figure 21: The construal behind *yellow*

Moving on to the composite expression *yellow cat*, the e-site of the adjective is compatible with a nominal construal, i.e. there is no fundamental conflict in meaning between the two. A cat is a kind of thing (in the technical CG sense) and the two differ only with respect to how much detail they feature. In general, from the purely formal

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[6]   For the sake of simplicity, we will omit the contribution of the indefinite article a from the analysis in this and the following section. We will return to the role of the indefinite article in Section 15.2.

point of view, any word that profiles a thing should make a well-formed phrase with *yellow* (at least in principle), although the resulting phrase may be quite nonsensical (e.g. *yellow democracy*). In CG terms, we may say that when a noun is combined with an adjective, the profile of the noun **corresponds** to an elaboration site of the adjective. In Figure 21(b), this correspondence is marked with the dashed line. Since the profile of *cat* is compatible with the e-site of *yellow*, the former can "fill in" the e-site, like a tab of a piece in a jigsaw puzzle fills in the corresponding indentation in another piece. Once the process is complete, we end up with a coherent construal of cat (provided by the noun *cat*) related to a region of the color space (provided by the adjective *yellow*), as sketched in the upper part of Figure 22. Note that (leaving some visual simplifications aside) the upper portion of the figure is similar to Figure 10, where the construal of *This ball is yellow* was sketched.
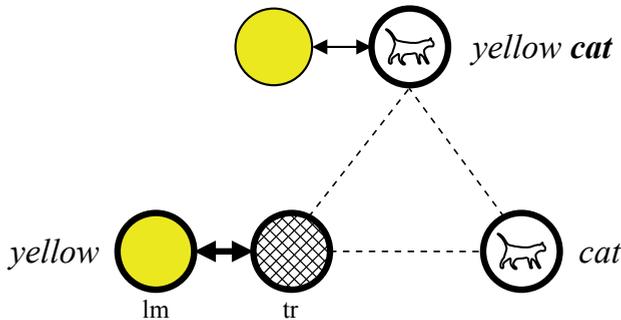
Figure 22: The construal behind *yellow cat*

In order to offer a comprehensive description of a composite expression, one needs to determine its profile. Notice that the profiles of the components of *yellow cat* are of different types: *yellow* profiles a relation and *cat* profiles a thing. Since the composite expression cannot have two incompatible profiles at the same time, the profile of the entire expression is usually inherited from one of the components. *Yellow cat* inherits the profile of *cat*, because the entire expression denotes (a kind of) cat rather than (a kind of) yellow. In Cognitive Grammar the element of a composite expression that determines the expression's profile is called **the head**. In Figure 22, the profile of the expression is marked with the heavy-line circle around the cat and the bold font marks the head of the expression.

We are now in a position to propose a general definition of the relationship of modification in composite expressions.

(I) **Modification** takes place when element X elaborates an e-site of another element Y and the composite expression inherits its profile from X.

This configuration is sketched in Figure 23.
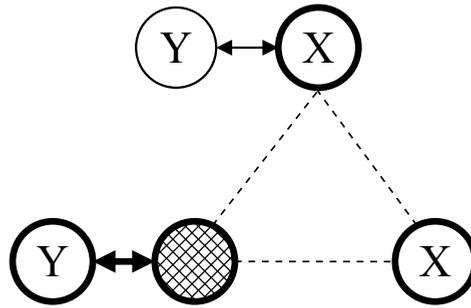
Figure 23: The basic mechanism of modification

6.3. Complementation

Roughly speaking, complementation takes place when a word or phrase provides information required by another word or phrase.[7] We will illustrate complementation with the relationship between the preposition *on a mat* in (1). The basic building blocks of the analysis are already in place – once again, the key elements are e-sites, elaboration, and profile inheritance, which have already appeared in Section 6.2. Let us start with the preposition *on*, which in (1) has a very prototypical meaning: it denotes a spatial relation between two things. Thus, the meaning of *on* features two elaboration sites for things, one for the trajector and one for the landmark, supplied by other elements in a composite expression. One of the elements is the concept MAT, whose profile corresponds to the profile of the e-site for the landmark (see Figure 24).
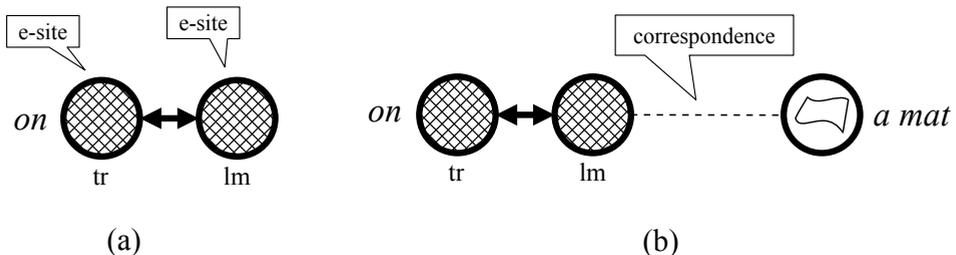
Figure 24: The construal behind *on*

The same *complementation* is also used in a different context to refer to the relationship between the main clause and an embedded clause. Clausal relations will be discussed in more detail in Chapter 14.

Once the landmark e-site is elaborated by the referent of *mat*, the composite expression *on a mat* arises. What is the profile of the entire composite expression? *On a mat* denotes a spatial location (rather than a mat), so the profile is inherited from the preposition (rather than the noun). The entire configuration is presented in Figure 25. Pay attention to the patterns of bold lines, signaling profiling, in the upper and lower part of the diagram.
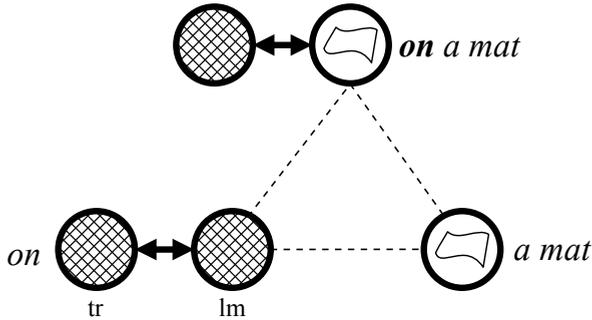
Figure 25: The construal behind *on a mat*

On the whole, complementation can be defined as follows:

(II) Complementation takes place when element X elaborates an e-site of another element Y and the composite expression inherits its profile from Y.

This configuration is sketched in Figure 26. As you may have noticed, the difference between (I) and (II), as well as between Figures 23 and 26, is minimal. Essentially, it boils down to the question of which component word supplies the profile of the entire composite expression. In modification, the profile is inherited from the element elaborating the e-site of another element. In complementation, it is inherited after the element whose e-site is elaborated.
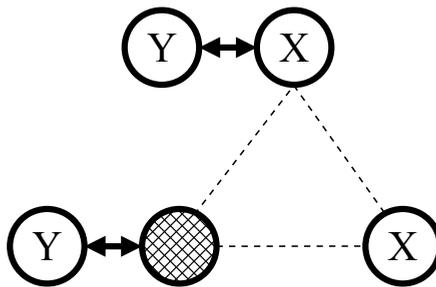
Figure 26: The basic mechanism of complementation

6.4. Compositional paths

We have already accounted for the formation of *yellow cat* (modification) and *on a mat* (complementation). However, we have not yet described the creation of the entire expression in (1). In essence, the process of putting together larger phrases like (1) is very similar to the process of putting together smaller phrases like *yellow cat* and *on a mat* – it consists in combining smaller elements into bigger structures by means of modification and complementation (and possibly other grammatical processes, some of which will be discussed in the following chapters). This time, however, the elements in question are phrases rather than individual words. *Yellow cat on a mat* can be put together from smaller components in two slightly different ways. One option is that the phrases *yellow cat* and *a mat* are combined with the prepositions *on* – the former elaborates the trajector of the preposition, whilst the latter elaborates its landmark. This analysis is sketched in Figure 27. The lower left portion of the diagram is the same as Figure 22; this is where the composite expression *yellow cat* is constructed by means of modification. Then, the phrase corresponds to the trajector of *on* in the middle of the diagram and the landmark of the preposition corresponds to *a mat*. Once all of the elements are put together on the higher level of linguistic organization, the entire composite expression *yellow cat on a mat* is formed. The profile of the expression is inherited from *yellow cat* (the bold-line circle around the image of a cat), because the entire expression refers to a cat rather than to the relation of being on the mat.[8] More formally speaking, *cat* is the head of the entire composite expression. Since *cat* elaborates an e-site of *on* and the resulting expression inherits the profile of *cat*, the process of combining the two is that of modification. This conclusion is perfectly compatible with the intuitive understanding of modification as the relationship between an adjective and a noun: *on a mat* provides more information about the animal and therefore its function is similar to that of the adjective *yellow*. The entire sequence of processes leading up to the final composite phrase is called a **compositional path**. In Figure 27, the path begins at the bottom of the diagram and ends at the top.

There is, however, one more way in which (1) can be put together, sketched in Figure 28. *Yellow cat* is composed as in the previous version, but now *on a mat* is pre-built into a single phrase before *yellow cat* elaborates the trajector of *on*. In this alternative compositional path, *on a mat* functions as a separate component that is combined with *yellow cat* on a higher level composition (see the lower right part

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[8]   In other words, to determine the profile of the expression like *yellow cat on a mat* you can ask yourself a question: "Does the expression denote a kind of cat or a kind of being on?"

of Figure 28). Then, just like in the first version of the path, *yellow cat* elaborates the trajector of *on* and the resulting phrase is once again *yellow cat on a mat*. The entire composite expression denotes a cat (i.e. cat is the head of the expression), so the process still counts as modification.
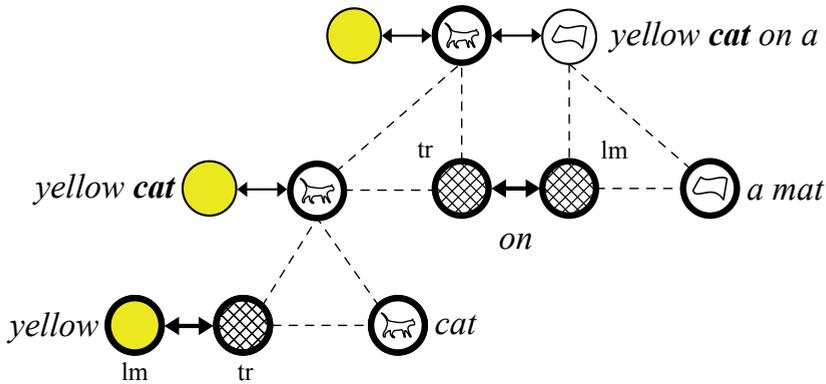
Figure 27: Compositional path of *yellow cat on a mat*
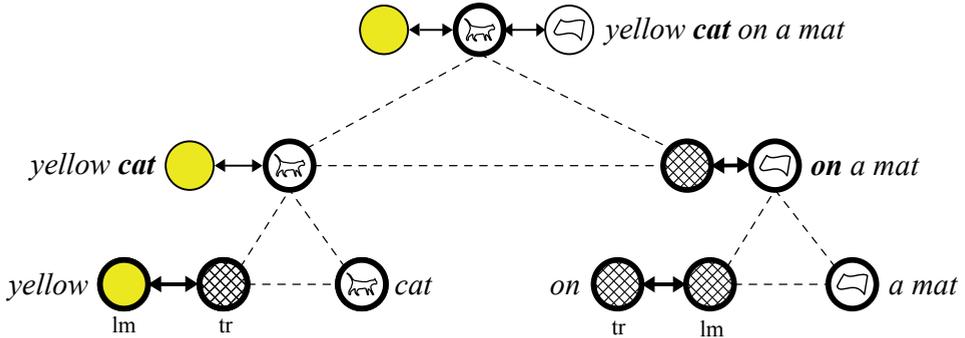
Figure 28: Alternative compositional path of *yellow cat on a mat*

The two compositional paths sketched in Figures 27 and 28 are equivalent in that they both account for how (1) is gradually put together from individual words via the modification and complementation. The alternative path in Figure 28 may have one advantage over the first path, because there is some evidence that *on a mat* does function as a separate composite phrase. Imagine that you are pronouncing (1) in a slow deliberate way, pausing for a while between various parts of the expression, as if you were hesitating. Probably the most natural place for a longer pause would be between *cat* and *on* rather than *on* and *a mat*, as in (1′).

(1′) (a) *yellow cat | on a mat*
    (b) ???*yellow cat on | a mat*

While this is not a knock-down argument against the compositional path in Figure 27, it does suggest a kind of "boundary" between *yellow cat* and *on a mat*, which is explained by Figure 28: at some point of the compositional path, *on a mat* functions as a separate component that resists getting broken up by hesitation pauses. The compositional path in Figure 27 does not have *on a mat* appearing anywhere as a separate component, so it accounts for the hesitation pauses in (1′) less successfully.

6.5. Interlude: compositionality and analyzability

We can talk about two different ways in which individual components function as parts of the entire composite expression. One way is to think about the way each component contributes some meaning to the whole expression. In (1), the words *yellow*, *cat*, *on*, and *mat* chip in with smaller bits of meaning that are combined into a complex conception A YELLOW CAT ON A MAT. This aspect of a composite expression is termed **compositionality**. Compositionality is a matter of degree, so expressions can be compositional to smaller or greater extent. The meaning of a fully compositional expression is a simple sum of the meanings of its components. We may also say that the meaning of a fully compositional expression is fully predictable from the meaning of its components. In this sense, (1) is compositional to a very large extent.

Consider, however, the word *catnip*. Etymologically, the word is a combination of *cat* and *to nip*, which certainly makes a lot of sense, when you know what the plant is and how cats tend to react to it. Yet *catnip* is not fully compositional, since the meaning of the word is something else than a simple sum of CAT + TO NIP. Catnip is neither a cat, nor an action of nipping, so the actual referent, i.e. the plants of the species *Nepeta cataria*, is not explicitly signaled in the expression. This means that a person who does not know what catnip is most probably would not guess the meaning on the basis of the word's phonological form. In other words, compositionality decreases, when the semantics of a complex word or expression is something more than a simple sum of the component meanings and the composite meaning cannot be fully predicted on the basis of the parts. By this token, the word *catmint*, an alternative name for *Nepeta cataria*, is slightly more compositional than *catnip* in that the morpheme *mint* gives the hearer a better idea about what the referent is. Nonetheless, *catmint* cannot be said to be fully compositional either,

since the meaning of the word is still something more than the sum CAT + MINT. Most probably, a person familiar with this word could define along the lines of (i). While the plant and cats are indeed mentioned in *catmint*, most of the meaning in (i) cannot be inferred from the meaning, so the word is still largely non-compositional.

(i)   a plant that acts as a mild stimulant for cats and produces in these animals short-lived effects reminiscent of joyful intoxication

Another way is to think about the degree to which speakers are aware of the semantic contribution of each component to the meaning of the whole expression. This aspect is termed **analyzability**. Once again, analyzability is a matter of degree and (1) can be said to be analyzable to a very large extent. We may safely assume that the hearers of (1) are very much aware that the words *yellow*, *cat*, *on*, and *mat* are parts of *a yellow cat on a mat*. Arguably, most speakers of English are also aware that *catnip* includes the words *cat* and *nip*, but since the name of the plant is used routinely as a single word, it would not be entirely surprising if some speakers were oblivious to the fact that the name "made up of" two words. If this is the indeed the case, *catnip* is analyzable to a smaller extent than (1). Now consider a situation when a speaker defines the word *catalog* as (ii).

(ii) a booklet containing photographs and descriptions of cats

Needless to say, this is a jocular example and it is highly unlikely that a competent speaker of English really believes that (ii) is a correct definition of the word. Yet it is not hard to see how this joke could work. Obviously, from the point of view of compositionality, catalog is certainly not *cat + alog*. Yet in principle, it is possible to play with the word and decompose it into these two elements; after all, no one could deny that the chunk *cat-* is very much a part of *catalog*. If this hypothetical scenario actually happened, we could claim that the compositionality and the analyzability of *catalog* do not match – even though the word in not composed of the word *cat*, it is nonetheless analyzed by speakers into this phonological form.

Study questions

1. What are the grammatical relations between the words in the following phrases? (You may ignore the relations between the articles *a*/*an* and *the* and nouns, as well as *to* and verbs.)
    a) *a big black car*
    b) *an elf on a shelf*

    c) *to want a banana*
    d) *to eat with a spoon*
    e) *to sneeze quietly*
    f) *a very noisy cat*

2. The word *bikini,* referring to a type of swimsuit, comes from the name of the Bikini Atoll, a group of islands in the Pacific Ocean. After some time, *bikini* gave rise to words for other types of swimwear, e.g. *monikini* and *burkini*. How can we explain the creation of these words if we bear in mind that in English the geographical name Bikini is not a composite expression?

3. The expression *a yellow cat on a mat* is syntactically ambiguous – it has two different meanings depending on how the expression is put together from constituent words. Can you sketch two compositional paths leading up to these two meanings?

References and further reading

- Langacker, Ronald W. 2008. *Cognitive Grammar. A Basic Introduction.* New York: Oxford University Press.
    ◦ Sections 3.2.2 and 7.3
- Langacker, Ronald W. 2013. *Essentials of Cognitive Grammar.* Oxford–New York: Oxford University Press.
    ◦ Sections 3.2.2 and 7.3
- Taylor, John R. 2002. *Cognitive Grammar*. Oxford: Oxford University Press.
    ◦ Section 12.2

7. Constructional schemas

Languages are governed by rules. Without anything specifying the shape of linguistic expressions, our utterances would be nothing more than sequences of arbitrary words strung together in random order. Needless to say, it would be extremely difficult to communicate effectively with such "sentences" and their capacity to express our thoughts would be very limited. While it would be hard to deny that the use of language is rule governed, it is far from obvious what the nature of the rules is. Most certainly, they are not like legal regulations and laws governing our social life, like the rule that says that I should stop when I see a red traffic light. Such regulations are deliberately laid out and modified by law-makers, they have to be learned explicitly, and one can be punished when one breaks them. However, the rules of grammar are not expressly formulated and cannot be easily changed by authorities, they are not learned explicitly (at least not in the case of speaker's mother tongue), and there is no serious punishment for breaking them.

While there is some room for debate about the exact nature of language rules, in Cognitive Grammar they come in the form of **constructional schemas**. Constructional schemas are best understood as "templates" of composite expressions that can be used to create novel phrases and sentences. Essentially, the schemas are (as the name suggests) schematic concepts of sentences abstracted from utterances heard by infants during language acquisition. They are schematic in that they do not include information about specific words used in expressions, so they are not actual sentences heard and memorized by children. Rather, they are general types of phrases and sentences that are acceptable in a given language. For example, the sentence *Floyd broke the glass* is built on the basis of the constructional schema of the English transitive sentence, which can be tentatively written out as NOUN PHRASE$_1$ + VERB + NOUN PHRASE$_2$.

7.1. Elaboration and extension

We have already seen that schematic elements can be elaborated by more specific concepts. For example, in the previous chapter we saw how a noun or a nominal phrase can elaborate an e-site of a word with a relational meaning. Constructional schemas can also be elaborated into more specific structures. Since the schemas are essentially general and abstract concepts of complex expressions, when they are elaborated, they result in a specific complex expression. For example, the schema for an English transitive sentence NOUN PHRASE$_1$ + VERB + NOUN PHRASE$_2$ can be elaborated into a concept of the specific transitive sentence like *Floyd broke the glass*. Of course, this kind of sentence can be readily used in a usage event. In this case, elaboration consists in specifying in more detail particular elements of the constructional schema: NOUN PHRASE$_1$ is elaborated into FLOYD, VERB is elaborated into BROKE, and NOUN PHRASE$_2$ is elaborated into THE GLASS. In cases like this, we say that the constructional schema **sanctions** the specific expression, i.e. it provides a general template for a specific expression. Consequently, the expression elaborates the schema. This situation is depicted in Figure 29.
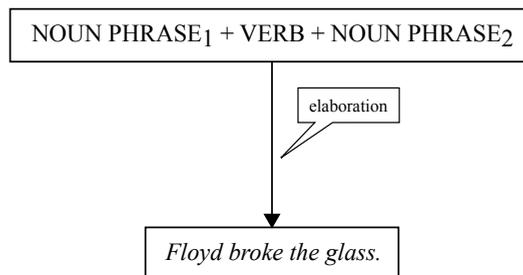
Figure 29: Elaboration of a constructional schema

When a schema sanctions a sentence, the expression is fully compatible with the schema. To put it less technically, speakers of the language have the impression that the expression is "well-formed" or created in accordance with the rule. Yet this is not always the case and it is sometimes possible to hear a sentence that is somehow "anomalous" and "ill-formed." This does not necessarily mean that the sentence is ungrammatical, nonsensical, or hard to understand. Rather, it means that some aspect of the expression does not conform with the constructional schema in the expected fashion. One example widely discussed by cognitive linguists is the transitive variant of the verb *to sneeze* in (1b).

(1) (a) *Floyd **sneezed***.
    (b) *Floyd **sneezed the cat** awake*.

In its basic sense, the verb in question is intransitive, i.e. it normally does not take an object. We say that people sneeze, not that they sneeze something. Thus, *to sneeze* is associated with the constructional schema for intransitive sentences, let us write it out as NOUN PHRASE + SNEEZE. It is expected that when the verb is used in a sentence, the sentence will be sanctioned by the intransitive schema, as in (1a). The sentence in (1b) is therefore "anomalous" in that it does not involve the intransitive constructional schema expected for *to sneeze*. In such cases, we could say that (1b) is an **extension** of (1a), because it includes elements that are absent from (1a) – in this case it involves the object (*the cat*), which does not normally appear in sentences with *to sneeze*. On the formal level, (1b) looks like a transitive sentence, but since the verb is not normally associated with the transitive constructional schema, there does not seem to be a standard schema that could sanction it. We may therefore say that extension happens when an expression or a sense of a word is created by means of "pushing the envelope" of pre-existing words and expressions rather than by means of elaborating a standard schema. The relations between the constructional schema and the sentences in (1) is sketched in Figure 30.
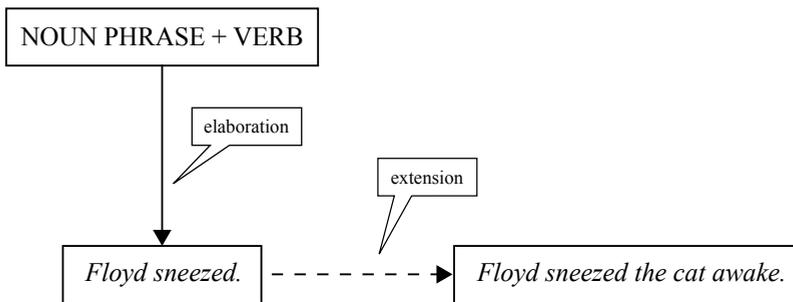
Figure 30: Relations between the constructional schema and the sentences in (1)

Note, however, that (1b) is perfectly meaningful and even though it is unconventional, it is far from clear whether all native speakers of English would readily judge it as ungrammatical. Slight deviations from "norms" provided by constructional schemas oftentimes do not cause major breakdowns in communication and may even go unnoticed. This is because linguistic communication does not consist of a strict application of pre-defined rules, but rather a dynamic negotiation of meaning. In typical circumstances we pay more attention to what our interlocutors are trying to say than to whether they perfectly follow the rules of grammar. Real-life communication resembles puzzle solving: given the linguistic cues provided by speakers and context, we do our best to reconstruct the meaning they are trying to convey. Obviously, when the speakers use words and phrase patterns familiar to the ones we are familiar with, the communication is much easier. However,

fluent speakers of a language are very good at solving linguistic puzzles, so small abnormalities are usually not fatal to comprehension.

Let us return for a moment to the transitive variant of *to sneeze* in (1b). As already mentioned, the variant is an extension of the more standard variant associated with the intransitive schema, exemplified in (1a). Let us suppose that for one reason or another speakers of English find the transitive variant of *to sneeze* quite useful and appealing. Does it not make sense to use sentences like (1b) to talk about events caused by loud and unexpected sneezing? If other speakers start producing sentences with the transitive variant of the verb, the new variant may become conventionalized and become a part of standard English. If the transitive variant is used only in the contexts of waking up cats, at best a new fixed phrase would be coined: *to sneeze the cat awake*. Yet if speakers use the transitive variant in other contexts, i.e. for other objects and events, a new constructional schema may emerge: NOUN PHRASE$_1$ + SNEEZE + NOUN PHRASE$_2$ + ADVERB PHRASE. If this happened, the new sense of the verb would become conventionalized and "standardized," so that the speakers of English could routinely say something like *to sneeze a napkin off the table*, *to sneeze the fly away*, *to sneeze one's nose clean*, etc. Such expressions would not be formed via extension of the intransitive variant anymore, but via regular elaboration of the new constructional schema NOUN PHRASE$_1$ + SNEEZE + NOUN PHRASE$_2$ + ADVERB PHRASE.

7.2. Major and minor schemas

Cognitive grammarians believe that while language is rule governed, rules embodied in constructional schemas are flexible templates and patterns of regularities rather than inviolable laws that can never be stretched or broken. No natural language is entirely regular and exceptionless. Traditional grammarians tend to think about language in terms of rules and exceptions (although they do not always use these precise terms). Cognitive grammarians, on the other hand, prefer to think in terms of degrees of regularity.

Consider the way of making a past verb forms in English. Traditionally, the "regular" way to do this is to add the past tense suffix *-ed* to the verb, like in *to regulate–regulated*. Yet some verbs do not comply with this pattern, e.g. *to let–let*, *to hide–hid*, *to drive–drove*, etc. Verbs of this kind are sometimes termed "irregular." Nonetheless, after a closer inspection, it turns out that the collection of English "irregular" past tense forms is not a chaotic mass or entirely random forms; on the contrary, there are some small-scale similarities between many elements. For instance, the past tense of *to let – let* is created just like the past tense of *to hurt–hurt*, *to hit–hit*, *to burst–burst*, and several others, i.e. the past tense form is identical to

the infinitive. Likewise, *to hide–hid* is formed like *to slide–slid*, while *to drive–drove* like *to dive–dove*, *to strive–strove*, and *to thrive–throve*, still used by some speakers. Surely, these are not large-scale regularities and many of the forms are giving way to more regular variants (e.g. *dived*, *strived*, *thrived*). Nonetheless, some smaller patterns of regularities are evident. For this reason, it is more useful to talk about:

- major constructional schemas, used to create most expressions and often recognized as "regular," and
- minor constructional schemas, whose scope of application is smaller and which are usually labeled as "irregular" ways of creating phrases and sentences.

It is sometimes the case that a word or a phrase admits two different schemas for a particular construction. In English, one example is the verb *to hang*, whose past form can be created by means of the major "regular" schema (*hanged*) or minor "irregular" one (*hung*). Languages generally tend towards economy, so such situations are usually not meant to last. Competition between two schemas can end in several ways. In the case of English *to hang*, the two schemas become **specialized**, so that each is compatible with a different semantic variant of the verb: the minor schema is used when the verb denotes hanging inanimate objects (*Jack **hung** a picture on the wall*) and the major schema when the verb denotes execution by hanging (*Executioners **hanged** Jack for stealing a picture from the wall*). In many cases, however, minor schemas "die out" and give way to major schemas. For instance, the "irregular" way of making the past form of *to thrive* (*throve*) has been almost completely superseded by the "regular" way (*thrived*) and most probably the same fate awaits the verb *to strive*. In traditional terms, we could talk about grammatical forms becoming more regular over time.

While this kind of "regularization" is a very frequent phenomenon, it is, in fact, possible for a minor schema to resist the process and survive. In English, one example is the extremely "irregular" verb *to be*, whose past forms are created by a highly unusual minor schema. Notice that the constructional schema for *to be* is limited to this verb alone – there are no other English verbs whose past forms are created in this way. What helps this highly specific and limited constructional schema to survive is **entrenchment**, i.e. the degree to which the schema is established in the mind of speakers. Since the verb is very frequently used in everyday speech, the minor schema is firmly fixed in the minds of speakers, if only because they repeat the "irregular" past forms over and over again. The "irregular" past forms of less frequently used verbs, like *throve* and *strove*, tend to "fade away" from users' minds and when a need arises, speakers resort to the better entrenched major schema to create the past tense forms (*thrived* and *strived*).

Study questions

1. Can you propose a constructional schema that sanctions the phrase *a big cat with sharp claws* and propose an expression that extends the phrase?
2. Despite the fact that *to sneeze* and *to freeze* have similar infinitive forms, their past forms are made very differently: *sneezed* and *froze*. If the verbs were to develop similar past forms in the future, which pair do you think is more likely: *snoze* and *froze* or *sneezed* and *freezed*? Why?
3. Can you think of other words *to thrive* and *to strive* whose grammatical behavior may become more regular over time?

References and further reading

- Langacker, Ronald W. 2008. *Cognitive Grammar. A Basic Introduction.* New York: Oxford University Press.
  - Chapter 8
- Langacker, Ronald W. 2013. *Essentials of Cognitive Grammar.* Oxford–New York: Oxford University Press.
  - Chapter 8
- Taylor, John R. 2002. *Cognitive Grammar.* Oxford: Oxford University Press.
  - Sections 28.1, 23.1, and 23.2

8. Reference point phenomena

To communicate effectively, we need to be able to successfully refer to things around us. When you go to the greengrocer's and ask the seller for a specific apple that you particularly like, you need to be able to explain which fruit you have in mind. You may, for example, say something like:

(1) *I want the apple to the left of the price tag.*

After hearing (1), the seller may be able to pick out the apple you want from the mass of fruit and even if your explanation is not entirely unambiguous, it significantly limits the pool of items you may be interested in. In more abstract terms, when you say (1), you use the price tag in question as a **reference point** to access one particular object (one particular apple) from a bigger pool of candidates (the collection of fruit).

The basic reference-point configuration is sketched in the left-hand part of Figure 31, where "R" stands for the reference point used to "pick out" a target ("T"). Even though reference points are frequently used to direct the hearer's attention to a real-world physical object, configurations of this type are mental structures rather than physical arrangements of things. Thus, the "R" and "T" in Figure 31 are concepts and the relation between them is a mental association rather than a physical connection. When you say (1), *the apple* and *the price tag* express concepts, although in this case the concepts have counterparts in the material world. The ellipsis marked as "D" stands for the **dominion**, i.e. the pool of concepts to which the reference point gives potential access. In (1) the dominion is the concepts of all apples that you can possibly locate in relation to the price tag. "S" stands for the speaker making use of the reference point to access the target and the arrows stand for the path of mental access: from the speaker via the reference point concept to the target concept. The

greengrocer's scenario, sketched in the right-hand part of Figure 31, can be viewed as an elaboration of the schematic configuration on the left.
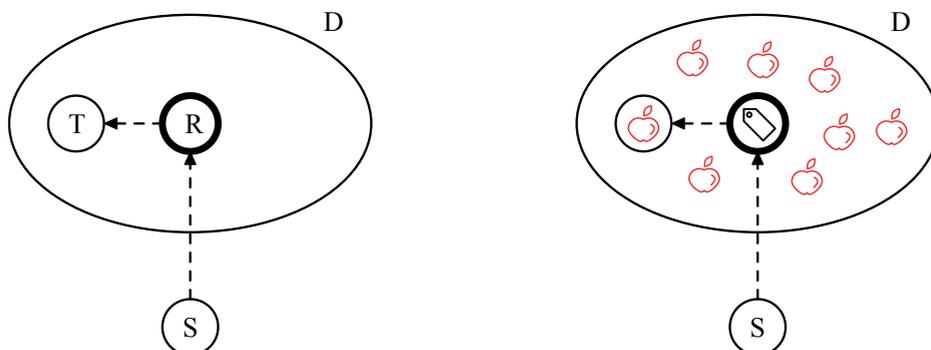
Figure 31: Reference point arrangement

In (1) the reference-point arrangement is established by means of the prepositional phrase *to the left of the price tag*. However, configurations of this kind lie at the heart of many other linguistic phenomena where the speaker mentions one entity in order to direct the hearer's attention to something else. In the following sections we will take a closer look at a handful of illustrations, but as always it is worth remembering that the list is not exhaustive.

8.1. Possessives

English has several ways of expressing relationships of possession. For instance, the speaker may use the verbs *to have* (*I have an apple*) or *to belong* (*This apple belongs to me*), or imply the ownership indirectly (*I bought this apple*). In this section we will limit the discussion to the possessive construction, where the possession is signaled by a word preceding the noun, like **my** *apple* or **Jack's** *apple*. Constructions of this sort are created by means of modification (see Section 6.2) and the head of the composite expression is the owned object. For example, the composite expression *Jack's apple* profiles an apple (rather than Jack). The possessive construction is somewhat similar to the basic modifying construction with an adjective (e.g. *green apple*) in the sense that possession is a relation between two entities: the possessed entity (*apple*, functioning as the trajector) and the possessor (*Jack*, functioning as the landmark). In terms of the reference-point configuration the possessor (*Jack*) serves as the reference point for "picking out" the possessed entity (*apple*).

To see how possessives can be used as reference-point constructions similar to the one in (1), consider a scenario in which the speaker returns home, unpacks the groceries, and puts them on a table next to one of his other flatmates' apples. The speaker then hears one of the flatmates say:

(2) – *Can I have this apple?*
      – *No, but you can have **Jack's apple**.*

Despite the fact that the grammatical form of *Jack's* in (2) is different from the prepositional phrase *to the left from the price tag* in (1), it is quite clear that they perform the same function: they are to pick out one object (Jack's apple) from the pool of potential candidates (all the apples on the table) and direct the hearer's attention on this particular thing. This is, of course, the basic function of reference-point expressions.

8.2. Interlude: too many terms!

At this juncture the interrelations between various theoretical terms, like *reference point*, *landmark*, *and possessor*, may be somewhat confusing. First of all, it should be clarified that the terms are not mutually exclusive – it is not the case that one concept has only one role to play. Rather, the terms like *trajector* and *landmark* hint at a different way of looking at the relationship than the terms *reference point* and *target*. The former pair pertains to the relative importance of participants within a relation generally, while the latter pair points to the roles in a specific reference point construction.

To make a real-life analogy, consider the relation between a cat owner and their pet. Depending on which aspect of the relationship you wish to focus on, you can apply different labels to the participants. For instance, you can take a strictly biological perspective and talk about *human* and *cat*. If you consider the relationship as a type of ownership, you can talk about *owner* and *pet*. Alternatively, if you prefer to think about the relationship in terms of caregiving rather than ownership, you may opt for *caregiver* and *pet*. These labels are not mutually exclusive; they merely suggest that we are focusing on a different aspect to the relation or that we look at the relation from a different point of view. Thus, the participant referred to as *cat* (biological perspective) may be also referred to as *pet* (ownership and caregiving perspective).

By the same token, in reference-point expressions one participant goes by several different labels depending on which aspect of the relationship we are currently focusing on. The roles performed by the two elements are summarized in Table 3.

Table 3: Roles of *Jack* and *apple* in *Jack's apple*

Aspect of the relation	Jack	apple
Possession role	possessor	possession
Reference-point role	reference point	target
Prominence in the construal (cf. sec. 3.2.2)	landmark	trajector
Grammatical role (cf. sec. 6.2)	modifier	head

8.3. Metonymies

Metonymy is a conceptual device in which one concept is used to refer to another concept associated with it. You may have noticed that this definition already hints at the mechanism evident in reference-point arrangements. A classic example is a metonymy that refers to political authorities by means of places where the authorities reside, like in (3), below. Strictly speaking, (3) cannot be interpreted literally, because the building of the White House is inanimate and therefore incapable of announcing anything. In (3) the nominal phrase *the White House* simply stands for the American president's administration.

(3) ***The White House*** *announced a new tariff on apples.*

More technically, in metonymy the concept evoked explicitly in the expression (THE WHITE HOUSE) serves as the reference point for accessing another concept (THE AMERICAN PRESIDENT'S ADMINISTRATION). Let us write out this relationship in the following manner:

THE WHITE HOUSE→ THE AMERICAN PRESIDENT'S ADMINISTRATION

where the concept on the left is the reference point for mentally accessing the concept on the right. One difference between a metonymy and a possessive is that in the case of the former the relationship between the reference point and the target is not necessarily possession. Metonymies frequently involve the relationships between parts and wholes (e.g. *I bought myself **new wheels**;* WHEELS→ CAR), as well as cause and effect (e.g. *I'm reading **Shakespeare*** (SHAKESPEARE→ SHAKESPEARE'S PLAY). Another difference is that in a metonymy typically only the reference-point concept is mentioned explicitly in the expression and the target is implied. This contrasts with possessive constructions where frequently both the reference point and the target are mentioned explicitly (cf. *Jack's apple*).

8.4. Active zone expressions

Active zones are somewhat similar to metonymies in that both involve a discrepancy between the concepts explicitly evoked in the expression and the intended referent.[9] One example of this kind is shown in (4a).

(4) (a) *Jack chewed the apple carefully.*
     (b) ⁇*Jack's teeth chewed the flesh of the apple carefully.*

At first glance it may appear that (4a) admits a perfectly literal interpretation, but after a closer inspection we would reach the conclusion that only a part of Jack's body does the chewing, not the "entire" Jack, contrary to what the sentence seems to imply. Moreover, it is safe to assume that Jack did not chew the entire apple (again, contrary to what the sentence implies), but only the flesh without the core, the seeds, and the stalk. Therefore, the sentence (4b) appears to be a much more accurate characterization of the event in question, although it is overly specific and would sound weird in most contexts.

In general, an **active zone** is the part of an entity that directly takes part in the process, even though the linguistic expression does not specify this exact part explicitly. As already mentioned, in (4a) the active zones of Jack and the apple most directly involved in the process are Jack's teeth and the flesh of the apple, yet neither is mentioned expressly in the sentence. Instead, (4a) evokes the whole entities to which the active zones belong. Thus, to use the reference-point terminology, we may say that the concepts JACK and APPLE serve as reference points for accessing the respective active zones: JACK → JACK'S TEETH and APPLE → THE FLESH OF APPLE.

8.5. Nested locatives

The final example is slightly more complex and involves nested locatives. For our purposes, we will define a locative as a prepositional phrase denoting a location in space, e.g. *under the chair*, *next to the door*, *above the lake*, *among trees*, etc. Locatives of this sort can be strung together in a sentence to specify the location of an object in more detail, like in (5).

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[9]   There is, in fact, some debate in cognitive linguistics on whether active zone expressions should be treated as special cases of metonymies and whether there are good reasons to keep these two notions apart.

(5) *Jack's apples are **in my flat, in the kitchen, on the table, next to the flower vase.***

The term *nested* hints at the arrangement of the subsequent location in the construal. While in (5) the locatives are aligned in a linear sequence, at the conceptual level they do not simply pop up in the mind of the speaker one after another. Instead, one location is embedded in another like figures in a Russian doll: the location denoted by *next to the flower vase* is inside the location denoted by *on the table*, the location of *on the table* is inside the location *in the kitchen*, etc. The configuration is sketched in Figure 32.
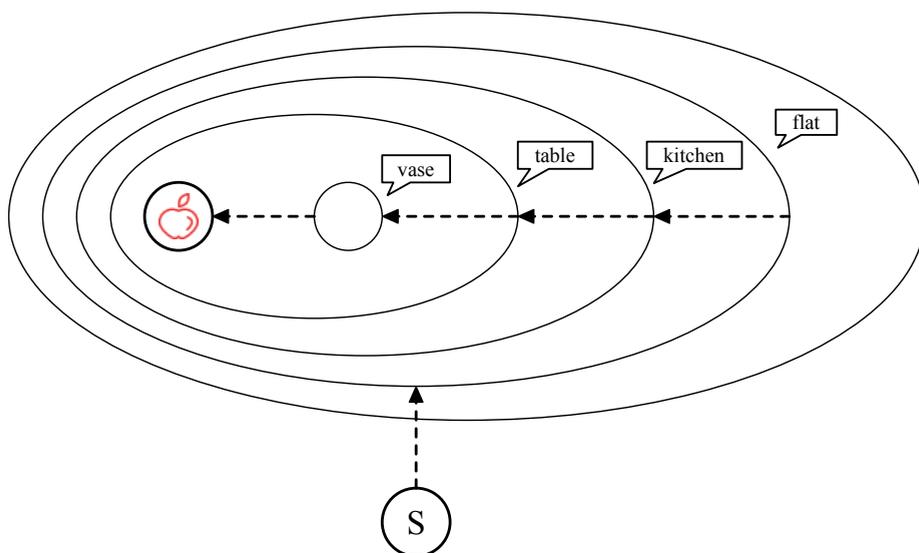
Figure 32: Reference-point configuration in (5)

Here, the first locative *in my flat* serves as the reference point for the target concept IN THE KITCHEN. Yet the path leading to the apple is not complete yet; in fact, this is just the beginning. Once we access the location IN THE KITCHEN, the locative now serves as the reference point for the target ON THE TABLE. ON THE TABLE, in turn, functions as the reference point for the target NEXT TO THE VASE, which, in turn, is the reference point for *Jack's apples*. To use an analogy from cinematography, we could say that the construal in (5) involves "zooming into" the apples via consecutive places mentioned in the sentence. Apart from the first locative, each place functions simultaneously as the target of the previous locative and the reference point for the following one. The final target is placed at the end of the path formed by consecutive pairs of reference points and targets.

This kind of nested configuration is not restricted to locatives alone. For example, it is also possible to form an expression with embedded possessives, like in (6).

(6) *Jack's mother's brother's daughter's apples.*

In general, the conceptual arrangement in (6) is very similar to the conceptual arrangement in (5) presented in Figure 32. The crucial difference is that the relationship that establishes the connection between the reference points and the targets is no longer spatial containment, but possession and the reference points are not locations, but possessors. Nonetheless, in both cases the respective referents are accessed via several steps and the consecutive targets function as reference points for the targets further "down the line."

Study questions

1. All of the following sentences contain metonymies. Can you find them and identify the reference-point concept and the target concept?
   a) *I can't talk right now, I'm behind the wheel.*
   b) *A roof over one's head is one of the most basic human needs.*
   c) *The Cold War was a time of increased political tension between Washington and Moscow.*
   d) *The coffee is two hours cold.*
   e) *Before the guests arrived, the dining room was a bit tumbleweedy.*
2. All of the following sentences contain active zone constructions. Can you find them and identify the reference-point concept and the target concept?
   a) *There's a yellow cat on the mat.*
   b) *There's a spider on me, get it off.*
   c) *I have a headache.*
   d) *I don't like Floyd.*
   e) *Jack winked.*
3. The following passage comes from Douglas Adams's novel *The Hitchhiker's Guide to the Galaxy*. The excerpt features a peculiar kind of nested "locatives" that focus on the path of motion, signaled by the preposition *through*. Draw a diagram similar to Figure 32 depicting the path of the sound from the passage.

   At that moment the dull sound of a rumbling crash from outside filtered through the low murmur of the pub, through the sound of the jukebox, through the sound of the man

next to Ford hiccupping over the whisky Ford had eventually bought him. (Adams 2002 [1979], 22)

References and further reading

- Adams, Douglas. 2002 [1979]. *The Hitchhiker's Guide the Galaxy*. New York: Del Rey Books.
- Giovanelli, Marcello, and Chloe Harrison. 2018. *Cognitive Grammar in Stylistics: A Practical Guide*. London: Bloomsbury Publishing.
  - Sections 4.4–4.5
- Langacker, Ronald W. 1993. "Reference-Point Constructions." *Cognitive Linguistics* 4: 1–38.

9. Grounding

In order to communicate effectively by means of language, it is not enough to know words and constructional schemas for putting them together into well-formed expressions. Consider the sentence-like combination of words in (1).

(1) *Floyd break glass.*

Undeniably, (1) is made up of English words arranged in accordance with the constructional schema of the English transitive sentence: NOUN PHRASE$_1$ + VERB + NOUN PHRASE$_2$. Nonetheless, it would be difficult to argue that (1) is a proper utterance in English. Apart from the fact that it is not a fully-fledged English sentence, (1) is also useless for everyday communication. This is because (1) does not specify how the event denoted by the "sentence" is related to the "here and now" of the speech event. When someone says (1), do they talk about something that happened in the past or in the future? Do they state a fact or speculate about a potential event that never happened? Do they inform us about an event, ask about whether Floyd broke the glass, or order Floyd to break the glass? Even though the sentence does convey some information, in its current form it is underspecified and open to so many different interpretations that it is hardly useful for effective communication. In more technical terms, we could say that (1) lacks grounding.

9.1. The ground

In Cognitive Grammar, **the ground** is an umbrella term for all details of the situation in which an expression is produced – details that are somehow relevant

for interpreting the expression. One important element is the speaker themselves and since utterances are typically addressed to someone, the hearer is also a part of the ground. Utterances are produced in specific locations in space and moments in time, so the time and place of the speech event is also included in the ground. Linguistic expressions may also refer to objects in the vicinity of the interlocutors and therefore the immediate surroundings should be included, too.

However, the ground is not limited to some spatiotemporal setting in which a speech event takes place, and more subtle aspects of the situation should also be taken into account. One of them is the **epistemic status** of the objects and events mentioned in the linguistic expression. The term *epistemic status* refers to how the events in question relate to the state of knowledge of the interlocutors. Does the speaker talk about the events as if they knew for a fact that they happened (e.g. *Floyd broke the glass*)? Or do they speculate about the past without stating anything as a fact (e.g. *Floyd may have broken the glass*)? Yet another aspect is the **pragmatic intention**, i.e. the effect that the speaker is trying to achieve by uttering an expression. Does the speaker inform the hearer about an event (e.g. *Floyd broke the glass*), request information from the hearer (e.g. *Did Floyd break the glass?*), or issue a command (e.g. *Floyd, break the glass!*)? A sentence that is both grammatically well-formed and useful for communication indicates, in one way or another, how the content of the expression relates to these aspects of the usage event.

In an important sense, grounding can be viewed as yet another type of reference--point arrangement, as discussed in more detail in Chapter 8. This time, the relevant reference point is an element of the ground, for example, the place and time of the speech event, and the target is the word or the content of the expression itself. As we will see in Section 9.3, the basic function of grounding is essentially the same as the basic function of reference-point configurations: to "pick out" an entity from a pool of eligible candidates. This is particularly apparent for nominal grounding (Section 9.4.1), but in a more abstract sense this also takes place for clausal grounding (Section 9.4.2), where processes are related to the "here and now" of the speech event.

9.2. Viewing arrangement

Before we move on to the details of grounding proper, it is necessary to discuss in greater detail one of the dimensions of construal mentioned briefly in Chapter 2. Strictly speaking, **viewing arrangement** is a part of the larger dimension, i.e. perspective. Perspective in general embraces all aspects of the relation between

the speaker and the content of the expression. Viewing arrangement in particular pertains to how much of the speaker's mental life finds its way to the expression. This can be understood in terms of Langacker's theater metaphor. In traditional theaters, the viewers sit in the audience and watch the play unfolding on the stage. They are not the part of the performance and they observe the stage more or less passively. The arrangement is different in some experimental theaters, where the separation between the stage and the audience is abolished and the viewers actively participate in the performance along with the actors. The viewers are themselves a part of the performance.

When it comes to construal, these two scenarios correspond to two different configurations of viewing arrangement. Here, the viewer in the audience is the speaker, or more generally the conceptualizer entertaining construal in their mind, and the play on the stage is the content of the construal. In the scenario corresponding to the traditional theater, the conceptualizer depicts an object or an event in their mind without "coloring" the conceptualization with aspects of their mental activity. Of course, construal is never entirely independent of the conceptualizer, because it does not exist outside the conceptualizing mind. Rather, the idea is that the conceptualizer's contribution to the construal is minimal. Within the theater metaphor we could say that the actions of the viewer do not have any effect on an actor's onstage performance. In language, this kind of viewing arrangement is exemplified by the standard construal, expressed by a "neutral" word like *cat*; the word is entirely descriptive and does not tell us anything about speaker's attitude towards the animal. In such cases, the content of conceptualization is construed with maximal **objectivity** and the conceptualizer with maximal **subjectivity**.

In the scenario corresponding the experimental theater, the distinction between the content of the construal and the conceptualizer is blurred so that some aspects of conceptualizer's mental life appear on the stage. Alternatively, we could say that the content of the construal is to some extent "colored" by the conceptualizer's opinions, evaluations, suggestions, etc. This is the case for the expression *adorable kitty*, which is not purely descriptive and tells us something about the speaker's attitude towards the animal. In such cases, the content of the conceptualization is construed with greater subjectivity and a relevant aspect of speaker's mental life (e.g. affection towards the referent) with greater objectivity. While the terms *objective* and *subjective* are used here with narrow technical meaning, there is some parallel with more casual senses of the words. One could say that *adorable kitty* is somewhat subjective because it betrays the speaker's subjective opinion about the feline and the speaker is somewhat objective, because some element is their mental life is in the onstage region and in the focus of attention.

9.3. Interlude: degrees of objectivity

Objectivity of the construal and subjectivity of the conceptualizer are a matter of degree. On the one hand, it is impossible to have a construal with full objectivity, because it would require total absence of the conceptualizer who entertains the conceptualization, so the construal would dissolve in thin air. On the other hand, it is impossible to have a fully subjective construal, since it would require the absence of the object. It is hard to imagine what such a hypothetical construal would be. Maybe the conceptualizer could make their process of thinking into the object of thinking. Ultimately, this would need to lead to a weird situation when the conceptualizer contemplates their own mental process of contemplating the contemplation as a contemplation of contemplation, and so on.

These extreme scenarios can be set aside though, and what remains is a spectrum of objectivity and subjectivity: things, processes, and relations can be construed more objectively, when the conceptualizer "contributes" little of their mental life to the construal, or more subjectively, when the conceptualizer's contribution is greater. Likewise, when the role of the conceptualizer is limited to fairly passive apprehension of things, processes, and relations, the conceptualizer is construed more subjectively. When the conceptualizer enters the onstage region and some parts of their mental life become apparent in the construal, the conceptualizer is construed more objectively. Yet it is worth bearing in mind that even when a regular linguistic construal displays a high degree of objectivity/subjectivity, it is always the case that some degree of subjectivity/objectivity is always there as well.

9.4. The ground in linguistic expressions

The notions of viewing arrangement and objectivity/subjectivity of construal make it possible for us to think about grounding in a new way. A real-life usage event always happens in a specific moment in time and place in space; it also involves specific people (usually the speaker and the hearer). As already stated, these elements constitute the ground. Yet the role of the ground in the construal varies from one linguistic expression to another. For instance, in (2a) the ground is not explicitly present; the sentence can be understood perfectly well without us knowing when and where it was produced, and who said it. The sentence in (2b) is a different story: in order to fully interpret it, we need to know the time of the speech event and we need to know which portion of the liquid referred to as *this water*.

(2) (a) *Water boils at 100 degrees Celsius.*
    (b) *This water is boiling right now.*

More technically, while the ground is always present during a real-life speech event, its particular elements are not always on stage in the main focus of attention, i.e. they are not always objectively construed. When some elements of the ground find their way into the onstage region and the speaker's focus of attention, they become more objectively construed. For example, in (2a) the time of the speech event is construed subjectively because it is not explicitly mentioned in the sentence and is not necessary for interpreting the expression. In (2b), however, the time of speech event is featured explicitly via the word *now*; therefore, it is construed more objectively. There are many ways in which the ground may encroach on the onstage region and "color" the construal behind linguistic expressions. In the remainder of this chapter we will focus on two types of grounding which have the most conspicuous grammatical consequences: nominal and clausal grounding.

9.4.1. Nominal grounding

As the name suggests, nominal grounding consists in grounding nominal phrases, referring to things. In order to communicate effectively, we need to signal which things in particular we are talking about. One of the reasons why (1), above, is hard to interpret is that it does not indicate in any way which glass was broken by Floyd. There are several ways of grounding nominal phrases. The most straightforward one is to resort to words that profile elements of the ground explicitly. In English these words are *here* (which profiles the place of speech), *now* (the time of speech), *I* (the speaker) and *you* (the hearer). Unfortunately, this simple strategy has limited scope of application; e.g. *here* refers only to the place of speech at the moment of speaking and if this were the only word available for denoting places, the communicative power of language would be very small indeed. In more formal terms, *here* places the place of speech event in the onstage region in the focus of attention, so that the place is construed objectively.

Other words do not profile elements of the ground, but evoke some parts of the ground in their meanings. For instance, *there* does not profile the place of speech, but its interpretation requires some knowledge about this place. In other words, to fully understand *there* used during an actual speech event, we need to consider the place of the speech event and consider a location away from this place. Therefore, a part of the ground – the place of speech – is an essential part of the meaning of the word. Note, however, that in this case the place of speech is not in the

onstage region (this region is occupied by the location "away" from the place) and is construed subjectively. The fact that the place of speech is construed subjectively is one of the differences between *here* and *there*, since in the former the construal of the "here"-place is more objective. The viewing arrangements behind *there* and *here* are sketched in Figure 33. The ellipses in the figure signal locations, those with "S" in the circle are the locations of the speaker during the speech event. "OR" marks the onstage region, i.e. the "stage" in Langacker's theater metaphor, with the conceptualized content apprehended by the conceptualizer. The broken-line arrow indicates the apprehension of the profiled location by the speaker.
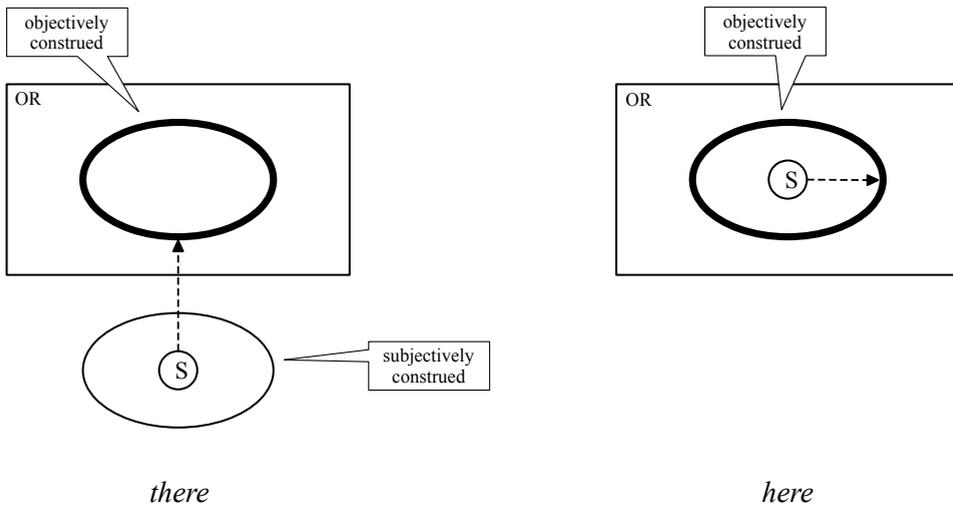
Figure 33: Viewing arrangements in *there* and *here*

Yet another strategy for grounding nominals can be found in the so-called **grounding elements**. In English, grounding elements for nominal phrases are demonstratives: *this*, *that*, *these*, and *those*. These kinds of words are used to create grounded composite expressions, like *this water* in (2b). Grounding elements construe the ground subjectively – the words do not explicitly denote any particular part of the ground. Yet, just like in the case of *there*, one needs to be able to relate the element to the ground to fully comprehend its meaning. Nonetheless, while *there* profiles a certain location specified relative to the ground, *this* does not profile any specific thing when it is used as a demonstrative. What, then, is the profile of the word? When the demonstrative stands in isolation, it profiles a highly schematic thing close to the place of speech event. Since words are typically used in larger composite expressions, the highly schematic thing is elaborated by a more specific noun. More technically, in *this water*, *water* elaborates the e-site (i.e. a schematic part of word's meaning, see

Section 6.1) of *this* and the entire composite expression profiles a grounded instance of water, i.e. an instance of water related to the ground by the demonstrative. This accords with a more intuitive understanding of the expression stating that it refers to some portion of water relatively close to the speaker. The general semantic structure of a nominal grounding element is sketched on the left-hand side of Figure 34 and the analysis of *this water* is presented on the right.
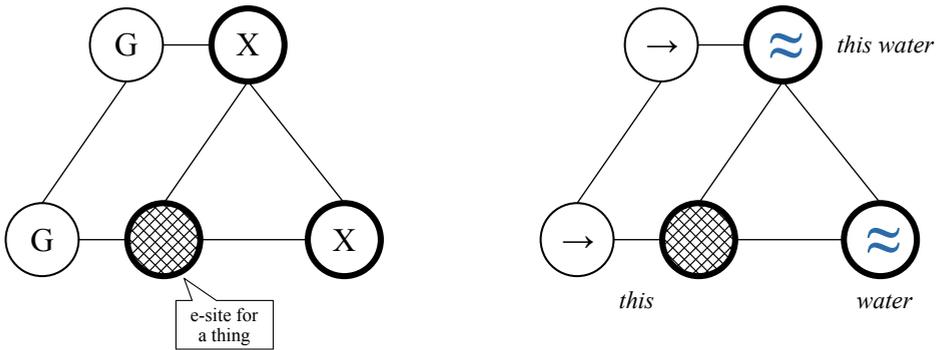
Figure 34: Nominal grounding element

At first glance, grounding elements function similarly to modifiers (see Section 6.2) in that they have e-sites elaborated by another element and the profile of the composite expression is the same as the profile of the element "filling in" the e-site. For this reason, *this water* is similar to *hot water* in that both of the expression specify the water in more detail. Note, however, that the composite expression's profile is also compatible with the profile of the grounding element. Thus, unlike in the case of typical modification, the profile of the modifier is not superseded on the higher level of linguistic organization. Curiously enough, one can also view the process as an instance of complementation of *this* by *water*, since in complementation the profile of the composite is inherited from the complemented element. In CG terms, the question of whether grounding via grounding elements is more like modification or complementation is largely moot, since the process of putting together the words into a composite expression has the properties of both types of grammatical relation, we may simply conclude that both analyses are equally valid.[10]

Table 4 summarizes the differences between *here*, *there*, and *this* with respect to the construal of the ground and the specificity of the referent.

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[10] This can be viewed as yet another incarnation of construal, i.e. alternate ways of thinking about one situation, all of which are perfectly valid. See Langacker (2017) for further discussion.

Table 4: Comparison of *here*, *there*, and *this*

	here	*there*	*this*
The ground is construed...	objectively	subjectively	subjectively
Specificity of referent	specific	specific	schematic

9.4.2. Clausal grounding

While nominal grounding consists of relating the things mentioned in an expression to the circumstances of the speech event, clausal grounding is all about relating processes. In this case, we are less interested in location in space, and instead we intend to locate processes in time, determine their epistemic status, and relate them to the intentions of the speaker. The first aspect is perhaps the most straightforward: when we talk about actions and events we need to indicate whether they are unfolding during the speech event or whether they happened in the past or the future. Thus, the grammatical tense is essentially a grounding device indicating the relation of the process to the time of speech. Let us consider the English past tense suffix *-ed*, as used in the sentence *John boiled water*. Just like *this*, *-ed* has an elaboration site to be "filled in" by another element from a composite expression. Since the suffix is a clausal grounding element, the e-site is now compatible with a process. Other than that, the clausal grounding element is very similar to its nominal counterpart: the meaning of the suffix involves some sort of relation to the ground (to be precise, the indication that the process took place before the time of speech) and the composite structure inherits the profile of the grounded process. Let us make the analysis more explicit. The phrase *boil water* profiles an ungrounded process. When the process serves to elaborate the e-site of *-ed*, the phrase *boiled water* is formed, which profiles the process of boiling water related to the time of the speech event: the boiling took place before the speech event. This configuration is sketched on the right-hand part of Figure 35 and the left-hand features the general structure of a clausal grounding element. Note the fact that the relationship among various elements of the diagram are virtually the same as those in Figure 34.

Clausal grounding also involves signaling the epistemic status of a process, which pertains to the knowledge of the speaker about the event denoted by the phrase. The sentences in (3) differ with respect to how much certainty the speaker has about John boiling the water: (3a) states the fact without suggesting anything about speaker's degree of certainty, (3b) emphasizes that the speaker is certain about the event, and (3c) signals a lack of certainty. (3b) and (3c) feature epistemic modal verbs *must* and *may*, which along with *can* and their variants *might* and *could*, ground the process with respect to speaker's state of knowledge about the world.
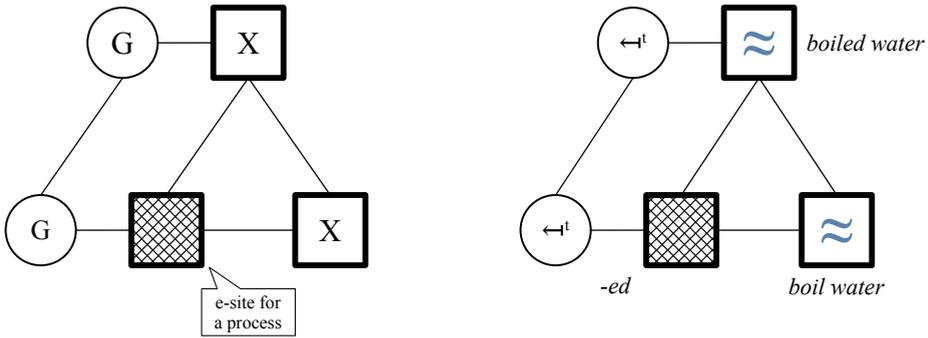
Figure 35: Clausal grounding element

(3) (a) *John boiled the water.*
　　(b) *John must have boiled the water.*
　　(c) *John may have boiled the water.*

Yet another aspect of grounding is the relationship to the speaker's communicative intentions. The basic contrast between various intentions is illustrated by the sentences in (4). If the sentences are considered in isolation from a broader context, in (4a) the speaker's sole intention is to state a past event, in (4b) they request information about the past event, and in (4c) they issue an order or a request. The sentences differ in the so-called grammatical mood, whose key function according to CG is to ground the process in question with respect to the speaker's communicative intentions.

(4) (a) *John boiled the water.*
　　(b) *Did John boil the water?*
　　(c) *John, boil the water!*

To summarize, grounding consists of relating the content of an expression to the "here and now" of the speech event by means of various lexical and grammatical devices. A fully grounded expression allows us to identify the referents of the nouns used in the expression and gives us an idea about when the events described in the expression took place, the degree of speaker's certainty about the events, and the speaker's communicative intention vis-à-vis the hearer.

Study questions

1. Take a look around you and name several people and/or objects that are a part of the ground for the linguistic expressions that you could say right now?
2. Which elements of the ground are evoked in the following words and expressions?
    a) *It's several kilometers away.*   f) *disgusting*
    b) *up in the sky*   g) *perhaps*
    c) *communist vs. commie*   h) *Eat a banana!*
    d) *indisputably*   i) *Fucking shoes!*
    e) *innumerable*   j) *Ouch!*
3. The exact meaning of an expression produced in real-life circumstances depends heavily on the details of the ground. Take a look at the sentences below. Can you think about several different interpretations of the sentences depending on the factors like the intention of the speaker, the conditions under which the sentences are produced, etc.?
    a) *It's cold in here.*
    b) *I like your new haircut.*
    c) *Put your hands up in the air!*

References and further reading

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    ◦   Chapter 6
*   Langacker, Ronald W. 2008. *Cognitive Grammar. A Basic Introduction*. New York: Oxford University Press.
    ◦   Section 3.4, Chapter 9
*   Langacker, Ronald W. 2013. *Essentials of Cognitive Grammar*. Oxford–New York: Oxford University Press.
    ◦   Section 3.4
*   Langacker, Ronald W. 2017. "The Function of Trees." In *Route 66: From Deep Structures to Surface Meanings: A Festschrift for Henryk Kardela on His 66th Birthday*, 73–91. Lublin: Wydawnictwo Uniwersytetu Marii Curie-Skłodowskiej.
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    ◦   Chapters 5, 9, and 10
*   Taylor, John R. 2002. *Cognitive Grammar*. Oxford: Oxford University Press.
    ◦   Sections 18.2 and 20.4

10. Quantification

In linguistics, the term *quantification* covers a wide array of lexical and grammatical means of specifying the amount of something. In the case of plural masses (see Section 4.1), the most straightforward way of doing this is to count the items in the mass and to use a words like *one*, *two*, *three*, etc. Notice, however, that this strategy has serious limitations. Sometimes there are so many elements in the plural mass that it is impracticable to count them, yet we may still wish to indicate an approximate amount somehow. Sometimes a rough estimate may be more useful than the exact number. In the case of non-plural masses, which do not consist of clearly delineated elements, the amount cannot be specified by simple counting of the components. For these and other reasons, quantification involves many diverse strategies suitable for different situations. This chapter presents an overview of several main strategies used in English.

10.1. Absolute quantifiers

Absolute quantifiers are perhaps the most obvious linguistic devices for specifying quantities. The term may be somewhat misleading, since quantifiers of this type do not specify the amount in some kind of "absolute" fashion, irrespective of anything else. On the contrary, they relate plural and non-plural masses to some sort of scale. The most straightforward examples are **cardinal numerals** like *one*, *two*, *three*, etc., which relate a plural mass to a counting scale. The simplest counting scale is just the sequence of natural numbers from 0 to infinity. Thus, the cardinal numeral *three* in *three cats* relates the plural mass of animals profiled by *cats* to the region of the counting scale corresponding to the number 3, as sketched in Figure 36.
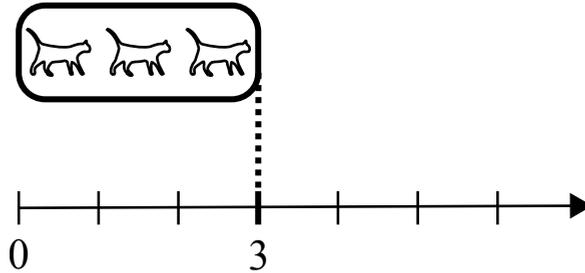
Figure 36: Construal in *three cats*

A similar construal underlies the adjective *several*. The word also relates a plural mass of things to a region on a counting scale. The key difference between the adjective and cardinal numerals is that in the former, the number of elements in the mass is less specific, so the word relates the mass to a larger region on the scale and not to one specific point corresponding to an exact number. The construal behind the expression *several cats* is sketched in Figure 37.[11] Similarities in construal between *three* and *several* suggest that the two words belong to the same grammatical class, i.e. both are adjectives. In fact, all cardinal numerals have the adjectival function by CG's lights, since they profile atemporal relationships between nominal trajectors (plural masses) and regions on counting scales.
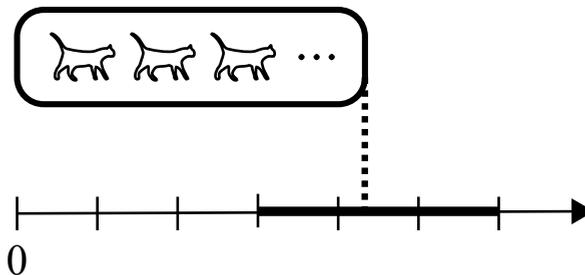
Figure 37: Construal in several *cats*

Other instances of absolute quantifiers are *much*, *many*, *little*, and *few*. These are also adjectival in nature, since they relate a mass to a quantity scale. The

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[11]   The fact that the bold line marking the region on the counting scale extends from the number 3 to 6 does not mean that the exact meaning of several is BETWEEN 3 AND 6. The visual representation may be misleading, but Figure 37 is meant to indicate that the meaning covers a somewhat indeterminate range of numbers with 3 and 6 falling within this range. The three horizontal dots next to the image of cats indicate that there are more elements in the plural mass than shown explicitly in the figure.

quantifiers differ from *several* and cardinal numerals in that their quantity scale does not start from 0, but is organized around a certain standard or expected amount (see Figure 37). Thus, *much* and *many* indicate that the profiled mass is greater than normally expected and *little* and *few* that the mass is smaller than normally expected. In more technical terms, the former pair involves positive scanning along the scale (i.e. "forwards" on the quantity scale) and the latter pair involves negative scanning (i.e. "backwards" on the quantity scale). In Figure 38 the scanning is marked with dotted arrows and the norm with "n." Furthermore, *many* and *few* involve quantized scale, i.e. scales divided into discrete regions or "units of measurement," marked in Figure 38 with short vertical bars on the quantity scale. This is why the quantifiers are compatible with plural masses made up of multiple things with clearly delineated boundaries, e.g. {*many*/**much*} *cats*. *Much* and *little* involve unquantized scales, which are not divided into discrete units and feature one continuous region.[12] Therefore, the words are used for non-plural masses, e.g. {*much*/**many*} *water*.
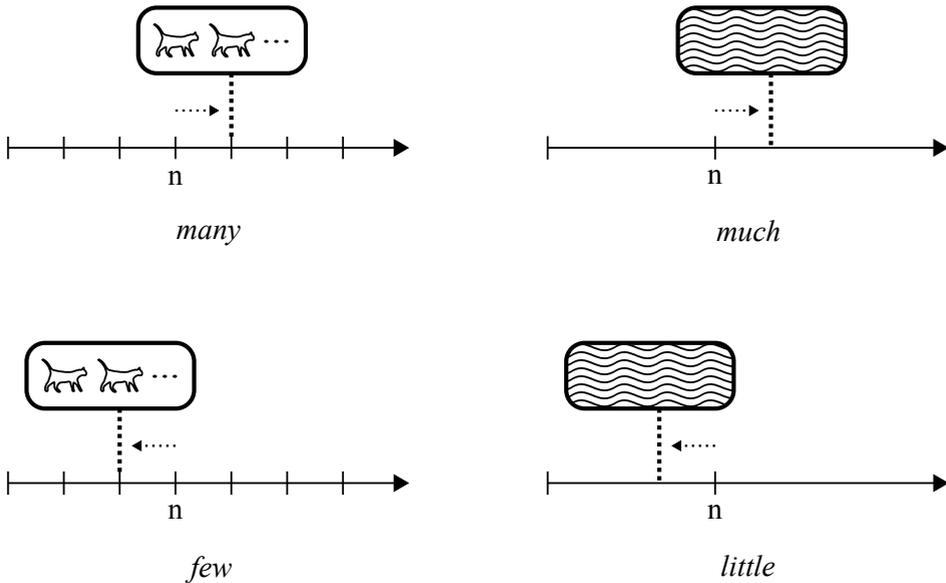
Figure 38: Construals in *many*, *much*, *few*, and *little*

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[12]   To keep the analysis simple, we will not discuss quantifiers a few and a little, since their analysis is more complex. Essentially, the two quantifiers appear to be nominal rather than adjectival and they involve positive scanning from the origin (rather than the expected norm) of the scale.

10.2. Relative quantifiers

Relative quantifiers specify the amount of things with respect to some reference mass of things in question. Quantifiers of this sort include *all*, *most*, *some*, *no*, *each*, *every*, and *any*. In one way or another, all relative quantifiers specify some portion of the reference mass:

- *All* profiles the entire reference mass.
- *Most* profiles a significant portion of the reference mass.
- *Some* profiles an unspecified portion of the reference mass (greater than zero, but smaller than the entire reference quantity).
- *No* does not profile any portion of the reference mass. Notice, however, that in order to interpret the quantifier, we still need to evoke the reference mass as the base. For instance, the construal behind *No cat (should drink milk)* evokes a plural reference mass of cats in order to say that no element of this mass is profiled in the expression.
- *Each*, *every*, and *any* profile a representative element of the reference mass (differences between the three words will be discussed below).

When no extra context is provided, the reference mass is a **maximal extension** embracing all things evoked in the expressions. A maximal extension is a mental construct rather than a collection of actual objects that can be found in the real world. It would be impossible to collect and put in one place the cats profiled in (1a). The sentence makes a generalization not only about all cats that actually live in the world at the moment of speaking (in principle, you could collect them all if you looked long enough), but also about cats from the past, the future, fictional felines from books, and all hypothetical creatures that we would recognize as cats. Thus, the maximal extension in (1a) is therefore a **virtual** entity, i.e. a "useful fiction" conjured up by the speaker to say something about the particular type of animal, rather than a collection of real-life creatures.[13] In (1b), however, the reference mass is restricted to a small group of cats that the vet in question vaccinated the previous day. Here, these felines are not virtual; they are actual and it would be possible to find all of them in the real world. In such cases, the reference mass is a **contextually relevant extension**. These are not necessary actual real-world collections of things; they may also be "useful fictions" constructed in the mind of the speaker for a particular occasion. For instance, the relevant extension in (1c) may include cats the speaker is merely planning to have – these cats may not have been born yet. Moreover, if the speaker fails to own any cat in the future, no actual cat will ever be a part of this contextually relevant extension of (1c).

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[13]   For a more detailed discussion on virtuality, see Chapter 12.

(1) (a) ***All cats*** *benefit from vaccination.*
　 (b) ***All cats*** *that the vet vaccinated yesterday were female.*
　 (c) *I will vaccinate **all cats** I will ever own.*

Since relative quantifiers do not relate plural and non-plural masses to some sort of quantity scale, they are not adjectives. Instead, relative quantifiers relate things to some sort of reference masses recognizable to the speaker and the hearer. Surprising as it may seem at first glance, quantifiers of this type function as **grounding elements** (see Section 9.4.1). Just like other grounding elements, e.g. demonstratives, they are used by speakers to "pick out" certain portions of things from all eligible candidates. While demonstratives achieve this by relating things to the place of the speech event, relative quantifiers do this by specifying portions of greater reference masses. The conclusion that relative quantifiers are in fact grounding elements is corroborated by the fact that they cannot appear together with other grounding elements: {*These all/*Those most/*Those some} *cats benefit from vaccination*. A combination of a demonstrative and a relative quantifier is ungrammatical, because these elements specify the relation of the referent to the ground in different incompatible ways.

All, *most*, *some*, and *no* can be termed **proportional quantifiers**, since they specify a thing in terms of proportions to a reference mass. *Every*, *each*, and *any*, on the other hand, are **representative instance quantifiers** in that they "pick out" the portion of a reference mass and depict it as a representative member of the mass. In (2) all of the three quantifiers single out one cat from a larger group and make a statement about the representative that is valid for all members of the group.

(2) (a) {*Every/each/any*} *cat needs to be vaccinated to be healthy.*
　 (b) *The vet vaccinated* {ʔ*every/each/**any} *cat one by one.*
　 (c) {**Every/***each/any*} *milk is unhealthy for cats.*
　 (d) *Peter doesn't like* {**every/***each/any*} *cat.*

The difference in meaning between *every*, *each*, and *any* in (2a) is slight, but the construal behind the quantifiers is not identical. In the case of *every*, the construal involves a **summary scanning** of the plural mass; for example, while thinking about the reference group of cats in (2a), we conceptualize the entire collection of animals at once, in a single "glance." We then "pick out" one element of the group in order to say something general about it and consequently about all other members of the group. For example, in *Every cat needs to be vaccinated to be healthy*, *every cat* profiles a single animal from the group of all cats apprehended "all at once" in order to say that this representative needs to be vaccinated. In the case of *each*, the construal involves **sequential scanning**; that is to say, we shift our "mental gaze"

from one member of the group to another in a sequence until we have covered all cats in question. This construal promotes greater individuation of members, since at every stage of scanning only one member is in the focus of attention (cf. also Section 5.2.2). Finally, in the case of *any*, one random element of the group is singled out and other elements are backgrounded. Also, *any* is not restricted to count nouns, i.e. it does not have to profile a well delineated thing from a plural mass. This quantifier can also profile a sample portion of a non-plural mass like in (2c). Notice, that the best choice in (2b) is *each*, since sequential scanning nicely dovetails with the notion of vaccinating animals in a sequence signaled by *one by one*. *Any,* in turn, is ungrammatical, since it evokes only one representative, which is incompatible with the sequence of vaccination signaled by *one by one*. Moreover, *any* is more readily associated with negative context and therefore sounds more natural in negative sentences (see (2d)).

10.3. Quantifying expressions

Away from one-word quantifiers discussed in the previous sections, there are also many more descriptive expressions specifying quantities of things in one way or another. Here, we will focus on the construction *X of Y*. The expressions of this sort form an open-ended group: some of them are fixed phrases (*a lot of*, *whole lot of*), while others are coined creatively when necessary in a given context. The first noun of the expression functions as a sort of "unit of measurement" for the second noun. The first noun frequently profiles:

- a container: *bottle of milk*, *jar of marmalade*, *can of oil*
- a "standard" unit of measurement: *liter of gasoline*, *kilogram of flour*, *meter of copper wire*
- a "provisional" unit of measurement: *spoonful of sugar*, *bucketful of ice*, *handful of sand*
- a group of animals: *herd of cattle*, *pack of wolves*, *swarm of bees*
- a portion of a substance: *slice of bacon*, *lump of wax*, *puff of smoke*

  Typically, the first noun in the construction functions as the grammatical head, as the profile of the entire expression is the same as the profile of the noun: the referent of *a bottle of milk* is a kind of bottle, the referent of *a lump of wax* is a kind of lump, etc. The *of Y* phrase features an e-site elaborated by the first element of the quantifying expression. For example, the meaning of the phrase *of milk* implies some sort of thing linked to the milk by whatever relation the word *of* evokes, like the relation of containment in *a bottle of milk*. Thus, since the whole composite expression inherits the profile of the word elaborating the e-site of a relational

expression, the construction is an instance of modification (see Section 6.2). Nonetheless, the construals behind expressions of this sort are quite flexible and their meanings may be easily modified depending on the context. Consider the sentences in (3).

(3) (a) *Jill broke a **bottle** of milk.*
　　(b) *Jill drank a bottle of **milk**.*

　　The two variants of the quantifying expression are sketched in Figure 39. In (3a), *bottle of milk* clearly refers to the container, since it is the container (and not the milk) that can be broken. However, in (3b) the expression focuses on the content of the bottle, since it is the milk (and not the bottle) that can be drunk. Thus, it appears that in (3b) the profile of the entire expression is inherited from the second noun and consequently it is *milk* that functions as the head (indicated by the bold font). Surprising as it may seem, here the grammatical relation is also modification, since in (3b) the profile of the entire phrase is inherited from the element elaborating the e-site in *of*.[14] The conclusion that in (3b) *bottle of* modifies *milk* may appear somewhat counterintuitive, but bear in mind that in Cognitive Grammar grammatical relations are determined largely by which profile is inherited by the composite phrase. In both (3a) and (3b), the profile is inherited from the element elaborating one of the e-sites in *of*, meaning both of the expressions count as modification. The conclusion may become less surprising when we realize that *bottle of* in (3b) specifies the amount of milk is similar to expressions like *much* in *much milk*. In the latter, the quantifier is more clearly an adjective and therefore it is a more typical modifier of the noun. Of course, there are important differences in meaning between *bottle of* and *much*, but their grammatical function is similar: both specify an amount of the liquid and *milk* is the head of the composite expressions in which they appear. Therefore, both of the expressions display a pattern of profile inheritance typical of modification.

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[14]　This analysis is somewhat simplified and the compositional paths of the two expressions are somewhat more complex because the relations between *of* and the nouns *bottle* and *milk* also need to be taken into consideration. The relationship between *of* and *milk* is one of complementation, since *of milk* inherits the profile from *of*, i.e. from the word whose e-site is elaborated. By the same token, we may also consider the grammatical relationship between *bottle* and *of* as a relationship of modification since *bottle of* inherits the profile of *bottle*, i.e. the word elaborating the e-site in *of*.
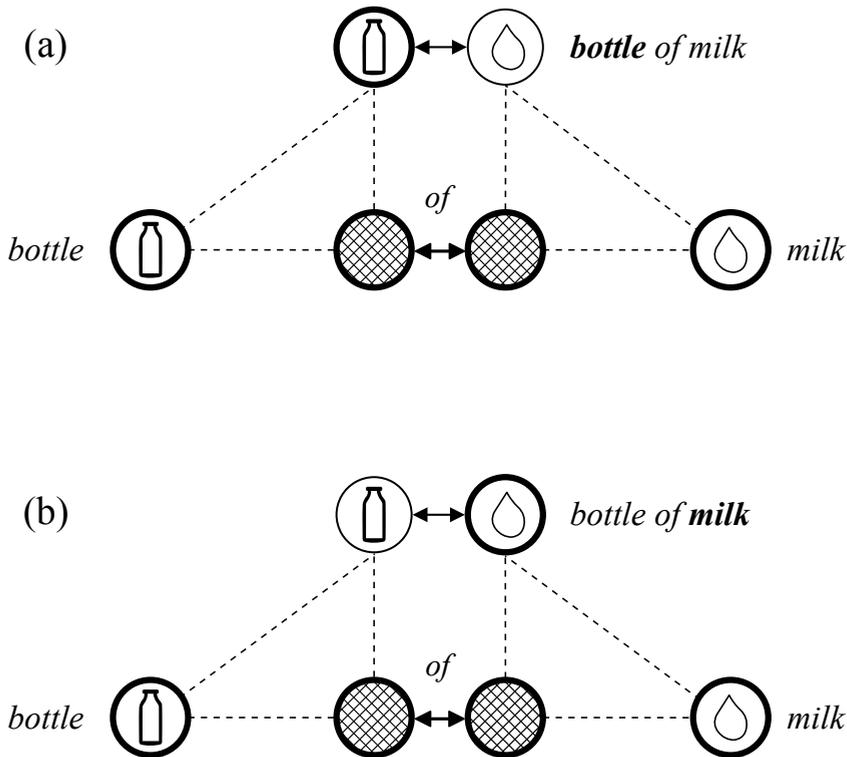
Figure 39: Alternate construals in (3a) and (3b)

Quantifying expressions differ with respect to the degree of entrenchment (see Section 7.2), i.e. the degree to which they function as fixed expressions, easily remembered and readily used by speakers. *A lot of* is entrenched to a very high degree – it is a regular fixed expression and has found its way to dictionaries of English. This is not so with ???*a gumbootful of*. A competent speaker of English will probably guess that the expression has something to do with AN AMOUNT THAT A GUMBOOT WILL HOLD, but it is not entrenched and readily used, so is highly unlikely to enter English dictionaries any time soon. At some point in history, the expression *a lot of* was much less entrenched and had more specific meaning roughly equivalent to A PORTION OF or A SHARE OF. Over time, the semantics of the expression evolved in such a way that parts of the original meanings faded away and *a lot of* became a general quantifier that can be used in new ways. This historical change involves the so-called subjectification, which is discussed in more detail in the next chapter.

Study questions

1. Imagine that your task is to invent a fictional language and you need to invent a few relative quantifiers. Can you provide the phonological forms for the quantifiers and explain how their profile relate to the reference mass?
2. Can you think of five other quantifying expressions not mentioned in the chapter?
3. The expressions **twelve** *bottles* and *a* **dozen** *bottles* refer to the same quantity of things, but they construe the referents differently. What is the difference between the two construals?

References and further reading

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    - Chapters 6 and 7
- Taylor, John R. 2002. *Cognitive Grammar*. Oxford: Oxford University Press.
    - Section 18.3.2

11. Subjectification

The distinction between objective and subjective construal introduced in Chapter 9 is useful not only in the CG description of grounding. Section 9.4 mentions briefly various ways in which the speaker "colors" the meanings of words and expressions with some aspects of their mental life. In more technical terms, this phenomenon can be described as some elements of conceptualization becoming more objectively construed and entering the onstage region and the entire construal becomes more subjective (in that it features more explicitly the conceptualizer's mental life). However, it is also possible to have a reverse process in which some elements of objectively construed meaning gradually leave the onstage region and "migrate" into the subjective understanding in the mind of the speaker. Since the speaker is a part of the ground, we may also describe it as "a process whereby some feature of a designated situation gradually drifts from the profile and comes to occupy the ground," to quote the apt definition by John Taylor (2002, 408). In Cognitive Grammar, the technical term for the process is **subjectification**. In this chapter we will take a closer look at two case studies demonstrating how subjectification can lead to a change in meaning of words and expressions.

11.1. Case study: *to run*

We have already encountered an instance of subjectification in Section 5.2.1, while discussing virtual motion in the sentence *The road runs from the city to the forest.* Let us recapitulate. Strictly speaking, the road depicted in this sentence does not move between the city and the forest, contrary to what the verb *to run* suggests. The use of the verb denoting motion to describe a spatial expanse was explained by sequential scanning along the road performed by the conceptualizer in their mind

rather than actual motion of the road in physical space. This analysis remains valid, but now we will focus on the gradual semantic change in the verb *to run* rather than the details of the entire construal.

Let us tentatively characterize the basic meaning of the verb as:

(i) A PROCESS OF SWIFT MOTION OF A CREATURE WITH LEGS THROUGH PHYSICAL SPACE

While perhaps not entirely accurate and oblivious of many semantic nuances, this working definition probably approximates what typical users of English think about when they hear the word without a larger context. This is also the meaning of the verb in (1a). Here, Janice is depicted as running on foot, possibly as a part of her weekly fitness routine, between two locations in a physical space. This meaning is thus fully compatible with the tentative definition in (i).

(1) (a) *Janice **runs** from the city to a nearby village every Sunday morning.*
    (b) *The train **runs** from the city to a nearby village every day at 10 o'clock.*
    (c) *The road **runs** from the city to a nearby village.*

Notice, however, that the meaning of *to run* in (1b) is somewhat different. Here, the speaker still talks about a motion of a physical object between locations in a physical space, but the trajector of the process (the train) is not a living creature with legs, but a vehicle with wheels. Let us characterize this semantic variant as:

(ii) A PROCESS OF SWIFT MOTION OF A PHYSICAL OBJECT THROUGH PHYSICAL SPACE

This semantic variant (ii) is still very close to (i) and competent speakers of English are unlikely to notice anything strange in the meaning of *to run* in (1b). Nonetheless, one element, i.e. the concept A CREATURE WITH LEGS, "fades away" from the definition and is replaced by a more schematic concept A PHYSICAL OBJECT. The process of gradual "fading away" of an element of meaning during subjectification, sometimes to the point that the element disappears altogether, is termed **attenuation**.

A more dramatic change can be found in (1c). Firstly, in (i) and (ii) the trajector of the motion were objects moving along some path between the city and the village; now that trajector is the road itself. Secondly, and more importantly, the notion of motion between the two locations underwent attenuation, although not to the point of complete disappearance. If the concept of movement between the

city and the village were entirely absent from the construal, it would be difficult to explain why the verb denoting motion was used in (1c) in the first place. However, the motion involved in the construal is not an objective motion of a physical entity, but a subjective impression of motion when the conceptualizer sequentially scans the road between the city and the village. This semantic variant can be characterized as:

(iii) A STATE OF BEING EXTENDED BETWEEN TWO LOCATIONS IN PHYSICAL SPACE

In other words, in (1a) and (1b) the motion is construed objectively, since a moving thing is a part of the scene depicted in the onstage region; in (1c) the motion is construed more subjectively, since there is no moving entity in the onstage region and the motion happens entirely in the offstage region in the mind of the conceptualizer. This shift from the objective to the subjective plane of construal is the process of subjectification. The change is sketched in Figure 40. The left-hand part depicts the objectively construed motion of the trajector ("tr") in (1a) and (1b), while the right-hand part depicts the subjectively construed virtual motion in (1c). In the right-hand part, no object is actually moving along the path between the two locations, so the virtual motion arises from the sequential scanning along the path indicated by the horizontal dotted-line arrow. "S" denotes the speaker and the vertical broken-line arrow stands for the relationship of apprehending the motion and the path between the city and the village. The horizontal arrow marked with "T" signals the flow of time and emphasizes that the profile is temporal, i.e. the relation is construed as developing through time.
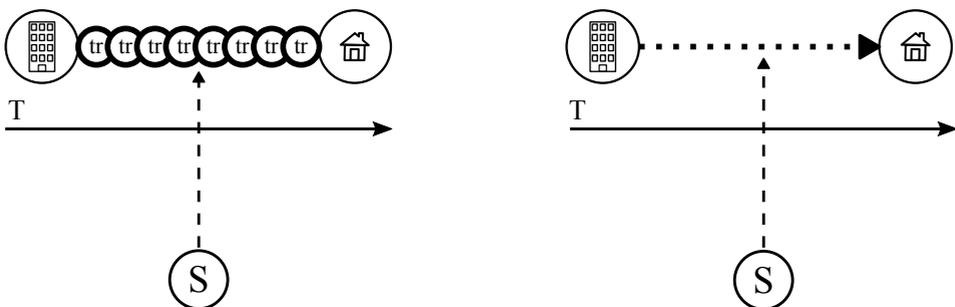
Figure 40: Subjectification in (1)

Further attenuation of other elements of meaning may lead to other semantic variants of the verb. Consider, for example, more non-literal uses of *to run* in (2).

(2) (a) *Peter's nose **is running**.*
    (b) *Jack **ran** out of apples.*
    (c) *Floyd **runs** the risk of breaking the glass.*

Here, the very notion of physical space fades from the semantic characterization and the verbs cannot be interpreted as depicting actual movement between physical locations. Instead, the senses rely on metaphorical understanding from which various elements of the meanings in (i) and (ii) are attenuated and replaced by other elements. However, detailed analyses of these sentences are beyond the scope of this chapter.

11.2. Case study: grammaticalization of *to be going to*

Subjectification is also an important part of the so-called **grammaticalization**. Grammaticalization is the process in which a word or a small phrase loses its original lexical meaning and attains a more "grammatical" meaning. In practice, the difference between a "lexical" and a "grammatical" meaning cannot be drawn sharply with absolute precision, but as a rule of thumb we may accept that lexical meanings have more to do with the definitions of words found in dictionaries, while grammatical meanings have more to do with various grammatical functions, like signaling tense (past vs. present). Grammaticalization does not necessarily mean that the original word has lost all of its "lexical" meaning or that the "grammatical" meaning is entirely divorced from the original sense of the word. Rather, grammaticalization happens when the change in meaning becomes so dramatic that the word acquires new grammatical functions. A case in point is the quantifying expression *a lot of* mentioned in the previous chapter, in which the attenuation of the original meaning (A PORTION OF or A SHARE OF) went so far that the expression started functioning as a generic quantifier usable in entirely new contexts.

In this section, we will take a closer look at an even more dramatic case of grammaticalization that affected the construction *to be going to*. Throughout history, the "grammatical" meaning denoting future plans evolved from the "lexical" meaning denoting movement through a physical space. The baseline lexical meaning of *to go* can be roughly characterized as:

(iv) A PROCESS OF MOVING FROM ONE LOCATION TO ANOTHER LOCATION IN PHYSICAL SPACE

This meaning is at play in (3a), which depicts Janice moving to a physical location in physical space. We know from our everyday experience that going to a particular place often happens for a reason: we go to a greengrocery to do shopping, we go to a doctor to seek medical advice, we go to the cinema to see a film, etc. This purposefulness is illustrated by (3b), where movement to a physical location is still in the foreground, but the purpose of Janice's action is signaled explicitly by *to run*.

(3) (a) *Janice **is going** to a nearby village.*
    (b) *Janice **is going** to a nearby village to run.*
    (c) *Janice **is going** to run in a nearby village.*
    (d) *Janice **is going** to run.*
    (e) *Janice **is gonna** run.*

The close association between going to a certain location and performing a certain action upon arriving prompts a gradual shift in meaning noticeable in (3c). Here, the purpose of the action is foregrounded to a greater extent. On the formal level, the shift signaled by the fact that *to run* stands closer to *be going to* than in (3b), where the phrase denoting purpose is placed at the very end of the sentence. This ordering of words suggests that the action of running is now more closely related to *be going to* than in the previous sentence. On the conceptual level, the movement aspect inherent in the baseline meaning of *to go* becomes more subjectively construed: it is less prominent in the onstage region, where the purpose of the action starts to receive more attention. Arguably, the notion of physical movement is not entirely absent from the construal, but it is now somewhat attenuated. (3c) is still slightly ambiguous in that it can be interpreted as synonymous with (3b), especially with the right context in place. This indicates that the original meaning of *to go* has not faded away completely and can be activated relatively easily.

Finally, the standard interpretation of (3d) is that the sentence is about Janice's intended action rather than actual motion. Note, for example, that the sentence makes sense even when the speaker talks about Janice sitting motionless in an armchair thinking about her plans for the evening. Here, the notion of physical space is attenuated to a very high degree, which is also signaled by the fact that no physical location is mentioned in the sentence. The final stage is (3e), which cannot be standardly interpreted as denoting any physical motion. Here, the process of attenuation is complete and the conception of movement through physical space fades away entirely. This is signaled by the formal degradation of *going to*, which is the key element evoking motion in (3a), into unaccented *gonna*, interpreted at this point as the marker of future plans and intentions. Notice, however, that the formal degradation of the verb started even earlier. While *to go* with the regular lexical

meaning can be used in the simple aspect (e.g. *Janice goes to a nearby village every Sunday*) and can be combined with modal verbs (e.g. *Janice will go to a nearby village tomorrow*), the more grammaticalized meaning in (3d) can only be used in the progressive aspect (**Janice goes to run*) and cannot be combined with modals (**Janice will be going to run tomorrow*).

While this brief discussion omits some details and nuances of the historical development of the construction,[15] the emergence of the variant of *to be going to* consists essentially in the gradual attenuation of the physical movement and the foregrounding of the purposefulness of the action. Since the semantic variant in (3a) is more "lexical," i.e. closer to a dictionary meaning of *to go*, and the variant in (3d) is more "grammatical," because it has more to do with signaling the futurity of the process, the change in meaning counts as an instance of grammaticalization. The loss of some formal properties of grammaticalized constructions, like the contraction of *going to* into *gonna* (3e) and restrictions with respect to grammatical aspect and modal verbs, is another sign of a dramatic shift from a more lexical to a more grammatical meaning.

Study questions

1. The so-called causative *have* construction in English, like in *I had my hair cut*, emerged in the process of subjectification from the original meaning of *to have*, denoting possession. Make up a sequence of sentences illustrating a growing degree of subjectification similar to the one illustrating the development of *to be going to* construction in Section 11.2.

2. Mava Jo Powell (1992) demonstrates that many of the so-called stance adverbs, signaling the speaker's attitude towards what is said, have undergone subjectification. Explain how the meanings of the adverbs below changed over time.
    a) *I like virtually all cats.*
    b) *Actually, I don't like coffee.*
    c) *My head literally exploded when I learned about this.*
    d) *I really think this is not a good idea.*

3. In this chapter we have seen how the meanings of *to run* and *to go* change in the course of gradual attenuation of various semantic elements. Can you offer a similar analysis for the verb *to take* in the sentences a)–d) below?
    a) *Take this knife!*
    b) *Take a shower!*

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15   For a more detailed discussion, see Traugott (1995).

c) *Take me home!*
d) *Take it easy!*

References and further reading

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12. Virtuality

We all know that language can be used to create stories about unreal characters set in unreal worlds. The prime example of this is of course literature, especially science fiction, fantasy, and other genres of speculative fiction. However, we also refer to fictional objects and events in more down-to-earth everyday situations. Surprisingly enough, we may do this in order to talk about the real world around us. We have already seen this in the conceptual phenomenon of virtual motion (see Section 5.2.1), where the concept of movement was evoked in order to describe a static object (a road) and a configuration of objects (houses in a valley). Another example was the maximal extension serving as the reference mass to specify the meaning of relative quantifiers (see Section 10.2). In this chapter we will take a closer look at other instances of virtual entities and their role in grammar.

12.1. Virtuality, actuality, reality

Before we proceed, it is important to clarify a couple of key theoretical distinctions. In philosophy and everyday language, the terms *virtuality*, *actuality*, and *reality* have several different, usually rather vague and sometimes straightforwardly conflicting, meanings. In Langackerian Cognitive Grammar the terms are used in narrower technical senses. **Real** entities and events are specific entities and events present in the world of the speaker or in this world's history. Thus, the sentences (1a) and (2a) refer to reality, because they describe a present state of affairs in the speaker's world and a historical event in this world, respectively. The notion of **actuality** is broader than reality: it embraces states of affairs and events whose reality is somehow "at issue," i.e. we are interested whether they were real, are real, or will be real in the future. Thus, (1b) describes a situation that was possible, but not real in the world.

In other words, the sentence describes actuality, because it describes a situation that could have happened in the world of the speaker, but has never happened (since Rome was really built on the Tiber). Therefore, by saying (2b), we say something about reality, even though the state of affairs described in the sentence (Rome being built on the river Seine) is not real. Sentence (2b), in turn, describes a false event in actuality. The event is false because dinosaurs do not exist in the days of the speaker, so one of them could not have eaten the homework. Yet the event is actual, because it is relevant for the world of the speaker; we may safely assume that the speaker talks about this situation in order to explain the very real fact that they do not have their homework.

(1) (a) *Rome lies on the river Tiber.*
    (b) *Rome could have been built on the river Seine.*
    (c) *Cities are built close to water.*
(2) (a) *Dinosaurs became extinct about 65 million years ago.*
    (b) *A dinosaur ate my homework.*
    (c) *All dinosaurs are reptiles.*

Virtual events and states of affairs are different from actual ones in that they do not have direct counterparts in the actual world, although they may correspond to the actual world indirectly. The general statements in (1c) and (2c) are good illustrations. Even though it is generally true for our world that cities tend to be built close to water, note that (1c) does not describe any specific event or a series of events from the past; it merely states in general and somewhat abstract terms what the world is like. The same holds true for (2c); even though dinosaurs were in fact reptiles, the sentence does not refer to any specific group of dinosaurs that lived in the past, but to a type of animals in general. This interpretation is supported by the use of the present tense form *are* rather than the past tense form *were*. Strictly speaking, the sentence is about a present state of affairs, but no dinosaurs live in Earth presently. This indicates that (2c) is not about any concrete creatures, but rather a more abstract type of animal. We may say that the dinosaurs mentioned in (2c) are a "useful fiction" that helps us understand something about real "non-fictional" dinosaurs from the past. For this reason, in terms of Cognitive Grammar, the situation described in (2c) is virtual rather than actual. Of course, this is not to say that general statements like (1c) and (2c) have no relation to actuality and reality (in the narrow CG senses). Since all animals of the type DINOSAUR are reptiles, any real dinosaur that lived on Earth in the past was a reptile. However, the distinction between actuality and virtuality is not a matter of truth and falsehood. Rather, it is a matter of whether words and linguistic expressions refer to concrete entities in

the speaker's world or to referents that are, in one way or another, "useful fictions" conjured up for certain purposes. Let us take a look at other examples.
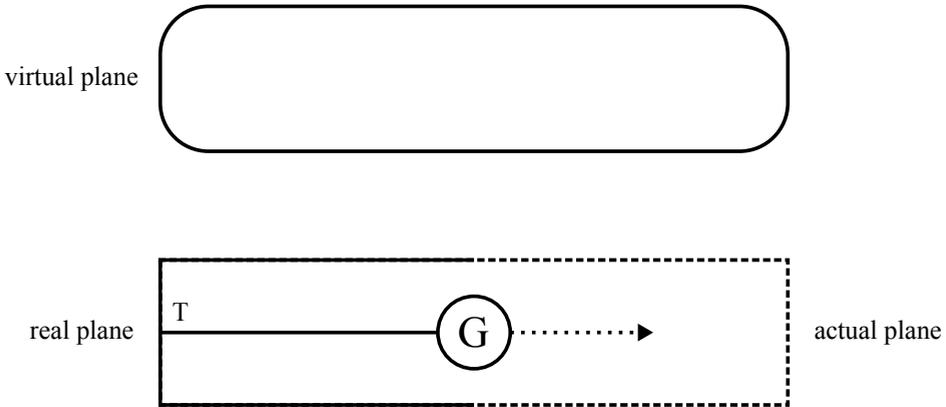
Figure 41: The relations between reality, actuality, and virtuality

The relationships between the real, the actual, and the virtual are sketched in Figure 41 (adapted from Langacker 1999). "G" stands for the ground, i.e. the speaker in the moment of a usage event. The arrow marked with "T" indicates the flow of time. The region on the left from the ground corresponds on the real plane, which embraces the history of the speaker's world, i.e. everything that has happened up until the moment of the speech event. Entities in this area are real. The region to the right of the ground embraces the future. The virtual plane embraces virtual entities that cannot be found in the real or actual plane; they are "useful fictions" conjured up by the speaker for some purposes. The virtual entities may have counterparts on the real/actual plane – this happens when we talk about virtual referents when we want to say something about the real/actual ones – but they belong to the virtual plane nonetheless. In the remainder of this chapter we will take a closer look at more specific examples of virtuality used to convey something about reality/actuality.

12.2. Case study: virtual referents of the indefinite article

To preview a more detailed discussion in Section 15.2, the English indefinite article *a/an* signals that the referent of the following noun is not precisely identified in the context of the speech event in which it is used. This means that the indefinite article can be sometimes used to talk about referents that the speaker cannot or does not wish to specify in greater detail for one reason or another. Consider the sentence (3). The sentence as a whole refers to an actual situation insofar as the speaker

really wishes to pet the animal in question. Note, however, that the speaker does not refer to any specific cat; probably, they would be happy to pet any representative of the biological species *Felis catus*. Thus, in an important sense, *cat* in (3) refers to a cat "in general" rather than a concrete feline. Yet even though the referent of this word is quite general, notice also that the grammatical form of (3) clearly indicates that *cat* refers to a single animal. Therefore, the construal is not the same as in the general statement in (2c), where all reptiles of a particular kind are at stake. Thus, the sentence in (3) expresses generality by means of a virtual instance of an animal, i.e. a single representative of the type CAT.

(3) *I wish I could pet **a cat***.

In Cognitive Grammar, a type of animal, as well as a type of any other thing, is virtual, because it is not a collection of all actual animals that can be found in the actual world, but mental constructions that help us make express something about the world. Real referents are present in the world of the speaker or in the history of this world, so they are not merely "fictional" constructs conjured up in the mind of the speaker. It should be made clear that (3) should not be interpreted as the speaker expressing the desire to pet a "fictional" cat; on the contrary, the speaker would be happy only if they could pet a real cat. Nonetheless, what is important for the grammatical analysis is whether the cat mentioned in (3) is a specific cat in the world of a speaker. If the speaker is satisfied with petting any cat whatsoever, the speaker of (3) does not mean any specific animal and therefore the referent is not real, but virtual in CG terms.

12.3. Case study: metaphor

Metaphor has enjoyed much attention from cognitive linguists and it is impossible to do justice to this extensive field of study in this short section. For our purposes, it is enough to state that metaphor involves the "blending" of two different concepts into a new coherent construct. One well known example used frequently in everyday language is TIME IS MONEY. Notice that even though the sentences in (4) are perfectly well-formed and meaningful, they can be hardly considered to be literal descriptions of objective reality. In a literal sense, time is an aspect of the physical make-up of our universe and not a possession that someone can invest or waste. The sentences in (4) are meaningful and do not strike us as nonsensical because they are understood metaphorically. In this metaphor we think about time as if it were money by "blending" our understanding of the two concepts. Thus, since money

can be possessed, invested, and wasted, and time is metaphorically identified with money, under this non-literal interpretation time can be "possessed," "invested," and "wasted," too.

(4) (a) *I don't **have** time for this.*
    (b) *She **invested** a lot of time in this project.*
    (c) *You're **wasting** my time.*

By now, you may have already noticed the distinctive discrepancy between the real/actual and the virtual inherent in a metaphor. Obviously, time is not actually money – the identity of the two concepts does not hold in the actual world of the speaker. The conception TIME-AS-MONEY is virtual and we may think of it as yet another "useful fiction" that helps us to think about and make sense of the highly abstract and elusive phenomenon of time. This leads to a seemingly paradoxical situation: speakers may talk about non-actual virtual entities, like the ones in (4), to talk about actual states of affairs in their world. To put this point differently, the sentences in (4) do describe the actual world of the speakers, but they do it indirectly, by evoking virtual entities. The task of the hearer is to make sense of the metaphor by figuring out how various elements of the virtual entity TIME-AS-MONEY relate to the actual situation of the speaker. For instance, what is it exactly that the speaker of (4a) wants to convey about their situation when they metaphorically talk about "having time" as if time was money? Metaphor is yet another illustration of how virtual entities are not just fanciful vagaries of the imagination, but important linguistic and conceptual devices that help us to think and talk about the world around us.

12.4. Case study: virtual speech acts

When we speak, we oftentimes do not merely convey information, but also do something with words. For example, when we ask someone to open a window, we do not just inform the hearer about our intentions, but we want them to perform the action in question. Bearing this in mind, we may tentatively define speech acts as actions that we perform by means of words. Some examples are ordering, requesting, apologizing, and promising. Just like metaphors, speech acts have received a lot of attention from linguists and we will not review all the relevant literature at this point. What is important for our purposes is that in many speech acts there is a discrepancy between what is said explicitly and what is meant implicitly. For instance, when a speaker orders a hearer to close a window, the speaker may prefer

to say (5a) rather than (5b). However, when we take (5a) at face value, it seems that the speaker is asking a question, when in fact they are issuing and order.

(5) (a) *Could you close the window?*
    (b) *I order you to close the window!*

In terms of Cognitive Grammar, we may describe this situation as the speaker performing the **virtual speech act** of asking a question in order to perform the actual speech act of issuing an order. The speech act of ordering is actual in that sense that this is exactly what the speaker is doing while producing (5a). In principle, (5b) matches the speaker's intentions more closely, but at the same time the sentence is likely to be considered too direct and impolite in many situations. In order to mitigate the "force" of the speech act and make the order less straightforward, the speaker may choose to perform a different speech act instead; for instance, to ask about the capacity of closing the window, like in (5a). This speech act cannot be considered to be actual, because the speaker is not really asking whether the hearer is capable of closing the window. In fact, if the speaker were really in doubt about the hearer's capacity to close the window, they would most likely not even bother to ask (5a). The speech act of asking (when the speaker intends to issue an order) is best described as a virtual question meant to make the order more polite.

(6) (a) *I bet a dinosaur ate your homework…*
    (b) *I'm sorry for what I did.*
    (c) *Would you like some tea?*

Virtual speech acts are pervasive in everyday language; surprisingly enough, we frequently do not say overtly what we really mean. Consider, for example, the sarcastic statement in (6a), where the speaker performs a virtual speech act of betting, when they actually criticize the hearer for not having their homework and perhaps intend to forestall a silly excuse. Another example is the actual speech act of apologizing in (6b), performed with a virtual speech act of talking about one's feelings. In (6c) the speaker performs the actual speech act of offering tea, while performing the virtual speech act of asking about whether the hearer would like the beverage. While sentences of this sort are readily interpreted as offers by users of English, notice that questions do not express proposals directly. In order to perform the speech act directly and explicitly, the speaker would need to use a word profiling the action of offering expressly and produce a sentence like *I'm **offering** you tea*.

To summarize this section, the speakers of (5) and (6) mean something else than they seem to be saying. More technically, they use a virtual speech act to "cover up"

the actual speech act which they are really performing. Virtual speech acts of this sort are frequently used for the sake of politeness or when other social and cultural considerations prevent the speaker from expressing their communicative intentions openly. Virtual entities used in language are not always completely disconnected from the real world of the speaker. Even though virtual entities do not belong to an actual world, they may have counterparts in the actual world and may be linked to actuality in a number of ways. For example, even though the cat in the construal behind (3) is not necessarily actual, the whole sentence expresses the actual wish to pet a real cat of flesh and bones. Likewise, even though the identity of time and money in (4) is only virtual, the speakers use the expressions to talk about actual states of affairs. Finally, even though we often produce virtual speech acts, we use them to bring about changes in the actual world around us.

Study questions

1. Which of the referents marked with bold font in the sentences below are virtual?
    a) *Can you play the piano?*
    b) *I can't play the guitar. It's out of tune.*
    c) *I like kangaroos.*
    d) *Do not feed the kangaroos!* (Sign in a zoo next to a kangaroo enclosure)
    e) *Jack claims he saw a hippogriff last week.*
    f) *All hippogriffs have eagle wings.*

2. Sometimes speakers talk about virtual actions, i.e. actions that never took place in the speakers' world, to describe real states of affairs. How does the sentence below, derived from Will Self's novel *Great Apes* (2012 [1997]), illustrate this phenomenon?

    She was round-faced with wavelets of black hair tossed about on the top of her head.

3. All of the sentences below involve virtual speech acts. What is the difference between what is explicitly said and implicitly meant?
    a) *Can you open the window?*
    b) *Smokers are invited outside.*
    c) *Help yourself towards the sandwiches.*
    d) *If I were you, I'd study harder.*
    e) *Why don't you call Jill?*
    f) *Good morning.*

References and further reading

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13. The structure of events

The meaning of the term *event* as used in Cognitive Grammar has much to do with the everyday meaning of the word, but it also involves several important refinements. Most importantly, an event (in the CG terminology) is a mental representation of some state of affairs, rather than a situation in the real-life world. This is a natural consequence of the general assumption behind Cognitive Grammar stipulating that the way we speak about the world depends crucially on how we represent the world in our minds rather than on what the world is really like. Moreover, a CG event can be any situation involving some sort of process and its participants. Thus, even unreal occurrences (*John saw a living T-Rex yesterday*), general states of affairs (*Water boils in 100 degrees Celsius*), and "uneventful" static configurations (*The stick is 30 centimeters long*) count as events in Cognitive Grammar.

Sentences are essentially linguistic expressions of events, i.e. mental representations of certain situations or states of affairs. It is then hardly surprising that many grammatical phenomena in sentences can be fruitfully explained in terms of the structure of these representations. The discussion in this chapter will mainly revolve around the distinction between two broad categories of events and the consequences of this distinction to the grammar of English. Yet before we move on to the discussion proper, it is necessary to introduce another theoretical concept.

13.1. The action chain

Many events, including the situations we are most likely to call "events" in real-life, involve some sort of force interaction between at least two participants.[16]

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[16] The notion of force interaction was introduced by Leonard Talmy (1988a). In Talmy's nomenclature, the entity exerting force is termed the *agonist* and the entity influenced by force the *antago-*

During a force interaction, one entity (the **agent**) influences another entity (the **patient**). The latter has certain "inertia," i.e. a tendency to resist the force exerted. If the agent overcomes the patient's inertia, the patient undergoes a change of some sort. The force interaction is oftentimes mediated by another entity called the **instrument**. The three entities are the basic ingredients of the so-called **action chain**, i.e. an abstract mental representation of force interactions between various entities (see Figure 42). As well as the three elements, the action chain involves a flow of energy from the agent (functioning as the head[17] of the chain, i.e. the source of energy) through the instrument to the patient (functioning as the "energy sink" that receives the energy from the source).
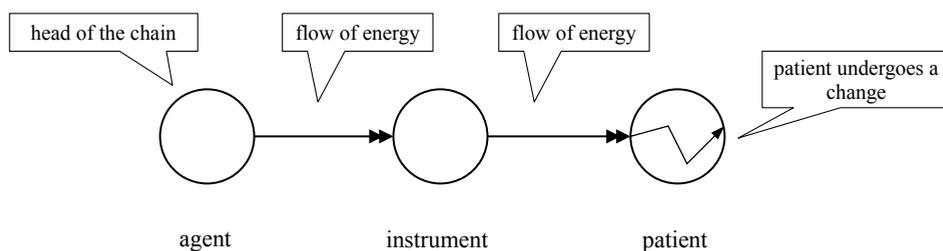
Figure 42: The action chain

The action chain is a highly schematic representation of force interaction between three entities and serves as the base (as in the profile/base distinction) for construals behind transitive sentences, like the already discussed *Floyd broke the glass* in (1a). Note that the sentences in (1) may describe the same event and the main difference between them is which participants of the interaction are "highlighted" and brought into the focus of attention.

(1) (a) *Floyd broke the glass.*
    (b) *Floyd broke the glass with a hammer.*
    (c) *A hammer broke the glass.*
    (c) *The glass broke.*

The respective construals are sketched in Figure 43. In (1a) only the agent (FLOYD) and the patient (THE GLASS) are profiled and the instrument remains "backgrounded" and implicit. In (1b) all the elements of the action chain are profiled

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nist. The terms *agent* and *patient* adopted in this book have wider application, since they are not restricted to force interactions alone.

[17] Not to be confused with the constructional head, i.e. the element that determines the profile of the entire composite expression (see Section 6.2).

and consequently all participants of the force interaction are mentioned explicitly in the sentence. In (1c) the agent is backgrounded, so that the sentence focuses on the instrument (A HAMMER) and the patient. Finally, in (1d) only the change in the patient is depicted and both the agent and the instrument remain backgrounded and implicit. In sum, the basic cognitive mechanism underlying the action chain is the same as the general mechanism behind any other construal discussed in Chapter 2, i.e. "highlighting" certain elements and placing them as the focus of attention. More technically, the differences in meanings expressed by various words and expressions emerge as a result of imposing different profiles on the same base.

Floyd broke the glass.   *Floyd broke the glass with a hammer.*

A hammer broke the glass.   *The glass broke.*
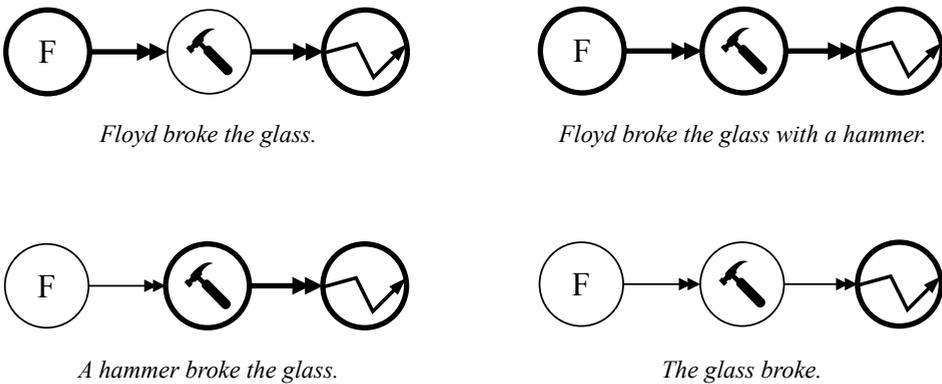
Figure 43: Construal behind the sentences in (1)

13.2. Agent orientation and theme orientation

The sentences in (1) illustrate two different strategies of construing an event for linguistic purposes. Essentially, the speaker may focus on the head of the action chain (usually the agent), i.e. the source of the energy influencing the patient. When the attention focuses on the more active participant, the participant becomes the trajector of the process expressed by the sentence and the more passive participant becomes the landmark. This strategy is termed **agent orientation** and is evident in (1a) and (1b). Alternatively, the speaker may focus on what happens to the patient. This strategy is termed **theme orientation** and is illustrated by (1d). Here, the more passive participant becomes the trajector of the process and since only one participant is profiled, there is no landmark in the construal. These two orientations form a continuum with many different variants in between, depending on whether the active or the passive participants of the event receive more attention. For example, (1c) is somewhere in between agent and theme orientation. On the one hand, (1c)

departs from typical agent orientation in that the hammer functions as the trajector of the process, even though the hammer is not the source of the energy, since the action cannot be initiated by the hammer without any agent wielding the tool. On the other hand, the sentence departs from typical agent orientation in that the attention is shifted away from the "energy sink" THE GLASS – (1c) seems to be more about what the hammer does rather than about what happens to the glass. Consequently, the sentence explicitly features a flow of energy between the trajector (A HAMMER) and the landmark (THE GLASS).

13.2.1. Trajectors in theme-oriented sentences

As already noted, a typical trajector in agent-oriented expressions is the source of energy flowing along the action chain. A prototypical agent-trajector is an animate entity, usually a human being, who intentionally initiates and carries out an action, as in (1a). When the trajector of the process fails to satisfy these criteria, the construal becomes more theme-oriented. There are many different ways in which the construal behind a sentence may depart from the typical agent orientation. The sentences in (2) are meant to provide a handful of illustrations rather than an exhaustive list of such examples.

(2) (a) *The tower collapsed.*
    (b) *Jill saw a jackdaw.*
    (c) *Floyd weighs about 70 kilograms.*
    (d) *Jack was taken to the hospital after having eaten a poisoned apple.*

In (2a) the trajector of the process of collapsing is THE TOWER, which is not a typical agent: it does not make the decision to collapse and it is not the source of energy in the action chain. Rather, the tower is a patient of the process, i.e. the passive participant undergoing a change. If the tower had been intentionally demolished by someone, this "someone" would have been the source of energy, but since they are not mentioned in the sentence, they cannot serve as the trajector. If the tower had collapsed on its own, e.g. due to structural fatigue, the process does not have any agent in the strict sense of the word.

In (2b) the trajector is a human being (Jill), but the acts of perception are not typical actions performed by typical agents. The act of seeing something is not necessarily intentional – we may see something without intending to – and it is controlled to a smaller extent. Moreover, there is no real energy flow in acts of perception, since the perceiver does not influence the perceived object in any way

and the object (the jackdaw in (2b)) does not undergo or resist any change. Thus, in (2b) Jill has the role of the **experiencer** rather than the agent and the whole construal is to some extent theme-oriented.

In (2c) the trajector is a human being again (Floyd), but weighing 70 kilograms is not an action. It would be weird to claim that Floyd "performs the action of weighing 70 kilograms," since no energy flow is involved in the event, and 70 kilograms do not undergo any change by virtue of Floyd having this weight. In (2c) Floyd is an even more passive participant than Jill in (2b); while Jill has some control over the process of seeing the jackdaw (e.g. she can close her eyes), Floyd cannot instantly do anything about weighing 70 kilograms. The participant that does not partake in an energetic interaction, has no immediate control over the process, and is not affected by it is termed **zero**.

Finally, in (2d) there is some sort of energetic interaction between Jack and the unmentioned persons who took him to the hospital, but the sentence focuses on the passive participant of the process (Jack). Generally, in **passive voice** sentences like (2d) the focus is reversed compared to active voice sentences. In active voice, the active participant (the agent) functions as the trajector and the passive participant (the patient) functions as the landmark; the sentence *Floyd broke the glass* is a classic illustration of this arrangement. However, in passive voice sentences the patient becomes the most prominent participant (i.e. the trajector) and the agent becomes the less prominent participant (i.e. the landmark).[18] Since in this case the trajector is the passive participant, sentences of this sort count as instances of theme orientation.

Note that some form of energy flow is a prerequisite for felicitous passivization, i.e. forming the passive voice, and sentences that do not feature typical energetic interactions tend to resist the process. Hence, (3a) is a perfectly grammatical passive version of (1a), since the construal involves robust energy flow from Floyd to the glass. However, (3b) is less felicitous, since (as discussed above) Jill is not a typical agent, because she has only limited control over the process and her action may not have been intentional. The sentence (3c) is entirely ungrammatical, since Floyd is in no way an active agent and no energy flows from the man to the kilograms.

(3) (a) *The glass was broken by Floyd.*
    (b) ??*A jackdaw was seen by Jill.*
    (c) **70 kilograms was weighed by Floyd.*

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[18]   This is reflected in the terminology itself: the "active voice" focuses on the active entity and the "passive voice" on the passive entity.

13.2.2. Setting-subject constructions

Setting-subject constructions are a type of theme-oriented constructions in which the setting of the action functions as the trajector of the process denoted by the sentence. One example is (4a),[19] where the trajector of swarming is the garden rather than its true agents, i.e. the bees. The sentence counts as an instance of theme orientation, because the garden is a passive participant of the process. In fact, one could argue it is even hard to think about the garden as a genuine participant, as it is rather a location of the event. Nonetheless, the speaker of (4) chooses the garden as the grammatical subject, possibly because they want to emphasize the fact that the sound of bees can be heard throughout the entire location.

(4) (a) *The garden is swarming with bees.*
    (b) *Thursday saw yet another startling development.*
    (c) *Woody Allen's latest movie stars Sylvester Stallone.*

Settings are not necessarily physical locations in which events take place. For example, in (4b) the "setting" is the time of the action. The basic logic behind (4b) is the same as the logic behind (4a): the entity used as the trajector of the process (Thursday) cannot be a literal agent performing the action, but for some reason the speaker of (4b) decided to emphasize the day of the week rather than the people who actually witnessed the development in question. In (4c) the setting is slightly more abstract: it is the film that functions as the "location" for Stallone's cinematic performance.

Subject-setting constructions can help us to analyze the *there-be* construction in (5). The analysis of this construction is a recalcitrant problem in linguistics, since it appears that the subject of the sentence is *there*, even though the entire sentence appears to be primarily about the apples. While a detailed discussion on the complexities of *there-be* is beyond the scope of this book, Langacker essentially bites the bullet and treats *there* as a kind of setting for the "event" of the apples existing on the table. This is an example of **abstract setting**, where the location evoked by the sentence is very abstract and general. What corroborates this analysis is that the basic meaning of *there* is a location, only that the place is highly schematic and specified in very little detail. Thus, in Cognitive Grammar sentences like (5) count as a special type of setting-subject constructions (which, in turn, are a type of theme-oriented construal).

(5) *There is an apple on the table.*

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[19]   Examples in (4) are borrowed from Langacker (1991, vol. 2, sec. 8.1.3.2).

Since setting-subject constructions do not involve the flow of energy between the trajector (i.e. the setting) and other participants, sentences of this sort resist passivization. Notice that the passive versions of (4b) and (4c) are ungrammatical in English.[20]

(6) (a) *Another startling development was seen by Thursday.*
    (b) *Sylvester Stallone was starred by Woody Allen's latest movie.*

As we have seen, the choice of participants featured in an event and whether the participants function as trajectors or landmarks in the construal have important linguistic consequences. On the level of interpersonal communication, the participant that is selected for the trajector receives most attention, so selecting patients in passive sentences and settings in setting-subject constructions places emphasis on these elements of the event. On the grammatical level, the notion of energy flow in the action chain explains why certain sentences resist passivization even though at first glance they appear "passivizable" in principle.

13.3. Interlude: too many terms (yet again)!

At this juncture, our discussion suffers from a proliferation of various theoretical terms once again. Just as in the case of reference point phenomena explained in Chapter 8, this is a matter of applying different theoretical labels to the same referents depending on the context in which these referents are discussed. The distinction between subject and object hints at traditional grammatical roles given to nominals in a transitive sentence. As already mentioned, the trajector and the landmark correspond to the more and the less prominent roles in a construed relation. The agent and the patient are roles within the action chain and are understood primarily in terms of energy flow: the former is the source of energy and the latter is the "energy sink." Thus, in (1a) *Floyd* is the (grammatical) subject, the trajector of the relation, and the agent initiating the energy flow. The roles are summarized in Table 5.

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[20]   Since (4a) is not a transitive sentence (it lacks a grammatical object), it cannot be passivized for independent reasons.

Table 5: Roles in *Floyd broke the glass*

	Floyd broke **the glass.**	
Noun phrase	*Floyd*	*the glass*
Grammatical function	subject	object
Prominence in construal	trajector	landmark
Role in action chain	agent	patient

Compare this to the roles of the nominals in a different construal, a passive theme-oriented sentence in (3a), summarized in Table 6.

Table 6: Roles in *The glass was broken by Floyd*

	The glass was broken by **Floyd.**	
Noun phrase	*the glass*	*(by) Floyd*
Grammatical function	subject	(prepositional) complement
Prominence in construal	trajector	landmark
Role in action chain	patient	agent

When you compare the two tables, you will notice that passivization consists essentially of switching the trajector and the landmark roles, which influences the grammatical function in the sentence (trajectors are subjects, landmarks objects or complements). However, the roles in the action chain remain unchanged, since modifications in the construal may change conceptual and grammatical properties of entities, but they do not change the way in which energy flows in the real world.

13.4. Other types of sentences

The discussion above focuses on transitive and "transitive-like" sentences, where the agent and the patient in the action chain are overtly expressed in the sentence. Traditional grammatical terminology also distinguishes other types of sentences, briefly discussed below.

(7) (a) *Jack shaved.*
    (b) *Jack shaved in the bathroom.*
    (c) *Jack gave Jill an apple.*
    (d) *Jack gave an apple to Jill.*

The event depicted in (7a) features only one participant: the agent. This is an instance of an **intransitive** sentence. Arguably, the event involves some sort of energy flow between Jack and his facial hair, but since the facial hair is not mentioned explicitly in the sentence, it is not an overt element of the construal. In cases like this, we can talk about only the agent being highlighted in the action chain sketched in Figure 42. (7b) is similar to (7a) in this respect, but it includes the prepositional modifier *in the bathroom*, profiling the location in which the action takes place. Even though the grammatical relation between the prepositional phrase and the rest of the sentence is not (strictly speaking) understood as complementation in Cognitive Grammar (see Section 6.3), this sentence exemplifies what is sometimes called **complement pattern**.

The sentences (7c) and (7d) feature three participants: Jack, Jill, and an apple. (7c) is a **ditransitive** sentence – it includes two landmarks functioning as grammatical objects: *Jill* and *an apple*. In this pair, Jill is slightly more prominent and functions as the primary landmark. Notice that when we consider the form of the sentence, Jill is closer to the verb that the secondary landmark AN APPLE. This syntactic proximity suggests that Jill is construed as being affected to a greater degree by Jack's action. (7d) includes a prepositional complement *to Jill* and the sentence illustrates what is sometimes called **transitive complement pattern**. Here, the primary landmark is *an apple* and the sentence appears to focus more on the apple than on the recipient. The reduced prominence of Jill is suggested by the fact that the prepositional complement is optional; thus, the sentence *Jack gave an apple* is perfectly grammatical.

Study questions

1. For the sentence *Jack picked an apple with an elaborate apple-picker of his own design*, specify:
    - the grammatical subject and the grammatical object
    - the trajector and the landmark of the processes
    - the patient and the agent of the action chain
2. Sketch action chains similar to the ones in Figure 43 for the following sentences:
    a) *Jack picked an apple with an elaborate apple-picker of his own design.*
    b) *The apple was damaged during picking.*
    c) *These apples rot easily.*
3. Why do the following sentences sound awkward in the passive form?
    a) **200 grams is weighed by this apple.*
    b) *???The apple was thought about by Gill.*
    c) **The apple was tried to be picked by Jack.*

References and further reading

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14. Relations between clauses

Syntactic relations are relations between various elements of a sentence or a phrase. Strictly speaking, the grammatical relations of complementation and modification discussed in Chapter 6 are syntactic relations when they hold between elements of a composite expression, but complementation and modification are not limited to syntactic phenomena alone; they may also hold between parts of a single word, e.g. an affix and the stem to which the affix attaches. In this chapter we will take a closer look at relations in complex sentences consisting of more than one clause. For our purposes, we will define a clause as a sentence or a sentence-like expression with a verb as the constructional head (i.e. the word determining the profile of the expression). We will discuss three main types of syntactic relations: coordination, subordination, and apposition.

14.1. Coordination

Coordination is a relation between elements (called **conjuncts**) usually linked with **connectors** like *and*, *or*, and *but*. The connectors can be used to combine two clauses in a complex sentence, like in (1a), but also smaller elements that are not fully developed clauses, like in (1b). Coordination takes place when the elements in question have a relatively equal status in the construal. Thus, in (1a) the clause *Floyd broke the glass* and the clause *Mary broke the vase* denote two similar events and enjoy the same grammatical status in the entire complex sentence. By the same token, the nominals *the glass* and *the vase* in (1b) are both patients in the action chain, as well as landmarks of the process of breaking, and in (1c) both Floyd and Mary are authors of a book. Yet the semantic status of the two conjuncts is only roughly equal and usually there are some subtle differences

between them. For example, the differences may result from the order in which the elements appear in the sentence.[21] The sentence in (1a) is usually interpreted as reflecting the chronological order of the actions, i.e. it is natural to assume that Floyd broke the glass first and then Mary broke the vase. Similarly, (1c) may be easily interpreted as depicting Floyd as the primary author and Mary as the secondary author, regardless of their actual contribution to the book. Thus, even though the connector *and* does not imply any strict order, the ordering of conjuncts in the sentence may make a difference in the meaning regardless of the semantics of the connector.

(1) (a) *Floyd broke the glass **and** Mary broke the vase.*
     (b) *Floyd broke the glass **and** the vase.*
     (c) *Floyd **and** Mary wrote a book on breaking things.*

While *and* signals that the conjuncts appear together in a single construal, it does not say much about the nature of the relation between the elements. (1c) is somewhat ambiguous and has two possible interpretations: (i) Floyd and Mary wrote one book together, or (ii) Floyd wrote one book and Mary wrote a different book. Under the interpretation (i), Floyd and Mary are construed as a pair of co-authors or more technically: *Floyd and Mary* profiles a single entity consisting of two elements (Floyd + Mary) that function together as the trajector of the process of writing. Under (ii), Floyd and Mary are not coauthors and the sentence construes two different processes of writing a book. Each of the persons functions as a single trajector for the respective processes, so *Floyd and Mary* is not construed as a single pair. The two construals are sketched in Figure 44, where the arrow stands for the process of writing and the heavy lines signal which entity is profiled in the two interpretations of *Floyd and Mary*. In other cases, the degree of integration between the conjuncts can be even greater. For example, the fixed expression *short and sweet* is typically understood as denoting one uniform concept rather than a pair of two different concepts, so arguably the degree of conceptual integration is even greater that in the case of *Floyd and Mary* under the interpretation (i).

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[21] This is an instance of the so-called structural iconicity, where some formal aspects of a sentence (e.g. the order of conjuncts) reflect some aspects of meaning (e.g. the chronological order of events).

(i)   (ii)
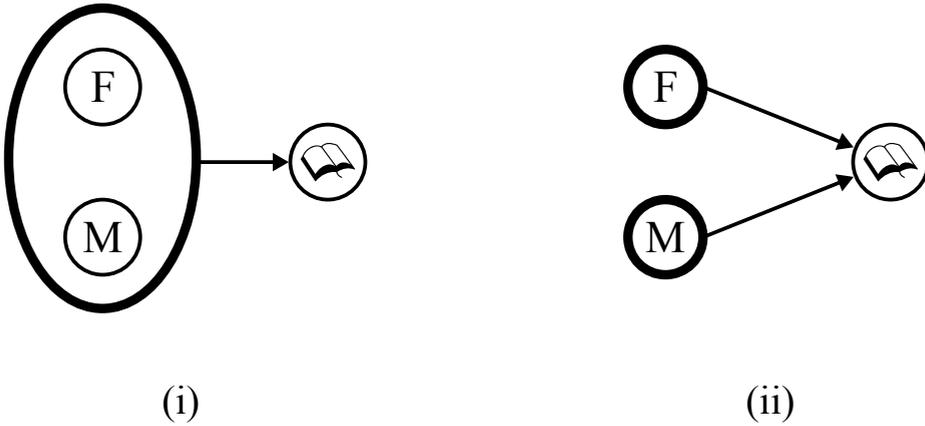
Figure 44: Two construals behind *Floyd and Mary wrote a book…*

The connector *or* differs from *and* in that the former does not evoke the conjuncts simultaneously in a single profile; rather, it evokes a construal in which one role can be performed by one out of several alternative candidates (usually to the exclusion of the other candidates). Thus, the sentence in (2) evokes a process of breaking a glass in which the role of the agent (i.e. the trajector) can be performed by Floyd or Mary (but not both of them under a typical interpretation). The relation counts as coordination, because the semantic and grammatical status of both Floyd and Mary is equivalent. Both of the words profile people and both of them can serve as the trajector of the process denoted by (2), even though they do not function as agents simultaneously.

(2) *Floyd **or** Mary broke the glass.*

The connector *but* is similar to *and,* with the difference that the former implies some conflict or contradiction between the conjuncts. In (3a) Floyd is recognized as the agent who broke the glass, but his agency in the breaking of the vase is denied. While the negation is expressed predominantly by *not* and in principle the sentence would remain grammatical if the connector *and* were used, as in (3b), the negation inherent in the meaning of *but* helps to emphasize the negation conveyed by *not*.

(3) (a) *Floyd broke the glass, but he did not break the vase.*
    (b) *Floyd broke the glass and he did not break the vase.*

14.2. Subordination

Subordination is a relationship between clauses that have notably different statuses in a complex sentence. As already mentioned, even in the case of coordination the status of conjuncts is not entirely equal, but in subordination the asymmetry of elements is much more prominent. One element is the so-called **matrix clause** and the other is "embedded" and semantically dependent on the former. For instance, in the sentence *Floyd broke the glass that Mary liked a lot* the part *that Mary liked a lot* is a subordinate clause that says something more about the glass mentioned in the matrix clause *Floyd broke the glass*. Subordinate clauses depend on their matrix clauses in many different respects and this brief overview cannot do justice to all complexities of the relation. The discussion in the remainder of the section is limited to two important aspects of subordination: types of subordinate clauses and the construal of the subordinate process.

14.2.1. Types of subordinate clauses

There are three main types of subordinate elements. The first type is an **adverbial clause**. As the name suggests, it performs roughly the same function as an adverb: it says something more about the process in the matrix clause. A handful of examples are presented in (4) (the subordinate clauses are in bold). Adverbial clauses oftentimes resemble coordinate clauses in that the two elements have somewhat similar semantic status. For example, in (4a) the clauses *Floyd broke the glass* and *Mary broke the vase* can both function as standalone sentences and both of them denote distinct processes.

(4) (a) *Floyd broke the glass **before Mary broke the vase***.
     (b) *Floyd broke the glass, **because Mary had asked him to***.
     (c) *Floyd broke the glass, **even though Mary had forbidden it***.

Nonetheless, the clauses are not as symmetrical as in the case of coordination. Notice that while in (1a) the two actions were simply "listed" in a sequence, in (4) the subordinate clauses following the connectors *before*, *because*, and *even though* have a special semantic relation to the matrix clause:
- *before* signals that the process in the subordinate clause happened after the process in the matrix clause,
- *because* signals a cause-and-effect relation between the two processes,
- *even though* signals that the process in the matrix clause occurred despite the fact that the process in the subordinate clause could have prevented it.

More abstractly, the two clauses display a sort of trajector/landmark alignment, where the process in the matrix clause (the trajector) is somehow "oriented" relative to the content of the subordinate clause (the landmark). This alignment is reflected in the meaning of the connectors – *before*, *because*, *even though*, and other words of this type evoke two e-sites for schematic processes (one for the trajector and the other for the landmark) combined with the relation denoted by the connector. When the entire complex phrase is put together, the e-sites are elaborated by the matrix and the subordinate processes.

The second type of a subordinate element is a **relative clause**. While the previous type modifies the process, relative clauses modify a noun phrase in the matrix clause. Thus, in the sentences (5a) and (5b), the subordinate clauses in bold say something more about the glass and Floyd, respectively. Sentences of this kind feature a **pivot**, i.e. a nominal that has some role in the processes denoted by both the matrix and the subordinate clause. For example, in (5a) the pivot is *the glass*, which is the landmark of the processes of breaking (in the matrix clause) and receiving for birthday (in the subordinate clause). In (5b) the pivot is *Floyd*, who is the trajector of the matrix process (breaking the glass) and of the subordinate process (being in a very bad mood). The pivot does not have to perform the same kind of role in both parts of the complex sentence and so in (5c) Floyd (the pivot) is the trajector of breaking (the matrix process) and the landmark of being hated by Mary (the subordinate process).

(5) (a) *Floyd broke the glass **that Mary got for her birthday***.
     (b) *Floyd, **who was in a very bad mood**, broke the glass*.
     (c) *Floyd, **who Mary hated for breaking things**, broke the glass*.

The third type of a subordinate element is a **complement clause**. Clauses of this sort perform the role of a participant in the process denoted by the matrix phrase; for this reason, they usually function as grammatical subjects and objects. The verbs *to shock* and *to recognize* in (6a) and (6b) denote processes construed as things and expressed by noun phrases; the sentences have a similar grammatical structure as ***The film** shocked Mary* and *Mary recognized **the thief***. In (6a) and (6b) one "slot" for a noun phrase is taken by a subordinate sentence. Moreover, complement clauses with finite verbs, like the ones in (6a) and (6b), usually include the connector *that*, which profiles a highly schematic thing. Thus, their role in the construal and the usage of *that* suggests that complement clauses approximate nominals in some respects. Nonetheless, this type of clause cannot be unanimously said to profile things. The reasons for this are numerous and quite complex and cannot be covered in much detail in this brief overview. Let us just

note two important points. Firstly, when typical nouns are used with *to shock* and *to recognize*, the sentences can be passivized, e.g. the sentences *Mary was shocked by the film* and *The thief was recognized by Mary* are perfectly grammatical. However, the passive versions in (6c) and (6d) are hardly acceptable. This suggests that the complement clauses do not participate in the processes in the matrix clauses in exactly the same way as regular nouns do. Secondly, the subordinate clauses in (5) can be modified by adverbs, but not adjectives. Since adjectives modify words whose referents are construed as things and adverbs modify words whose referents are construed as relations (see Chapter 3), this strongly suggests that the profile of the subordinate clause is to a large extent relational (rather than nominal) in nature. We will return to the issue of nominal construal in subordinate clauses in Section 14.2.2.

(6) (a) ***That Floyd broke the glass*** { *silently* / *silent } *shocked Mary.*
    (b) *Mary recognized **that Floyd broke the glass** { **silently** / ***silent** }.*
    (c) **Mary was shocked by **that Floyd broke the glass***.
    (d) ???***That Floyd broke the glass*** *was recognized by Mary.*

To conclude the section on subordination it is worth mentioning that it is not always the case that the matrix sentence features the most important and the most prominent process in the entire sentence. In the sentences in (4)–(6) the matrix sentence is indeed the primary focus of attention, e.g. (5a) is primarily about Floyd breaking the glass rather than Mary receiving it as a birthday present. However, which clause is most prominent is largely an independent issue and is not dictated by subordination alone. Consider, for instance, the sentence in (7):

(7) *I think **that Floyd did a very vicious thing when he broke Mary's favorite glass***.

Strictly speaking, the matrix clause in (7) is *I think…* and everything that follows is a subordinate complement clause (with yet another subordinate adverbial clause *when he broke Mary's favorite glass*). However, it would be hard to argue that the main focus of the sentence is speaker's process of thinking denoted by the matrix clause. Instead, the emphasis is on the speaker's judgment about Floyd's action, denoted in the subordinate complement clause. Thus, the main topic of the sentence cannot be always guessed from the grammatical relations between the clauses and other factors need to be taken into consideration. In (7), for example, the very length of the subordinate clause compared to the brevity of the matrix clause may suggest that the most important part of the meaning is in fact expressed in the subordinate clause.

14.2.2. Processual vs. nominal profiles

While the constructional head of a subordinate clause is a word referring to an event of a sort, it is not required that the referent of the word is construed as a process. At first blush, this may sound paradoxical, since an event is a process by definition! Bear in mind, however, that the meaning of a word is determined by how the event is depicted in construal. Thus, even though running is a process in and of itself, it may be construed in various alternative ways for linguistic purposes: *to run* is construed as a verb profiling a process, *running* is a mass noun with unbounded nominal profile, *a run* is a count noun with bounded nominal profile, etc. (see also Chapters 3 and 4). By the same token, the process expressed by the constructional head of a subordinate clause can be construed in various ways. Take a look at the sentences with complement clauses in (8):

(8) (a) *Floyd admitted **that he had broken the glass** { silently / *silent }.*
     (b) *Floyd planned **to break the glass** { silently / *silent }.*
     (c) *Floyd regretted **his** { *silently / silent } **breaking of the glass**.*

As already mentioned in the previous section, complement clauses perform the grammatical roles of nouns in that they act as stand-ins for participants in the process conveyed by the matrix clause. For instance, in (8a) *that he had broken the glass* functions as the landmark of the process of admitting. The landmark is (to some extent) construed as a noun, as suggested by the connector *that* and the fact that the verb *to admit* takes nominal objects (*Floyd admitted his **guilt*** vs. **Floyd admitted is guilty*). However, the subordinate clause can hardly be considered to be a fully-fledged nominal, as suggested by complement clauses' resistance to passivization and the fact that they can be modified by adverbs, but not adjectives (see Section 14.2.1). This indicates that despite functioning as a stand-in for a nominal, the clause retains its original relational character to a notable extent. This claim is less paradoxical than it may seem when we remember that profiling is dynamic and flexible, so whether something is profiled as a thing or as a relationship is a matter of degree rather than an either-or choice. On the thing-relation spectrum, the subordinate clause in (8a) falls closer to the "relation" end and therefore it functions as a thing only to a very limited degree.

This largely remains true for *to break the glass* in (8b), which can be modified by an adverb, too. The verb comes in the form of the infinitive, which eliminates sequential scanning and consequently "removes" the flow of time in the construal (see Section 5.1.2). Moreover, infinitives eliminate grounding, so that forms like *to break* do not provide any information about how the process is related to the "here

and now" of the speech event. The lack of sequential scanning makes infinitives somewhat more similar to nouns (which involve summary rather than sequential scanning). In (8c), however, the construal is nominal to a much greater degree, which is demonstrated by three facts: (i) *breaking* can be modified by an adjective, but not an adverb; (ii) *breaking* can be modified by a possessive (*his* in this case), which is compatible only with nouns; (iii) *breaking* can be used in the construction *X of Y*, which admits two noun phrases. Thus, even though the clause *his silent breaking of the glass* refers to an event of breaking, it construes the event as an abstract thing via summary scanning, which deemphasizes the flow of time. The takeaway message from this discussion is that subordinate clauses do not always come in the form of "embedded" sentences with finite verb forms. Subordination is a matter of the relationship between the "embedded" process and the process in the matrix sentence, but how exactly this "embedded" process is construed is largely independent from subordination itself. The distinction between a fully-fledged nominal and a fully-fledged processual construal is a matter of degree and the "embedded" event may fall somewhere in between these two extremes.

14.3. Apposition

Apposition is a relationship between two adjacent elements that profile the same referent. In (9) the nominals in apposition are surrounded with square brackets. Depending on the difference in the semantic status between the two elements, apposition may be more similar to coordination or subordination. In (9a) the two nominals in apposition appear to be similar in status – the sentence simply puts together two pieces of information about the glass and it can be paraphrased into *Floyd broke the glass and it was Mary's birthday present* without loss of information. Therefore, this case of apposition resembles coordination to a large extent. In (9b), however, *that Floyd broke the glass* specifies *the fact* in much more detail. If this *that*-clause were removed, the entire sentence would suffer from a significant loss of information. Therefore, the two elements do not appear to share the same status in the sentence and their relationship is more similar to the subordination in relative clauses, where the "subordinate" *that Floyd broke the glass* specifies *the fact* in more detail.

(9) (a) *Floyd broke **[the glass]** – **[Mary's birthday present]***.
    (b) ***[The fact] [that Floyd broke the glass]** angered Mary*.

Unsurprisingly, the elements in apposition depict the same referent differently. In (9a) the difference results mostly from the fact that *the glass* and *Mary's birthday*

present are profiled against different domains: the former against the domain [GLASSWARE] and the latter against the domain [BIRTHDAY]. In (9b) the key difference is the level of specificity: *the fact* is highly schematic and *that Floyd broke the glass* is much more specific. Thus, technically speaking, the concept behind the latter expression elaborates the concept behind the former expression. The differences in construal are of course the main reason why apposition is used in the first place – its function is to add new information or to present the already mentioned referent in a new way. If the construal behind both elements were identical, the construction would be a simple repetition of the same words or expressions and would not add anything new.

Whether the clauses in apposition form a coherent whole or function as expressions loosely strung together in a sentence is a matter of degree. In (9a) the latter scenario seems to be the case. The separation of the clauses is reflected a "break" separating them when the expression is produced by the speaker. In speech, the "break" takes the form of a short pause and a slight change of intonation, while in writing, it is reflected by a dash ("–") or a similar punctuation mark. In (9b), however, both punctuation and the lack of prominent pause in speech suggest that the clauses form a more close-knit whole. In such cases, one characteristic property of apposition is that the profile of such a composite expression is determined by both clauses simultaneously. Of course, this is a logical consequence of both of the clauses profiling the same referent, so one referent cannot take precedence over another on the higher level of organization. This also means that apposition escapes the distinction between modification and complementation (see Chapter 6). Since the difference between these two relationships is largely a matter of whose profile is inherited by the entire composite expression, the criterion is useless in cases when the profile is inherited from both elements at the same time.

Study questions

1. The words *and*, *or*, and *but* are frequent connectors signaling a relationship of coordination. In some cases, however, speakers of English need to resort to more complex constructions to express relationships between conjuncts. The table below represents several different situations related to the sentence (1c): *Floyd and Mary wrote a book on breaking things.* The two left-hand columns indicate whether Floyd and Mary are authors ("yes?" signals uncertain authorship). Can you come up with ways of coordinating the words *Floyd* and *Mary* in such a way that the resulting sentence correctly captures the authorship of the book?

Author?		Sentence
Floyd	Mary	
yes	yes	*Floyd **and** Mary wrote a book on breaking things.*
yes?	yes?	*Floyd **or** Mary wrote a book on breaking things.*
yes	no	
no	yes	
no	no	

2. Which of the following sentences in bold are instances of apposition, adverbial, relative, and complement clauses?
    a) *I'm certain **that my cat has been vaccinated this year**.*
    b) *The claim **that cats can thrive on a vegan diet** is controversial.*
    c) *I like **cats that can lie on the mat all day long**.*
    d) *House cats wild hunt birds **even when they aren't hungry**.*
3. To what extent is the clause *admitting to liking pigeons* in (10) construed as a noun? Take into account the grammatical tests mentioned in this chapter, like passivization, the capacity of being modified by adjective or adverbs, and whether the process in the matrix process accepts nouns or verbs.

    (10) ***Admitting to liking pigeons*** *surprises many people.*

References and further reading

*   Langacker, Ronald W. 2008. *Cognitive Grammar. A Basic Introduction*. New York: Oxford University Press.
    ○   Chapter 12
*   Taylor, John R. 2002. *Cognitive Grammar*. Oxford: Oxford University Press.
    ○   Section 21.5

15. Current discourse space

In real life we do not communicate by means of standalone sentences isolated from each other. Rather, we produce larger discourses consisting of several interconnected utterances. The connections between them are numerous and complex. Many of them are the subject matter of rhetoric, poetics, textology, and even literary criticism, rather than grammar. Nonetheless, some of the connections are established by means of linguistic devices that are still of interest for grammarians.

To capture the nuances of interconnections among various parts of a discourse, we will introduce the notion of **current discourse space** (CDS for short). CDS is not an actual physical space; rather, it is a mental space representing interlocutors' states of knowledge throughout an ongoing discourse. When someone is telling a story, they gradually furnish the hearer's CDS with information about events and the people taking part in them. For example, a good storyteller who wishes to tell you a story about a rescued pigeon will first set up the scene by saying (1a), then introduce relevant participants in (1b) and additional information in (1c), create a sense of conflict or drama in (1d), and finally offer a resolution in (1e). This story makes sense only when the hearers are able to interpret the string of sentences as a coherent description of a single event or a series of closely related events. Metaphorically speaking, current discourse space is where the smaller component events provided by consecutive sentences are combined into a larger story.

(1) (a) *I was riding my bicycle the other day.*
      (b) *I saw pigeons on the sidewalk next to a greengrocery.*
      (c) *And one pigeon had a broken wing.*
      (d) *A nasty stray cat wanted to kill it.*
      (e) *I shooed away the cat and took this pigeon to the vet.*

CDS is composed of smaller **discourse frames** representing the state of knowledge at any given time of unfolding discourse. The arrangement is sketched in Figure 45, where "G" stands for the ground, ">" marks the progression of discourse frames, and "…" signals that there are other frames before and after the current frame. In the story told in (1), each discourse frame embraces all the information supplied by the previous frame. As long as the hearer expects the discourse to continue, CDS also includes an anticipated frame representing the information that the hearer expects to receive. For instance, if the speaker decided to end the story at (1d), the hearer may be rather baffled, since they would expect the narrative to reach some sort of conclusion. Thus, the story is shaped not only by what the speaker has already said in previous discourse frames, but also partly by the information that the hearer does not have, but which they expect to receive in the anticipated frame. The following sections discuss a handful of lexical and grammatical devices that help interlocutors to fix nominal reference – or in other words: to keep track of relevant participants – throughout the ongoing story.

CDS

previous discourse frame > current discourse frame > anticipated discourse frame

G
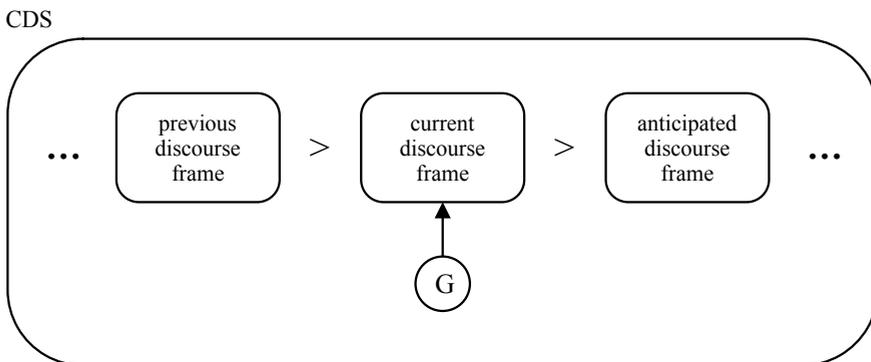
Figure 45: Current discourse space

15.1. Demonstratives

Demonstratives are one type of grammatical device whose meaning can be explained in terms of previous discourse frames. As already mentioned in Section 9.4.1, English demonstratives include *this*, *that*, *these*, and *those* and they can function as grounding elements relating a nominal to the "here and now" of the speech event (e.g. in *This ugly cat over there*). Note, however, that in (1e) *this* is used differently: it does not "point" to a thing in the immediate vicinity of the speaker, but to a thing introduced to the CDS in a previous discourse frame (A PIGEON WITH A BROKEN WING evoked in (1c)). Therefore, in (1e) *this* is not primarily a grounding element but a device

of **anaphoric reference**, i.e. it refers to something mentioned previously in the discourse.[22] In general, the main function of demonstratives is to direct the hearer's attention to some entity. In the case of anaphoric reference, the entity in question is already present in the current discourse space and the speaker "instructs" the hearer to focus their attention on this particular entity. Thus, by means of demonstratives, the speaker tries to exert a sort of **directive force** on the hearer. Plainly speaking, it is as if the speaker tried to say something like "Look here, this is the thing I want you to focus on."

The basic components of this kind of anaphoric construal are sketched in Figure 46. The horizontal arrow between the "S" and "H" is the directive force exerted by the speaker on the hearer, the slanted arrows mark the attention focused on the reference of the demonstrative, and the horizontal line marks the anaphoric reference across discourse frames. The pigeons in circles not connected by any lines signal that there are several eligible referents, i.e. there are other pigeons in the group evoked in (1b) that could be potentially referred to by the demonstrative.
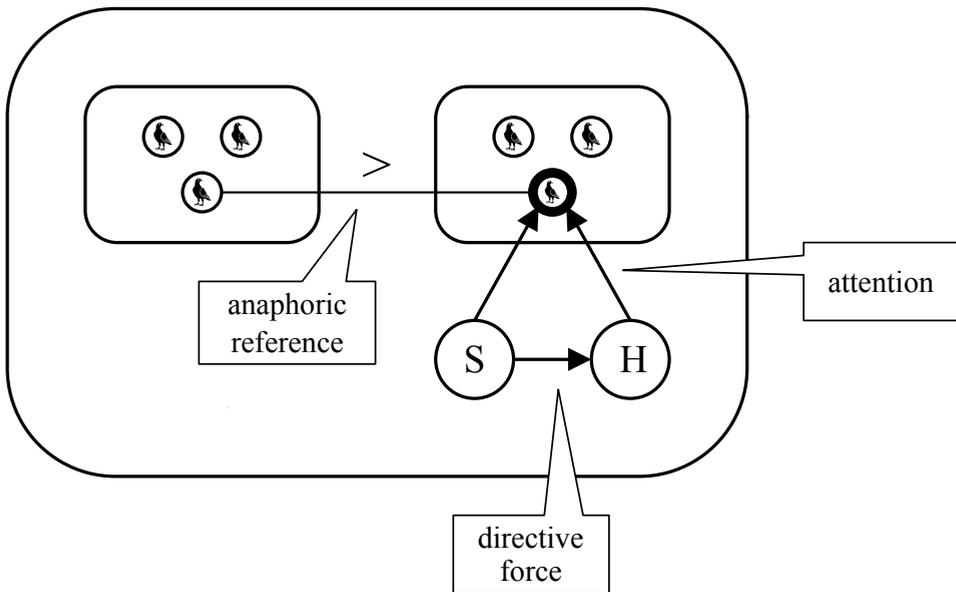

Figure 46: Anaphoric reference in *this pigeon*

[22]   It is also possible, but much less common, to use demonstratives for cataphoric reference, when they refer to something that will be mentioned in the future parts of discourse, e.g. in *I saw **this**: **an ugly stray cat** attacking a pigeon*.

This instructs the hearer to keep their attention on the injured pigeon. Note that if the demonstrative were replaced by the indefinite article (e.g. *I shooed away the cat and took a pigeon to the vet*), the sentence would suggest that for some reason the speaker decided to take a different bird to the veterinarian. Thus, the demonstrative ensures that the interlocutors keep focusing their attention on the injured bird and do not shift the focus on another pigeon in the flock. The anaphoric reference of demonstratives is facilitated by the fact that *this* profiles a highly schematic element (see Section 9.4.1) and therefore its profile is compatible with that of the word *pigeon*. The key differences between *this* and *pigeon* are 1) the degree of schematicity (the former is more schematic and the latter more specific) and 2) the presence of directive force in *this* (*pigeon* only specifies a type of bird and does not "instruct" the hearer to focus on any particular bird).

15.2. Articles

In many respects, the definite article *the* is similar to demonstratives in that it also relates a nominal to the ground or something mentioned previously. More technically speaking, it can perform both the grounding and the anaphoric function. The definite article differs from demonstratives in that 1) it does not mark the distinction between near and far referents (unlike *this*/*that*, *these*/*those*), nor singular and plural referents (unlike *this*/*these*, *that*/*those*), and 2) it lacks the directive force. The definite article does not "instruct" the hearer to look for the referent in previous discourse frames or in the ground, it merely signals that the referent is somehow identifiable. These differences are evident when you compare Figure 46 with Figure 47 presenting the construal behind *the cat* in (1e). Apart from the absence of the directive force between the interlocutors, in this case the definite article does not single out the referent from a pool of eligible candidates (compare the left-hand discourse frame in Figure 47 with its counterpart in Figure 46). Of course, this is because there is only one cat mentioned in the story as opposed to multiple pigeons evoked in (1b). Thus, the use of *the* with *cat* in (1e) is motivated not only by the fact that the feline has been mentioned previously, but also because it is the only eligible candidate in the current discourse space of the story.

It may be somewhat surprising that within Cognitive Grammar *the* is in fact a highly schematic noun, which is yet another similarity between the definite article and demonstratives. In an abstract sense, *the* profiles a thing identifiable within the respective CDS or the ground. Notice, however, that unlike demonstratives the definite article cannot stand alone as a full nominal in a larger expression:
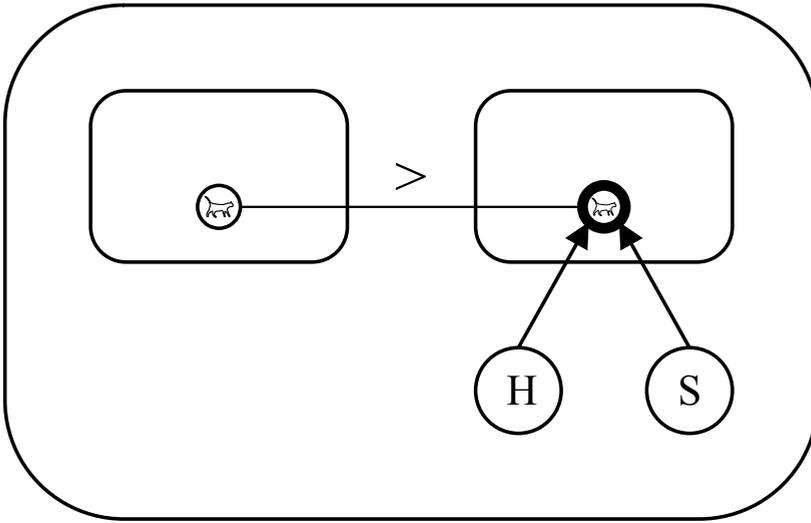
Figure 47: Anaphoric reference in *the cat*

(2) (a) *I saw this.*
     (b) **I saw the.*

The reason for this is that while *the* signals that the referent is identifiable, it does not provide any way for identifying it; therefore, it needs to be accompanied by a noun or a nominal, which provides additional information about the intended referent. Demonstratives are different in this respect in that they involve a directive force that "points" the hearer towards the referent explicitly.

What about the indefinite article *a/an*? A nominal with indefinite articles is still grounded, i.e. related in a certain way to the "here and now" of the speech event, but for some reason this referent is not precisely identified. In the case of *a nasty stray cat* in (1d), the reason is the fact that the referent has not been yet introduced into the current discourse frame. Since the feline appears in the story for the first time in (1d), the speaker does not assume that the hearer has any prior knowledge about the animal that would allow for identifying it. On the grammatical level, this "unspecified" status of the cat is signaled by the indefinite article *a/an* in (1d). The situation is slightly different for the indefinite article from *a broken wing* in (1c). One may argue that even though the wing has not been mentioned previously in the discourse, both (1c) and (1b) mention pigeons and therefore the wing can be identified by virtue of belonging to a pigeon already introduced into the CDS.[23]

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[23]   Notice that the definite article the is often used when the referent is not explicitly mentioned previously, but merely implied by other expressions in the discourse. For instance, in *I bought*

Yet if the wing is identifiable, why is the indefinite article used? Here, the use of *a/an* is explained by the fact that pigeons have two wings and the speaker does not specify which of them was broken. Thus, the exact referent of the word *wing* is not precise enough to justify the use of the definite article *the*.

15.3. Pronouns

Another group of English words that may be used to set up anaphoric reference are pronouns: *he*, *she*, *it*, *they*.[24] Contrary to what the term *pronoun* may suggest, the words are in fact nouns, because they profile things (in the technical CG sense). Their meanings are highly schematic and offer very little information about the referent: *he* and *she* tell us that the referent is animate (usually human) and has specific gender, *it* and *they* are unspecified as far as animacy is concerned, but the latter indicates that the referent is a plural mass. Since the meanings of pronouns are highly schematic, they can be elaborated by other elements of the phrase or the CDS in which they appear. This is, in fact, the basic mechanism for establishing anaphoric reference in words of this type. Thus, in (1d) *it* refers to the pigeon mentioned in the previous discourse frame. We recognize this partly because the profiles of *it* and *pigeon* are compatible – both profile things – although obviously the thing profiled by the latter is far more specific than the thing profiled by the former. This arrangement is depicted in Figure 48.

The pronoun *it* profiles a maximally schematic thing, because if used outside any context, the word specifies only that the referent is construed as a thing and provides no additional details. While the pronoun is often used for inanimate objects and non-human living organisms, it would be hard to argue that NON-HUMAN is an essential part of its meaning, since the word is routinely used to refer to human referents as well; for instance, in *It was Floyd who broke the glass* the pronoun clearly corresponds to Floyd. This maximal schematicity is the reason why *it* is used in constructions when the trajector of the process is vague, hard to specify, and abstract. One example is sentences about whether conditions like *It is raining*, where the pronoun denotes a general meteorological situation rather than a specific object. Another example is impersonal constructions like *It is widely known that…*, where *it* designates the somewhat abstract state of knowledge shared by members of a community.

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a used car, but **the** *engine is brand new* the use of the definite article before *engine* is justified by the fact that the car mentioned previously in the sentence implies the existence of the engine.

[24] Technically, *I*, *you*, and *we* are pronouns as well, but they are typically used as grounding devices and not devices of anaphoric reference. For this reason, they will be omitted from the discussion in this section.
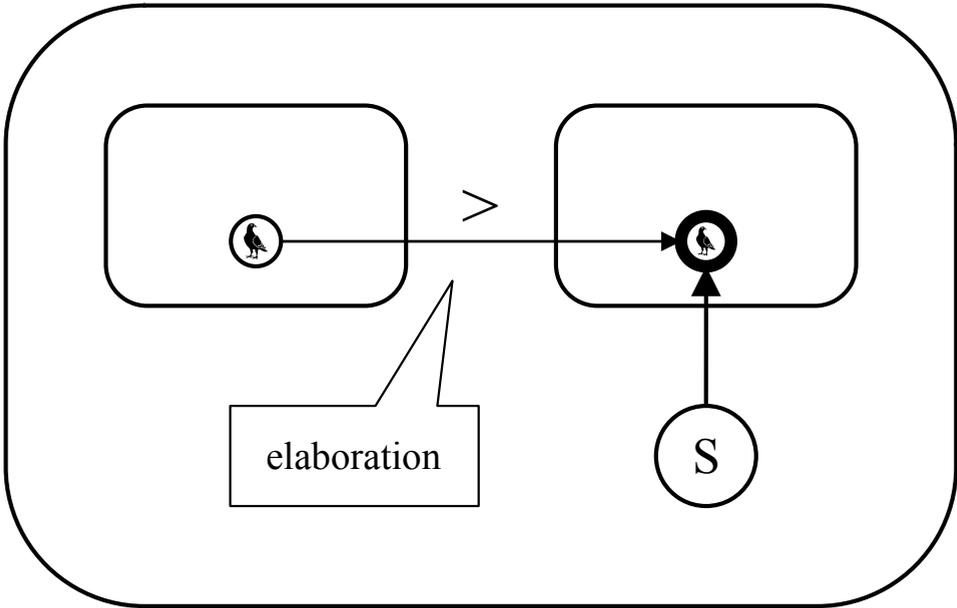
Figure 48: Anaphoric reference in *it*

This brief overview of the methods for tracking nominal reference across sentences in a discourse does not exhaust the applications of current discourse space in cognitive linguistics. In principle, the theoretical concept may be useful for anyone analyzing larger texts and discourses, as CDS helps to account for how larger arrays of meaning are gradually put together from multiple sentences. In particular, CDS and other tools of Cognitive Grammar have found their way in the field of cognitive poetics, which attempts to make inroads into the way we interpret literary text. This is one of the topics that will be explored in some detail in the next chapter.

Study questions

1. Can you tell a story similar to the one in (1) that uses demonstratives, articles, and pronouns to ensure reference to the elements mentioned in previous discourse frames?
2. Can you think of other ways of exerting a directive force on a hearer than using demonstratives (e.g. gestures)?
3. Can you think of other examples of sentences where the pronoun *it* refers to:

a) a place
b) a (human) person,
c) a specific abstract concept,
d) meteorological conditions,
e) general states of affairs in the world?

References and further reading

- Giovanelli, Marcello, and Chloe Harrison. 2018. *Cognitive Grammar in Stylistics: A Practical Guide*. London: Bloomsbury Publishing.
  ○ Sections 7.1–7.2
- Nuttall, Louise. 2018. *Mind Style and Cognitive Grammar Language and Worldview in Speculative Fiction*. London: Bloomsbury Academic. https://doi.org/10.5040/9781350010567.
  ○ Section 3.6
- Langacker, Ronald W. 2008. *Cognitive Grammar. A Basic Introduction*. New York: Oxford University Press.
  ○ Sections 9.3.3, 9.3.4, and 10.1.2

16. Practical applications

The main goal of Cognitive Grammar, outlined in the previous chapters, is the analysis of linguistic expressions. This analysis, in turn, can help us to get a better understanding of the mechanisms of underlying language usage. Nonetheless, CG can also be used outside the field of "pure" linguistics. Whether these applications can be considered to be truly "practical" depends largely on your standards of true practicality. If you demand that a "practical application" is something that makes safer cars, faster computers, or healthier food, Cognitive Grammar cannot accomplish this, simply because it is not a theory of cars, computers, and food. Since CG is a theory of language, its potential practical applications extend to the fields where language is at the heart of the matter. In the following sections we will take a closer look at four such areas.

16.1. Literature studies

Cognitive poetics (also known as cognitive stylistics) is a field of study on the intersection between literary criticism and cognitive linguistics. It attempts to discover how linguistic expressions in literary texts produce aesthetic effects and create artistic values. Cognitive poetics has been inspired by many different theories in cognitive linguistics, not only Cognitive Grammar.[25] Here, however, we will limit the discussion to the CG toolkit discussed in previous chapters.

Our case study is a short excerpt from Victor Pelevin's speculative fiction novel *The Life of Insects* (1999), translated from Russian by Andrew Bromfield. The book

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[25]   For a competent and accessible introduction, see Stockwell (2019).

is a satire on life in the post-Soviet Russia of the 1990s and plays with the motif of
an animal fable, where the characters are animals symbolizing the virtues and vices
of humans. In the novel, human characters frequently "transform" into insects, and
then back into humans. One such "transformation" is described in the passage below,
where Sam Sacker is about to start a meal in a restaurant.

> Sam raised his fork and held it over his plate, and then he noticed a young fly sitting just
> between the potato and the sauce – at first he'd taken her for a bit of dill. He slowly held out his
> hand towards her. The fly trembled, but she didn't fly away. He carefully took her between his
> finger and thumb and set her on an empty chair.
>
> The fly was very young. Her firm green skin glittered gaily in the sunlight, and Sam thought
> how precise the name 'green-bottle' was. Her limbs were covered with dark hairs and ended in
> delicate pink suckers, as if two half-open mouths waited invitingly on each of her palms, and
> her waist was so slim that she looked as though the slightest breath of wind could break her in
> two. The shyly fluttering wings, looking like two sheets of mica glimmering with all colors of the
> rainbow, were covered with a standard pattern of dark lines: no special skills in wing reading
> were required to read her simple fate in them. Her eyes were also green, with a slightly sullen
> look, and a long dark fringe fell down over them from her forehead, making the fly appear even
> younger than she was and creating an impression of a schoolgirl dressed up in an older sister's
> dress. Catching Sam's eye, she blushed slightly.
>
> 'How are you?' she asked in English, enunciating the words painstakingly. 'I'm Natasha.
> And what is your name?' (Pelevin 1999, 54–55)

The reason for the scare quotes around word *transformation* in the previous
paragraph is that it is not entirely clear when and how Natasha changes from a fly
to a human in the passage quoted above. Pelevin uses a peculiar narration technique
throughout the entire novel: at one point it is evident that a character is an insect
and a few lines later it is equally evident that the same character is a human, yet the
moment of the change is not described or even suggested anywhere in the story. Yet
if the "change" of the characters is not explicitly described, how do we even know
that the character transformed into something else?

One element of the CG answer to this question is current discourse space (see
Chapter 14). By Cognitive Grammar's lights, literary texts are discourses in that they
are large complexes of linguistic expressions linked in a certain way to create coherent
wholes. Any particular point of the text corresponds to a discourse frame and the
reader interprets the ongoing story in light of the knowledge gained from previous
discourse frames. The reader tacitly assumes that even though the plot develops, the
basic elements of the story world presented (like the laws of physics and the identity
of protagonists) remain stable. Enthusiasts of speculative fiction are generally ready to

accept that the laws and the state of affairs in the story worlds are different from those in the real world, but once the "rules" in the fictional worlds are revealed, readers tend not to revise their beliefs and rely on them in order to make sense of the events in the narrative. This is one example of the so-called **primacy effect** (cf. e.g. Jahn 1997).

Pelevin uses the primacy effect to play a trick on his readers. From the first paragraph to the first half of the second, the fly is described as a regular insect: it is a creature that flies, can sit on a plate, can be mistaken for a bit of dill, etc. As you may remember, one aspect of construal in Cognitive Grammar is perspective, and more specifically the point of view from which events and objects are observed. Even though *The Life of Insects* features the third-person narration, in the passage quoted above the fly is viewed mostly from Sam's point of view. Notice that as the description of the insect progresses, the degree of specificity (yet another dimension of construal) gradually changes. In the first paragraph the construal is fairly schematic – we learn merely that the fly could be mistaken for a bit of dill and that it trembled. This implies viewing from a considerable "distance," which is probably the way in which a casual observer looks at insects in everyday situations. Yet in the second paragraph, the construal becomes more specific: the observer notices the colors, the glitter of light, the hairs on the legs, etc. The number of details suggests a more "engaged" observation from a much closer distance. This is how we could look at a fly if we were unusually interested and wanted to learn more about it. By manipulating the specificity of the construal and creating the impression of observation from a closer distance, Pelevin creates a peculiar effect in narration: he signals Sam's growing interest in Natasha without stating this fact explicitly. The author's technique is not only more intricate than a blunt statement of Sam's thoughts, but also allows us to "get into Sam's shoes" and take a look at what the scene looks like from his point of view. Imagine that Pelevin wrote something like "Sam was intrigued by the fly and started looking at her more closely." In principle, this sentence would also give us a good idea about the protagonist's mental life, but it would be a fairly objective description from the "external" perspective of a third person narrator. Pelevin, however, briefly switches to the protagonist's "internal" perspective instead. More technically, we could say that the actual passage quoted above becomes more subjectified in that it puts elements of Sam's mental life in the onstage region as the focus of attention (see Chapter 11). This narrative technique promotes cognitive and emotional engagement in the story since it encourages readers to experience the events from the point of view of the protagonist, even though the story is told by a seemingly impartial third person narrator.

Let us return to the storyline proper. Sam is paying increasingly closer attention to Natasha, but nonetheless she is still "just a fly." To use more technical CG vocabulary, we could evoke the distinction between profile and base (see Section 3.1) and say that

she is profiled against the domain [INSECT]. It is the knowledge from this domain that the reader uses to interpret the appearance and the behavior of the unexpected "guest" on Sam's plate. Yet when we reach the sentence *Her eyes were also green, with a slightly sullen look…*, something is wrong. At first blush, the narrator simply continues the description, but the amount of detail becomes uncanny. While perhaps a very close observation could reveal the color of the insect's eyes, it would be hard to interpret their look as sullen. Either the observer is much better at reading the facial expression of flies than we are, or the human aspect of the fly starts to show and the domain [INSECT] can no longer account for all the subtleties of the construal. The depiction of Natasha as a fly crumbles completely when she is described as having *a long dark fringe* that *fell down over [the eyes] from her forehead*. In this discourse frame the reader is finally forced to revise the construal, because having a dark fringe cannot be reconciled with the image of a fly profiled against the domain [INSECT]. In order to make sense of the story, the reader needs to replace the current domain for a new one, i.e. [HUMAN]. The situation when the reader is forced to revise their understanding to the story in the light of new information is the so-called **recency effect**. Once the construal in a new domain is activated and the construal is "updated," it makes perfect sense for Natasha to wear a dress, to blush, and to speak, which of course would be totally inexplicable if the fly was still construed against the domain [INSECT].

To sum up, Pelevin employs the primacy and the recency effect to suggest a peculiar "transformation" of Natasha. Since the description of the character from the first part of the passage cannot be reconciled with the description in the second half, the reader is forced to "replace" the domain against which Natasha is construed later in the text. Yet the exact moment of the "transformation" is not mentioned explicitly, so the reader is not warned about the need for changing the domain, which creates a startling and surprising effect. Moreover, the increasing specificity of the construal suggests growing engagement in the observation of the insect on the part of Sam, which is going to be important for the plot later on. The interest is not stated explicitly by the third person narrator, but it is implied by "hijacking" Sam's perspective as the narration unfolds. This brief analysis illustrates how a careful analysis of the details of construal, like perspective and the degree of specificity, can help us get a better understanding of how the author can achieve certain artistic effects by manipulating certain elements of construals evoked in literary texts.

16.2. Translation studies

In some respects the cognitive analysis of translation is an extension of cognitive analyses of literary texts. In large part it consists of comparing the construal in the

source (original) and the target (translated) text. The similarity in construal is one aspect of the so-called **equivalence**, i.e. the overall similarity between the two texts. Similarity in construal is not the only element of equivalence. Other elements include (among other things) the "pragmatic" effect (the way in which the two texts influence the behavior of the reader), formal properties (e.g. rhythm, rhymes, alliteration, visual structure), and cultural references. However, since the details of construal are typically crucial for the artistic effect in literature, the successful recreation of construal from the source text is usually critical for successful translation.[26]

A CG analysis of translation requires meticulous investigation of the construal in both the source and the target text and such an analysis goes beyond the scope of this chapter. We can, however, take a closer look at one element of the construal in the passage from Pelevin's *The Life of Insects* discussed in the previous section. The novel is written originally in Russian. Unlike English, Russian has the so-called grammatical gender, which is a grammatical property of a noun governing the phonological shape of adjectives and pronouns in composite expressions. In Russian, grammatical gender of the subject noun phrase also dictates the phonological shape of the main verb: the shape depends on the grammatical gender of the trajector of the entire clause. The grammatical gender does not always reflect the biological gender of the noun. In fact, in Russian even inanimate objects with no natural gender are referred to by means of gendered pronouns corresponding to English *he* and *she*. As a consequence, when used in phrases and sentences, Russian adjectives, pronouns, and some verb forms reveal the grammatical gender of certain nouns. By contrast, English lacks grammatical gender, so non-human referents are usually referred to as *it* and adjectives and verbs do not have alternative gender-dependent forms.

The presence of grammatical gender may create complications for a Russian-to-English translation. In Russian the word for fly, *муха* (transliterated into English as *mukha*), is feminine. Consequently, the Russian text uses the feminine pronouns, verb and adjective forms when the fly is the antecedent of pronouns and the trajector of verbs and adjectives. Of course, the choice of the feminine form does not necessarily suggest that the insect is about to "transform" into a woman; it is simply a consequence of the grammatical rules of Russian stating that pronoun, verb and adjective forms must agree with the grammatical (and not the biological) gender of the referent. Notice, however, that in the English passage quoted in Section 16.1 the fly is referred to as "she" even in the first paragraph, where Natasha is still described as a regular insect and we have no reasons to think that she is going to "transform" into a female character later in the story. This passage is a problem

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[26]   This approach to translation studies was pioneered by Elżbieta Tabakowska (1993) and creatively developed by Tomasz Krzeszowski (2017).

for the translator. On the one hand, it seems more adequate to refer to the fly as *it*, because this is how speakers of English would probably talk about the insects in real-life situations. On the other hand, however, the moment of the "transformation" is not discernible in the text. In fact, a part of the startling artistic effect achieved by the author comes from the deliberate obscuring of the distinction between insects and humans. In the Russian text, the grammatical gender helps to create a sense of ambiguity: it is not clear whether the author uses the feminine forms because the fly is already a woman or because the word *муха* is grammatically feminine. The absence of grammatical gender in English prevents the translator from reproducing this ambiguity, so the translator, Andrew Bromfield, needed to select either *she* or *it*. Yet either choice removes the original vagueness and ambiguity by specifying the referent as either a woman or an insect.

For this reason, the use of feminine pronouns in the English translation affects the construal of the fly in a subtle way. In the Russian text, the feminine forms do not raise any suspicion about the nature of the fly and therefore the primacy effect, due to which the fly is construed as a regular insect, is stronger. In the English text, the use of *she* adds a touch of humanity to the construal from very early on and it interferes with the primacy effect: the "human" pronoun may suggest that the fly is not a regular insect. Thus, the suggestion weakens the intensity of the transition from the primacy effect (Natasha-insect) to the recency effect (Natasha-human) in the English text. In sum, even though grammatical gender is often believed to be a purely formal property of a language governing the selection of pronouns and adjective forms, it may in fact influence the construal of nominal referents. This, in turn, may influence the artistic effect that the text has on the reader. This does not mean that grammatical gender, or any other grammatical property, always has far-reaching consequences for aesthetic effects in literature and that it is always a major problem for translators. However, it does demonstrate how close connections between grammar, construal, and the narrative may create unexpected challenges for translators.

16.3. Foreign language teaching

The notion of grammar is also central for foreign language teaching (FLT). While modern approaches to FLT put less emphasis on the need to teach and learn the "rules" of grammar explicitly,[27] grammatical correctness remains one of the major goals in the process of learning, especially at higher levels of proficiency. Of course,

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[27]   Examples of such approaches include inductive learning and data-driven learning (DDL).

this is not to say that in order to effectively explain grammatical nuances, the teacher needs to familiarize the students with the entire theoretical apparatus of Cognitive Grammar. However, making a connection between grammatical behavior of words and the mental representations behind these words may be an effective way of explaining problematic aspects of a foreign language.

One such aspect is the use of the English definite and indefinite articles (see Section 15.2), especially for learners whose native language lacks words of this sort. Articles are clearly tied to the state of knowledge shared by the speaker and the hearer, represented in Cognitive Grammar as current discourse space. Obviously, the term *current discourse space* does not have to be used explicitly in an explanation meant for students, but the teacher can explain that the use of the definite article is justified when the referent of the noun is somehow known to the interlocutors. This is also the case when the referent is not mentioned explicitly, but merely implied. The indefinite article, in turn, is used in the cases when the referent is unknown to the interlocutors and the word that goes with the article is construed as a single count noun.

Another example is the grammatical behavior related to the number in nominals. At first sight, it may be confusing for a learner to hear that both sentences in (1) are grammatically correct. After all, *the company* is singular, so the verb should take the third person singular prefix *-s*, as in (1a), and (1b) should be grammatically incorrect. Nonetheless, the number expressed by a nominal is chiefly a matter of construal rather than any formal property of the noun, like the presence or absence of the plural ending *-s*. Thus, the teacher may provide several short texts in which the sentences from (1) appear and encourage the learner to consider how the company in question is depicted in various contexts. In (1a) the company is mentally depicted as a single entity, so therefore the noun is singular and requires the singular *-s* prefix on the verb. In (1b), however, it is depicted as a group of people, so the "plurality" is more prominent in the construal. Hence, the noun is plural and the singular ending cannot appear with the verb. This kind of explanation can be intuitive and does not have to be couched in highly technical terms, even though the CG notion of construal lies at its very heart.

(1) (a) *The company* **has** *decided to punish Floyd.*
    (b) *The company* **have** *decided to punish Floyd.*

The last example is the distinction between the "simple" and the "progressive" aspect in English, as illustrated in (4) from Chapter 4 and repeated here for convenience as (2). In Cognitive Grammar terms, what is at stake here is the distinction between "bounded" and "unbounded" construal of the respective

processes. It is worth bearing in mind that even though many languages have ways of expressing the contrast between "bounded" and "unbounded" processes, the distinction does not necessarily come in the form of the distinction between the "simple" and the "progressive" aspect. This means that English aspects may not have direct analogs in the native language of a learner. Traditionally, this element of English grammar is covered by laying down the explicit prohibition on using verb of "perception" and "mental action" (e.g. *to like*, *to love*, *to hate*) in the "progressive" aspect. While this prohibition may successfully prevent learners from producing ill-formed sentences like (2d), it does not explain why, for example, the "perception" verb *to listen* is standardly used in the "progressive" aspect (e.g. *I'm listening to a song*) and the verb often sounds unnatural in the "simple" aspect (e.g. *???I listen to a song*). According to the rule, the opposite is to be expected! Here, the teacher may encourage the learner to think about the difference between a single controlled action with clearly delineated beginning and end and a less controlled action with less obvious limiting points. This is, of course, a way to hint at the perfective and imperfective construal of a process without burdening the student with all the theoretical apparatus of Cognitive Grammar.

(2) (a) *I'm **eating** the apple.*
(b) **I **eat** the apple.*
(c) *I **like** apples.*
(d) **I'm **liking** apples.*

This handful of examples illustrates how the theoretical descriptions offered by CG can help the teacher to clarify potentially difficult parts of English grammar to learners. Which parts require explanations of this kind depends heavily on the language taught and the languages already familiar to the learners. However, since grammar is ultimately a reflection of the way we conceptualize the world around us, potentially every grammatical phenomenon in any language can be explained, at least partly, in terms of how we think about the things and processes that we express through language.

16.4. Artificial intelligence design

The final example of a practical application discussed in this chapter is more speculative than the previous ones. While at least some element of Cognitive Grammar has already been used in the study of literature, translation, and FLT, as of the year 2024 no artificial intelligence (AI) agent uses the model of language

proposed by CG to produce linguistic expressions. Nonetheless, it is possible to envision such an agent and, what is more, this hypothetical AI may have important advantages over its present-day cousins.

Before we continue, it is essential to introduce the distinction between a **weak** and a **strong AI**. The former is a machine or a computer program which successfully imitates the behavior of a human being, but does not really think like one. Despite impressive results in generating texts, images, video clips, music, etc., modern AIs are weak in that they do not really understand the data they work with. A program can, for example, produce a convincing poem about the end of a romantic relationship, but the software does not understand what love, a relationship, or a break-up is. Weak AIs are essentially complex pattern-matching mechanisms: they find superficial formal regularities in vast collections of data and use the regularities to construct new data (i.e. texts, images, video clips, music, etc.). However, a good human poet does not simply try to reproduce the patterns found in other poems about break-ups (although a bad poet might do exactly this). Rather, a good poet tries to express in an artistic form their own personal thoughts, feelings, and experiences. Since a weak AI has no emotional experiences of its own, it simply cannot write a poem like a human author. It is perhaps open to debate whether an AI-generated poem has an emotional and aesthetic effect comparable to the effect of a poem by a human author (many readers will answer in the affirmative), but the creative process of a weak AI is radically different from the creative process of a human.

A strong AI, in turn, is a hypothetical machine or a computer program that actually thinks like a human being instead of merely imitating human behavior. While many weak AIs are already operative, no strong AI worthy of this name have been created to date (i.e. the year 2024). In order to write a genuine poem about the end of a romantic relationship, a strong AI would have to fall in love and form a romantic relationship that ended at some point.[28] In this sense, a strong AI's poetry would be really like human poetry in terms of how it is created. Obviously, creating an effective weak AI is no mean feat, but the creation of a strong AI is much more difficult and it is not entirely clear whether it is possible in practice. In order to create a truly strong AI agent, we would need to reproduce in a machine a large number (if not all) mental processes of a human. Yet the distinction between a weak and a strong AI is not necessarily an either-or choice, but rather a matter of degree. Thus, AI agents may reproduce some aspects of human mental life more or less faithfully.

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[28]   Whether a strong AI would be actually capable of experiencing human emotions is debatable. Perhaps a strong AI's poetry would not be about human emotions, but about experiences entirely alien and incomprehensible to us?

Undoubtedly, in order to create a strong AI that uses language just like human speakers, we need to have a fairly good idea about how language functions in the human mind. As already mentioned in Chapter 1, uncovering the complexities of human language is the main goal of the theories referred to as *grammars*. For this reason, grammars are indispensable for the creation of strong AIs if the AIs are to use natural human languages. This does not mean that Cognitive Grammar is the only available candidate for implementing in an AI agent and any well developed and robust grammatical theory is potentially usable. Yet Cognitive Grammar appears to be at least a viable candidate and if it can be successfully implemented into an artificial agent, there is a good chance that the machine will be considered stronger than weak AIs based on superficial pattern matching.

Study questions

1. The imagery in Wallace Stevens's poem "Anecdote of the Jar" describes the effect of placing a jar in the wilderness, as perceived by the lyrical speaker. Which elements of Cognitive Grammar can be used to describe the construal evoked in the poem?

    Anecdote of the Jar

    I placed a jar in Tennessee,
    And round it was, upon a hill.
    It made the slovenly wilderness
    Surround that hill.

    The wilderness rose up to it,
    And sprawled around, no longer wild.
    The jar was round upon the ground
    And tall and of a port in air.

    It took dominion everywhere.
    The jar was gray and bare.
    It did not give of bird or bush,
    Like nothing else in Tennessee.

2. Which elements of the imagery from "Anecdote of the Jar" should be preserved in a literary translation? If you know a language other than English, try to translate the poem so that the important elements are preserved.
3. Which aspects of the grammar of English (or other language) other than the ones mentioned in the chapter can be explained to learners in terms of construal?

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  ○ Section 8

17. A metatheory of Cognitive Grammar

When we think about the creation of a strong AI, discussed briefly in Section 16.4, it is quite obvious that the strongest AI would be one that recreates actual mechanisms of language production operating in the human mind. Therefore, the best theory to use for this purpose is a grammar that offers a true account of these mechanisms. In principle, this conclusion in correct. In practice, however, the matter is somewhat more complicated. The sticking point is the notion of truth in the context of scientific and scholarly theories. Two crucial questions are: "What does it take for a theory to be true?" and "How can we tell that a theory is true?" The questions may look similar, but in fact they inquire about very different things. In this final chapter we will take a quick look at what could be called a metatheory of grammar, or to put it differently: a theory about the theory of grammar. By doing this, we will move away from pure linguistics and take a short excursion into the philosophy of science.

17.1. Truth and empirical adequacy in Cognitive Grammar

Most modern philosophers of science agree that formulating a scientific theory consists of making a model of the object under investigation. For example, a theory of the atom is essentially a model of the atom expressed by means of mathematical formulas, descriptions in natural languages, drawings, etc. Models may also be physical objects, like a cluster of colorful balls representing an atomic nucleus, with smaller balls representing electrons around the nucleus. Other models are mental objects, like the concept of an atom in the head of a physicist. Regardless of whether models are mathematical, physical, or mental entities, all of them are meant to be representations of real-world phenomena.

If theories are models and models are representations, a scientific theory can be said to be **true** when the elements featured in the model have counterparts in the real world. Thus, the theory of the atom, according to which the atom is built of a nucleus and electrons with certain properties, is true when there are things like atoms built of nuclei and electrons and the elements have the properties described in the theory. Otherwise, the theory is false. The problem with atoms and many other objects described by modern science is that the objects are unobservable, i.e. they cannot be perceived directly with unaided senses, and oftentimes they cannot be observed in any circumstances, no matter how many technological aids we use. The only way to learn anything about unobservables is to make guesses about them from the behavior of observable phenomena. For instance, modern physicists accept the atomic theory, even though they have never seen an atom, because the theory is the best explanation of a great number of observable phenomena. It is, however, far from obvious whether the fact that a particular theory correctly accounting for observable phenomena means that a theory is true. For a theory to be true, it needs to correctly account for both the observable and the unobservable. Theories that correctly account for observables are said to be **empirically adequate**. However, the fact that a theory is empirically adequate does not automatically mean that it correctly accounts for the unobservables. What is worse is that since unobservable phenomena cannot be observed by definition, it is impossible to check directly whether what the theory says about unobservables is true. In short, this means that the empirical adequacy of a theory does not automatically entail that the theory is true.

There are two radical solutions to the problem of truth of theories. One philosophical position is **realism**, which states that theories can be true or false (depending on whether the entities featured in theories have real-world counterparts) and that the goal of science is to propose true theories, i.e. theories which correctly account for both observables and unobservables. Another position is **instrumentalism**, which states that theories are "useful fictions" for making predictions about observables and that the goal of science is to propose empirically adequate theories, i.e. theories which correctly account for observables only. Strictly speaking, instrumentalists do not consider the unobservable entities featured in theories as false, since the entities are just tools for describing observables and tools can be neither true, nor false. For instance, a hammer is not "true" or "false" in any meaningful sense of these words. We can, however, say that a hammer is useful, precise, well designed for a certain task, etc.

The above summaries of realism and instrumentalism are highly simplified, and philosophers of science have more nuanced and complex views on the relationship between theory and the reality that the theory is meant to describe. One difficulty for instrumentalism is that most scientists claim that their theories are not designed

as mere tools for making predictions and the theories can be true or false. This suggests that strict instrumentalism does not correctly describe the work of actual scientists. Philosophers siding with realism, on the other hand, recognize that empirical adequacy does not automatically entail the truth about unobservables and they try to provide additional arguments for the claim that successful scientific theories should be true overall. As one remedy to these difficulties, Bas van Fraassen (1980; 2008) proposes another philosophical position called **structural empiricism,** located somewhere between the two extremes. Structural empiricists agree with realists that theories can be true or false, i.e. theoretical entities may or may not have real-world counterparts, but they agree with instrumentalists in that the goal of science is to propose empirically adequate, rather than true, theories.[29]

Despite the fact that philosophers of science are more interested in physics, chemistry, and biology, many of their conclusions are directly applicable to theories in linguistics. As already mentioned in Chapter 1, Cognitive Grammar, and virtually all other grammars for that matter, aim at providing models of speakers' linguistic competence. The figures used throughout this book are essentially visual representations of conceptual processes happening in speakers' minds that allow them to produce linguistic expressions. Therefore, in an important sense, the figures are miniature models that, together with other models of linguistic phenomena, constitute the theory known as Cognitive Grammar. This strongly suggests that all the philosophical questions about truth, empirical adequacy, the relationship between models and reality, etc. are as valid in the context of linguistics as they are in the context of physics.

For example, Cognitive Grammar postulates unobservable phenomena which are meant to explain observable phenomena, just like the atomic theory in physics. The observables in linguistics include the actual expressions produced by speakers and intuitive judgments about their acceptability and well-formedness (marked by means of the signs *, ???, etc. throughout the literature). These phenomena can be observed directly in the form of utterances spoken out loud or written down. The concepts like DOMAIN, SCANNING, SUBJECTIFICATION, CURRENT DISCOURSE SPACE, etc. are unobservable, because we cannot perceive them directly and we learn about them from the theoretical descriptions meant to explain observables. The status and the role of these unobservable theoretical phenomena can be discussed in the context of the philosophical debate between realism and instrumentalism.

- A realist cognitive grammarian may argue that theoretical concepts like DOMAIN, SCANNING, SUBJECTIFICATION, CURRENT DISCOURSE SPACE, etc. may have exact

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[29] As Lukáš Zámečník aptly puts it, a Fraassenian empiricist does not claim "that science is merely a tool (…) but that we can never say that it is more than just a tool" (2016, 58).

counterparts in speakers' minds. A successful theory of grammar should offer true models, i.e. models that correctly depict both the observable and the unobservable grammatical phenomena.

- An instrumentalist cognitive grammarian may argue that theoretical concepts are just "useful fictions" that help to predict speakers' intuitions about the acceptability and well-formedness of expressions and that they do not have exact counterparts in speakers' minds. A successful theory of grammar should offer empirically adequate models, i.e. models that correctly account for observable grammatical phenomena.
- A structural empiricist cognitive grammarian may argue that theoretical concepts may have exact counterparts in speakers' minds, but that a successful theory of grammar should offer empirically adequate models, i.e. models that correctly account for observable grammatical phenomena.

These kinds of deliberations are not only purely philosophical speculations but have some consequences for actual research practice. For example, one objection frequently raised against Cognitive Grammar (and cognitive linguistics in general) is that it relies too much on "mysterious" and "nebulous" notions, concepts, and mental phenomena that cannot be observed directly in any way. This supposedly makes CG "unscientific." Cognitive grammarians may respond that the mental phenomena employed in their theory have the same role as the concept ATOM, NUCLEUS, and ELECTRON in physics: they are unobservables proposed in order to explain observable phenomena. Whether linguists believe that these concepts are true or serve as "useful fictions" depends on whether the linguist leans towards realism, instrumentalism, structural empiricism, or some other philosophical position. Yet regardless of philosophical inclination, the critique stating that concepts used in Cognitive Grammar cannot be observed misses the mark, since virtually all scientific theories feature concepts corresponding to unobservables. If one wishes to reject theories postulating unobservable entities, one would need to reject most science altogether.

17.2. Typologies and definitions

It would be hard to deny that the main goal of science in to offer us knowledge about the world. However, it is surprisingly difficult to specify what actually counts as scientific knowledge. When scientists do their research what exactly do they expect to achieve? A popular belief is that a big part of research is providing definitions of previously unknown phenomena (like definition of momentum or gravity in physics), as well as classifications or typologies of various sorts (like taxonomies of

living organisms in biology). Yet another important part of science is to offer models of phenomena under investigations. Models are important in science, because they can help reveal the cause-and-effect relations between various phenomena. While defining, classifying, and modeling are not mutually exclusive in science, different researchers tend to prioritize these actions differently. In Cognitive Grammar providing models of speakers' linguistic competence tends to be more important than proposing cut-and-dry definitions and typologies. While definitions of theoretical terms and typologies of various grammatical phenomena are certainly useful, but they are proposed only after the relevant models are established. The view that theoretical models are established before definitions and classifications is compatible with John Dupré's promiscuous realism (e.g. Dupré 1993). This philosophical position states that the similarities and differences between phenomena captured by typologies exist in reality, but there is no one "correct" way of grouping phenomena according to the similarities and differences. Instead, the criteria that we choose to focus while classifying phenomena are dictated by the theories that we accept beforehand.

Let us take grammatical classes, discussed in Chapter 3, as examples. The simplest CG definition of a noun could be something like "Nouns profile things." Notice that this definition is quite useless for someone unfamiliar with the theoretical term *profiling*. Moreover, in order to understand what profiling is, one needs to know a bit about construal and the general tenets of Cognitive Grammar. Thus, this definition only makes sense when the relevant parts of the theory is already in place. The same is true for CG typologies, like the classification of nouns and verbs in Chapter 4. The two basic types are count nouns, whose boundaries are within the immediate scope of construal, and mass nouns, whose boundaries are outside the immediate scope. Notice that this distinction relies heavily on the theoretical terms *immediate scope* and (again) *construal*, so it would make little sense for someone unfamiliar with these elements of Cognitive Grammar. Therefore, theory comes before classifications once again. In sum, cognitive grammarians do not make theory by proposing definitions and typologies; on the contrary, they propose models of how language functions in the mind and only later they use the models to offer definitions and typologies.

One, perhaps somewhat surprising, consequence of the fact that definitions and typologies rely so heavily on pre-existing theories is there is no single "correct" definition and classification of nouns and verbs – there are only definitions and typologies that make sense within particular theoretical frameworks in which they are formulated.[30] For this reason, it is rather futile to argue about one "correct"

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[30] This is, in fact, true for natural sciences as well. For example, a biologist would argue that oak trees should be placed in one category with daisies, because both of them are flowering plants (angiosperms), rather than with pines, which are "unenclosed seeds" plants (gymnosperms). The theoretical rationale behind this classification relies on the knowledge about the evolution-

definition or classification of (for instance) nouns and verbs. Instead, it is more fruitful to choose one theory on the basis of its empirical adequacy (or truth), simplicity, elegance, or other criteria, and embrace the definitions and typologies based on this theory. Obviously, this is not to say that defining and classifying have no place in CG, but these activities are more useful for organizing pre-existing theoretical knowledge and they are not the most important end products of research.

17.3. The role of idealizations

Language is a very complicated phenomenon and a comprehensive description of any utterance produced in real life requires accounting for many different factors. For instance, when I say (1) to a stranger in the street, I wish to learn something and I am trying to attract the stranger's attention. Yet I want to do it in a polite way: I know that there are certain social and cultural norms regulating the way strangers should be addressed. These factors influence the way I formulate my request for information, but they are not, strictly speaking, parts of English grammar. For this reason, they are typically omitted in grammatical analyses. Models that do not fully describe all the details of real-life phenomena and focus on some selected aspects only are **idealizations**.

(1) *Excuse me, do you know how to get to the railway station?*

Scientists resort to idealizations for a number of reasons. Phenomena in the real world are oftentimes complicated and "messy," so idealizations help to "weed out" the undesired elements from the picture in order to clarify and simplify models. In real-life circumstances, (2) is produced for a specific reason by a specific speaker and addressed to a specific hearer. However, if we only wish to analyze the energy flow (see Section 13.1) in the construal behind (2), we do not necessarily need to know the identity of the interlocutors or the details of the usage event. These details can be left out of the picture to keep the model of the energy flow simple. Idealizations also help to make models more general. We could, in principle, provide a very detailed description of the circumstances in which (2) is produced, including the information about the interlocutors, the apple, the communicative intentions of

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ary history of the species and the details of their reproduction. Alternatively, oak trees could be grouped together with pines, since they are both trees according to our everyday non-expert "theories" about what trees are like. Which classification we choose at a given moment depends on whether we are interested in the evolutionary history of the plants on their superficial similarities.

the speaker, the reaction of the hearer, etc., but this analysis would be valid only for one particular situation in which (2) is said. An analysis of this sort would be rather unattractive for most linguists, since researchers are usually more interested in more general knowledge about language. In order to increase the generality of the description, researchers may deliberately ignore the differences among various situations in which (2) could be possibly produced and focus on what is common for all of these situations. The resulting analysis is idealized, since it does not take into account the all details of each of these events, but it is also fairly general since it tells us something interesting about many different usage events.

(2) *Jack brought an apple for Jill.*

Idealizations are essential parts of what the philosopher Nancy Cartwright (1999) calls **nomological machines**. Contrary to what the term suggests, a nomological machine is not necessarily a physical object. Rather, it is a special and purposeful arrangement of some sort that helps researchers discover regularities in phenomena under investigation. In natural sciences, a nomological machine may be a special setup in a laboratory used for conducting experiments under carefully controlled conditions. The conditions are artificial and even "idealized" in the sense that they cannot be found or reproduced precisely enough "in the wild," outside the laboratory. Cognitive grammarians (and grammarians in general) do not normally work in laboratories, but they also make use of nomological machines in Cartwright's sense. One of them is the practice of constructing artificial sentences that may have never been produced in real-life conditions. For example, all instances of ill-formed and dubious expressions used throughout this book (marked with * and ???) are constructed specifically to demonstrate the defectiveness of certain construals. Defective sentences can tell us much about grammar, but we can hardly expect competent speakers to produce them in natural circumstances; after all, we all do our best to speak as correctly as possible. However, even well-formed expressions are often constructed specifically for the purpose of linguistic analysis, for example, the much discussed *Floyd broke the glass*. The expression is constructed "artificially" by linguists as an example of a typical transitive sentence, but it is perfectly possible that it has been produced in real-life conditions at some point in the history of humankind.

The way in which nomological machines are used in science can help us to make sense of the controversial practice of using constructed expressions as data for linguistic analysis. Many linguists argue against the use of this kind of data and prefer to study "real" language, used by real speakers in real circumstances. However, the critics of constructed expressions tend to ignore the fact that much of valuable scientific research is carried out with the use a nomological machine under

"artificial" conditions and yet this does not undermine the value of the research. Of course, grammarians do not deny that constructed expressions are "artificial," but they claim that the artificial and idealized character of their analyses does not invalidate their research. After all, as we have seen throughout this book, it is possible to learn something about language (for instance) from comparing well-formed and ill-formed sentences built as a part of an "artificial" nomological machine.

There are good reasons to believe that idealizations are ingrained into the very core of linguistics to a much greater extent than the proponents of studying "real" languages would be happy to admit. If we accept the idea that a language is constituted by words and rules for putting the words together into larger expressions, it would be, in fact, difficult to find anything like language in the real-life world of observable phenomena. Languages do not exist "in the wild" like rocks, clouds, and elephants. No matter how hard you look, you will never be able to find any language in the world of physical objects. Thus, what most linguists refer to as *language* is in fact an idealized theoretical entity meant to capture some real-world speech patterns in a community of speakers. Langacker captures this point aptly, when he writes about what language is:

> Objectively, there is no single entity that can be so identified. There are simply lots of people – hundreds of millions of them – who talk in roughly similar ways (sometimes very roughly indeed). Strictly speaking, each person has a distinct linguistic system (or "idiolect"). These individual systems do exhibit a strong family resemblance, however, and like the members of an extended family, some systems resemble one other quite closely, others more distantly. On this basis we can group them into "dialects" of various sizes and degrees of cohesiveness. Yet we can only do this by abstracting away from individual differences and imposing artificial boundaries. If thought of as a clearly delimited entity with definite boundaries, neither a dialect nor a language exists in the wild, but only as a mental construction – the product of idealization, reification, and metaphor. (Langacker 2008, 217)

Study questions

1. As already mentioned, the theoretical concepts DOMAIN, SCANNING, SUBJECTIFICATION, and CURRENT DISCOURSE SPACE refer to unobservable entities proposed by Cognitive Grammar. Which other theoretical concepts discussed in the book refer to unobservables?

2. Propose several ways of classifying the words in the list below into two or more categories. Explain which similarities and differences between the words you used to make the typology.
to dig, a daffodil, to bake, a dog, big, to bite, to bargain, dim, descriptive, to disrupt

3. When we talk about "the English language," or any other natural language for that matter, we talk about an idealized fictional object rather than a concrete observable entity. Why do people insist of talking about and thinking in terms of such "useful fictions" in the first place?

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This textbook provides a clear, step-by-step guide to Ronald Langacker's Cognitive Grammar (CG); a theory that does not view language as a set of arbitrary rules, but as an extension of human cognition. The volume offers a concise, but comprehensive introduction to CG, guiding the reader from the basic assumptions behind the theory, through case studies of increasingly complex linguistic structures, to a discussion on practical applications beyond purely grammatical analysis.

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