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Cognitive Linguistics

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Introduction: what is cognitive linguistics?

Cognitive linguistics is taken here to refer to the approach to the study of language that began to emerge in the 1970s and has been increasingly active since the 1980s (now endowed with an international society with biennial conferences and a journal, *Cognitive Linguistics*). A quarter century later, a vast amount of research has been generated under the name of cognitive linguistics. Most of the research has focused on semantics, but a significant proportion also is devoted to syntax and morphology, and there has been cognitive linguistic research into other areas of linguistics such as language acquisition, phonology and historical linguistics. This book can only outline the basic principles of the cognitive linguistic approach and some of its more important results and implications for the study of language. In this chapter, we briefly describe the major hypotheses of cognitive linguistics (as we see them), and how we will develop these hypotheses in the rest of the book.

We see three major hypotheses as guiding the cognitive linguistic approach to language:

- language is not an autonomous cognitive faculty
- grammar is conceptualization
- knowledge of language emerges from language use

These three hypotheses represent a response by the pioneering figures in cognitive linguistics to the dominant approaches to syntax and semantics at the time, namely generative grammar and truth-conditional (logical) semantics. The first principle is opposed to generative grammar's well-known hypothesis that language is an autonomous (indeed, innate) cognitive faculty or module, separated from nonlinguistic cognitive abilities. The second principle is opposed to truth-conditional semantics, in which a semantic metalanguage is evaluated in terms of truth and falsity relative to the world (or, more precisely, a model of the world). The third principle is opposed to reductionist tendencies in both generative grammar and truth-conditional semantics, in which maximally abstract and general representations of grammatical form and meaning are sought and many grammatical and semantic phenomena are assigned to the 'periphery'.

Generative grammar and truth-conditional semantics are of course still vigorous research paradigms today, and so cognitive linguists continue to present arguments for their basic hypotheses as well as exploring more specific empirical questions of syntax and semantics within the cognitive linguistic paradigm. Some of these arguments will be presented in the course of this book. Here we describe in somewhat more detail the content of these three hypotheses and how they are manifested in subsequent chapters.

The first hypothesis is that language is not an autonomous cognitive faculty. The basic corollaries of this hypothesis are that the representation of linguistic knowledge is essentially the same as the representation of other conceptual structures, and that the processes in which that knowledge is used are not fundamentally different from cognitive abilities that human beings use outside the domain of language.

The first corollary is essentially that linguistic knowledge – knowledge of meaning and form – is basically conceptual structure. It is probably not difficult to accept the hypothesis that semantic representation is basically conceptual (though what that entails is a matter of debate; see below). But cognitive linguists argue that syntactic, morphological and phonological representation is also basically conceptual. This might appear counterintuitive at first: sounds are physical entities, and ultimately so are utterances and their formal structure. But sounds and utterances must be comprehended and produced, and both of those processes involve the mind. Sounds and utterances are the input and output of cognitive processes that govern speaking and understanding.

The second corollary is that the cognitive processes that govern language use, in particular the construction and communication of meaning by language, are in principle the same as other cognitive abilities. That is, the organization and retrieval of linguistic knowledge is not significantly different from the organization and retrieval of other knowledge in the mind, and the cognitive abilities that we apply to speaking and understanding language are not significantly different from those applied to other cognitive tasks, such as visual perception, reasoning or motor activity. Language is a distinct human cognitive ability, to be sure. From a cognitive perspective, language is the real-time perception and production of a temporal sequence of discrete, structured symbolic units. This particular configuration of cognitive abilities is probably unique to language, but the component cognitive skills required are not.

This position is sometimes taken as a denial of an innate human capacity for language. This is not the case; it is only a denial of an autonomous, special-purpose innate human capacity for language. It is of course reasonable to assume that there is a significant innate component to general human cognitive abilities, and that some of those innate properties give rise to human linguistic abilities that no other

species apparently has. However, innateness of cognitive abilities has not been a chief concern of cognitive linguists, who are more concerned with demonstrating the role of general cognitive abilities in language.

The hypothesis that language is not an autonomous cognitive faculty has had two major implications for cognitive linguistic research. Much cognitive linguistic research has been devoted to elucidating conceptual structure and cognitive abilities as they are seen to apply to language, in the effort to demonstrate that language can be adequately modeled using just these general conceptual structures and cognitive abilities. Part I of this book is devoted to explicating cognitive linguistic models of cognitive structure and abilities (see also chapter 11).

Second, cognitive linguists appeal at least in principle to models in cognitive psychology, in particular models of memory, perception, attention and categorization. Psychological models of memory have inspired linguistic models of the organization of linguistic knowledge into frames/domains (chapter 2), and grammatical knowledge in networks linked by taxonomic and other relations (see chapters 10–11 in Part III). Psychological models of attention and perception, especially Gestalt psychology, have led to the explication of many conceptualization processes in semantics (chapter 3, and see also the next paragraph). Finally, psychological models of categorization, in particular prototypes and graded centrality, and more recent models of category structure, have had perhaps the greatest influence on both semantic and grammatical category analysis in cognitive linguistics (chapter 3; see, e.g., Lakoff 1987, Taylor 1989[1997]).

The second major hypothesis of the cognitive linguistic approach is embodied in Langacker's slogan 'grammar is conceptualization.' This slogan refers to a more specific hypothesis about conceptual structure, namely that conceptual structure cannot be reduced to a simple truth-conditional correspondence with the world. A major aspect of human cognitive ability is the conceptualization of the experience to be communicated (and also the conceptualization of the linguistic knowledge we possess). A major theme of the chapters in Part I of this book is that all aspects of conceptual structure are subject to construal, including the structure of categories (chapter 4) and the organization of knowledge (i.e., conceptual structures; chapter 2). In particular, it is argued that grammatical inflections and grammatical constructions play a major role in construing the experience to be communicated in specific ways (chapter 3). Part II of this book also explores and defends the conceptualization hypothesis for a wide range of lexical semantic phenomena, including topics widely discussed in cognitive linguistics (polysemy and metaphor) and lexical semantic topics that have not generally been examined by cognitive linguists (namely lexical relations such as antonymy, meronomy and hyponymy).

The third major hypothesis of the cognitive linguistic approach is that knowledge of language emerges from language use. That is, categories and structures

in semantics, syntax, morphology and phonology are built up from our cognition of specific utterances on specific occasions of use. This inductive process of abstraction and schematization does not lose the conventionalized subtleties and differences found among even highly specific grammatical constructions and word meanings.

As we noted above, this hypothesis is a response to approaches to syntax and semantics in which highly general and abstract schemas and categories, sometimes claimed to be innately given, are assumed to govern the organization of linguistic knowledge, and apparently idiosyncratic or anomalous patterns are relegated to the periphery. Instead, cognitive linguists argue that the detailed analysis of subtle variations in syntactic behavior and semantic interpretation give rise to a different model of grammatical representation that accommodates idiosyncratic as well as highly general patterns of linguistic behavior (see, e.g., the arguments in chapter 9). In semantics, this model is manifested in Fillmore's semantics of understanding (chapter 2), and Cruse's dynamic construal approach to categorization (chapter 4 and Part II; see also Croft 2000:99–114). In syntax, this hypothesis has given rise directly to construction grammar as a new theory of syntax, and the usage-based model, developed in greatest detail for morphology and phonology. These models of syntax and morphology are described in Part III of this book.

PART I

A conceptual approach to linguistic analysis

The need for another means for organizing concepts has been felt by researchers in cognitive psychology and artificial intelligence as well as in various branches of linguistics, and has led to a variety of similar proposals, each typically with its own name. Among these names are: frame, schema, script, global pattern, pseudo-text, cognitive model, experiential gestalt, base, scene (Fillmore 1985:223, n. 4). The most influential version of this proposal in cognitive linguistics has been the model of **frame semantics** developed by Fillmore. We present Fillmore's theory and arguments in this section, and turn to extensions of Fillmore's ideas by other cognitive linguists in later sections.[2]

Fillmore views frames not as an additional means for organizing concepts, but as a fundamental rethinking of the goals of linguistic semantics. Fillmore describes his frame semantic model as a model of the semantics of **understanding**, in contrast to a truth-conditional semantics: the full, rich understanding that a speaker intends to convey in a text and that a hearer constructs for that text. Fillmore argues that in the analysis of linguistic meaning, understanding is the primary data; truth-value judgments and judgments of semantic relations such as synonymy and implication are derivative and theory-driven (Fillmore 1985:235). Fillmore's frame semantics brings linguistic semantics back to that primary data and does not exclude any of it from consideration.

Fillmore uses a tool metaphor to describe the understanding process (Fillmore 1982a:112): a speaker produces words and constructions in a text as tools for a particular activity, namely to evoke a particular understanding; the hearer's task is to figure out the activity those tools were intended for, namely to invoke that understanding. That is, words and constructions evoke an understanding, or more specifically a frame; a hearer invokes a frame upon hearing an utterance in order to understand it.

Fillmore uses a wide range of examples to demonstrate that there are significant phenomena in linguistic semantics that cannot easily be captured in a model of structural semantics, semantic features and/or truth-conditional semantics. We survey his arguments here.

The analysis of semantic features is often justified on the basis of lexical sets that appear to be analyzable in terms of a simple set of features. For example, the lexical set in (1) can be analyzed in terms of the features [MALE/FEMALE], [ADULT/YOUNG], and [UNMARRIED]:

(1)

[MALE]	[FEMALE]	
MAN	WOMAN	[ADULT]
BOY	GIRL	[YOUNG]
BACHELOR	SPINSTER	[UNMARRIED]

[2] The basic sources for Fillmore's ideas are Fillmore 1975, 1977 (an expanded version of the first paper), 1982a, 1985, 1986. Unfortunately all of these are difficult to access.

Yet our understanding of these concepts is more complex than this paradigm of feature constrasts implies. The relation between *man/boy* and *woman/girl* is not the same: for many people, the term *girl* is used for female humans at a significantly higher age than the term *boy* is used for male humans (Fillmore 1982a:126). Moreover, the attitudes towards the sexes that this linguistic behavior is assumed to evoke has led to changes in the relationship and hypercorrection such that the term *woman* is attested as being applied even to an eight-year-old girl (ibid., 127). In a frame semantic analysis, *man*, *boy*, *woman* and *girl* evoke frames that include not just the biological sexual distinction but also differences in attitudes and behavior towards the sexes that would explain the traditional asymmetry in the use of *boy/girl* and the more recent change in the use of *woman*, including its hypercorrective use. Likewise, the difference between our understanding of *bachelor* and our understanding of *spinster* involves much more than a simple feature [MALE/FEMALE] (ibid., 131).

Many lexical contrasts contain semantic asymmetries that cannot be captured by features (except in an ad hoc fashion), but lend themselves easily to a frame semantic account. For example, the opposing terms used for the vertical extent of an erect human being are *tall* and *short*, for vertical distance from a bottom baseline (e.g. a branch of a tree) they are *high* and *low*, but for the vertical dimension of a building they are *tall* and *low* (Fillmore 1977a:71). It would be difficult if not impossible to come up with a unitary feature definition of *tall* that captured its different contexts of use from *high*, and did the same for *short* vs. *low*. Instead, one can simply describe the frames for humans, buildings and other objects, and specify which words are used for vertical extent or distance in that frame.

Similarly, no simple unitary definitions would capture the contrast between the adjectives *live* and *alive* given in (2)–(4) (Fillmore 1977a:76–77):

(2) a. Those are live lobsters.
b. Those lobsters are alive.

(3) a. Her manner is very alive.
b. She has a very alive manner.

(4) a. His performance was live.
b. He gave a live performance.

Moreover, one cannot define the features in terms of applicability to a semantic class, such that the sense illustrated in (2a–b) applies to living things; this would give an incorrect understanding to the theatre advertizing *live naked girls* than the one intended (presumably, as opposed to naked girls on a film screen, not dead naked girls; ibid.). In a frame semantic analysis, *live* and *alive* are simply associated in different ways to three different frames: life in (2), personality in (3), and mode of performance in (4). In other cases, there are outright lexical splits, such as *brother/brothers* and *brother/brethren*, which represent a split in frames

including different plural forms; a unitary definition of *brother* would miss the frame contrast (ibid., 76).

Fillmore notes that his frame semantic model shares significant properties with lexical (semantic) field theory (Fillmore 1985:225–26; 1992:76–77). Lexical field theory groups together words that are associated in experience, not unlike frame semantics. However, lexical field theory differs from frame semantics in that words are defined relative to other words in the same lexical field, whereas in frame semantics, words are defined directly with respect to the frame. For example, in lexical field theory, one would observe that *large* in the field of sizes of packages of soapflakes is in contrast with *jumbo*, *economy giant* and *family size* and hence describes the smallest size in the field, unlike uses of *large* in other lexical fields (Fillmore 1985:227).

In frame semantics, the same observation can easily be captured: *large* labels the smallest size in the SOAPFLAKES frame. But lexical field theory predicts that the meaning of a word in a field can only be defined in contrast to neighboring words in the field. Lexical field theory has difficulties if there are no neighboring words, or a speaker does not know the neighboring words: it predicts that the term has a different meaning. Fillmore notes that while German has a word for the sides of a right angle triangle other than the *Hypotenuse*, namely *Kathete*, most English speakers do not have such a word (ibid., 228–29). Yet the understanding of English *hypotenuse* and German *Hypotenuse* is the same, provided the speaker understands what a right angle triangle is. This is not a problem in frame semantics, where the word concept is linked directly to the frame, in this case the RIGHT ANGLE TRIANGLE frame.

Another argument in favor of a frame-based approach to lexical semantics are words whose corresponding concepts inherently refer to other concepts extrinsic to the concept denoted by the word. Some word concepts refer to a prior history of the entity denoted. A *scar* is not just a feature of the surface of someone's skin, but the healing state of a wound; a *widow* is a woman who was once married but whose husband has died (Fillmore 1977a:73). Other word concepts, especially for properties and actions, cannot be understood without understanding something about the participant in the action or possessor of the properties: one cannot understand *gallop* without knowing about the body of a horse, or *hungry* without understanding the physiology of living things (ibid., 73–74). This is true of object concepts as well: *lap* cannot be understood except in reference to a person's posture and the function of one's lap in supporting another object (ibid.).

Another clear class of examples that requires reference to extrinsic entities are deictic expressions that evoke the speech act situation (Fillmore 1982a:117). For example, the past tense situates an event in a point or interval or time relative to the speech act situation. The speech act situation, including its time of occurrence,

functions as the frame against which past time reference is profiled. Likewise, all other deictic words and inflections, such as person deixis (*I*, *you*, *he/she/it*, *we*, *they* and person-based agreement inflections) and spatial deixis (*this*, *that*, *here*, *there*), evoke the speech act situation. Other types of grammatical words and inflections also have meanings evoking the speech act situation. For example, the definite articles *the* and *a* define the identity of the noun referent relative to the mutual knowledge of speaker and hearer (*the* basically indicates mutually known, *a* not mutually known, in most contexts). The meanings of *the* and *a* evoke the speech act situation because they make reference to the mental states of speaker and hearer (see also §3.4).

Above all, many word concepts cannot be understood apart from the intentions of the participants or the social and cultural institutions and behavior in which the action, state or thing is situated. For example, the concept VEGETARIAN only makes sense in the frame of a culture in which meat-eating is common; the concepts STRIKE or BORROW can only be understood in the frame of a culture in which such actions occur (Fillmore 1982a:120). Even something as simple as an *apple core* evokes a frame describing a particular way of eating apples: 'an apple-core is that part of the apple that somebody who eats apples the way most of us do has left uneaten' (Fillmore 1977a:73).

Another respect in which a word meaning makes reference to extrinsic entities is that a word allows the speaker and hearer to focus their attention on only part of an entire frame; no one word gives the full structure of the frame. The classic example is the commercial transaction frame (Fillmore 1977a:58–59; 1977b); but a much clearer case is the RISK frame (Fillmore and Atkins 1992). Fillmore and Atkins identify the following elements of the RISK frame: Chance (uncertainty about the future), Harm, Victim (of the Harm), Valued Object (potentially endangered by the risk), Situation (which gives rise to the risk), Deed (that brings about the Situation), Actor (of the Deed), (Intended) Gain (by the Actor in taking a risk), Purpose (of the Actor in the Deed), Beneficiary and Motivation (for the Actor). The verb *risk* occurs in many syntactic constructions, some of which are exemplified in (5a–e), but none of them include all or even most of the elements of the RISK frame (Fillmore & Atkins 1992: 83, 87, 89, 94, 96; all but the first are corpus examples):

(5)
a. You've (*Actor/Victim*) risked your health (*Valued Object*) for a few cheap thrills (*Gain*).
b. Others (*Actor/Victim*) had risked all (*Valued Object*) in the war (*Situation*).
c. She (*Actor/Victim*) had risked so much (*Valued Object*) for the sake of vanity (*Motivation*).
d. Men (*Actor/Victim*) were not inclined to risk scalping (*Harm*) for the sake of settlers they had never seen (*Beneficiary*).
e. I (*Actor/Victim*) didn't dare risk a pause (*Deed*) to let that sink in (*Purpose*).

In a frame semantic analysis, any of the uses of *risk* evokes the entire RISK frame, even if only part of that frame is overtly focused on by the construction in which *risk* is used.

The semantics of understanding also allows Fillmore to account for linguistic facts that do not lend themselves to a truth-functional analysis. For example, the collocations in (6) could be reversed as in (7) without producing semantic anomaly (Fillmore 1977a:75–76):

(6) a. A dog was barking.
b. A hound was baying.

(7) a. A dog was baying.
b. A hound was barking.

In other words, the difference between (6) and (7) cannot be accounted for by semantic constraints. But the examples in (6a–b) sound much more natural because the noun and the verb in each sentence both evoke the same frame.

Likewise, a truth-conditional semantics cannot capture many aspects of our understanding of (8) (Fillmore 1985:230–31):

(8) My dad wasted most of the morning on the bus.

Fillmore notes that choosing *father* or *dad* (without the possessive) would express a different relationship between the speaker and the speaker's father; *the morning* is understood to be defined against the frame of the working day (i.e, around 8am to noon) rather than the calendar day (midnight to noon); *waste* frames the use of time very differently from *spend*; and *on the bus* frames the speaker's location in terms of the bus being in service, rather than simply a physical container (which would be evoked by *in the bus*).

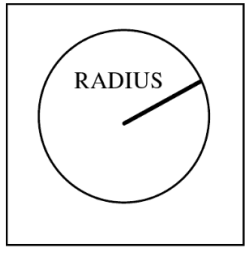
A truth-conditional model also cannot account for the anomaly of frames that are appropriate at one time of utterance but not at another because the world has changed in the meantime. Fillmore uses the contrived example in (9), noting that it could be said in 1984 but not in, say, 1919 (Fillmore 1985:238–39):

(9) During World War I, Ronald Reagan's birth mother dropped his analog watch into the sound hole of the acoustic guitar.

Such a sentence could be uttered in 1984, because World War II had occurred, allowing the 1914–18 war to be renamed World War I; medical technology had allowed the dissociation of the birth mother from the genetic mother (who donates the egg); and electric guitars and digital watches had been invented. None of these framings of the objects, persons or events was available in 1919, and so (9) would be an impossible utterance at that time, even if true retrospectively.

Finally, frame semantics offers a natural account of a number of problematic phenomena that seem to be caught between semantics and pragmatics, including

a line segment, but not any line segment: the line segment is defined relative to the structure of the circle. In other words, one can understand RADIUS only against a background understanding of the concept CIRCLE, which can be geometrically illustrated as in Figure 2.1.



CIRCLE

Figure 2.1 *RADIUS and CIRCLE*

In other words, the concepts RADIUS and CIRCLE are intimately related, and this relationship must be represented in conceptual structure. Langacker describes the relationship between RADIUS and CIRCLE as one of a concept **profile** against a **base**. The profile refers to the concept symbolized by the word in question. The base is that knowledge or conceptual structure that is presupposed by the profiled concept. Langacker also uses the term **domain** for the base (this term is also used in Lakoff 1987). This is identical to Fillmore's frame (§2.1): 'by the term "frame" I have in mind any system of concepts related in such a way that to understand any one of them you have to understand the whole structure in which it fits' (Fillmore 1982a:111). The term 'profile' has also come to be used as a verb to describe the relationship between word form and word meaning (profile+base): e.g. *radius* profiles a particular line segment in the CIRCLE base/domain/frame.

A concept profile is insufficient to define a word concept, because it presupposes other knowledge in its definition, namely its base. But a single base, such as CIRCLE, is a complex conceptual structure that includes a wide range of concept profiles, such as RADIUS, ARC, CENTER, DIAMETER, CHORD and so on. Hence the base alone is insufficient to define a linguistic concept either. The conclusion that follows from this is that THE MEANING OF A LINGUISTIC UNIT MUST SPECIFY BOTH THE PROFILE AND ITS BASE. This is identical to Fillmore's conclusion regarding concept frames.

The fact that a base supports multiple concept profiles is what makes the base a **domain**, in the intuitive sense: several different concept profiles have it as a base. We can now define a domain as A SEMANTIC STRUCTURE THAT FUNCTIONS AS THE BASE FOR AT LEAST ONE CONCEPT PROFILE (typically, many profiles). As Taylor (1989[1997]:84) notes, 'In principle, any conceptualization or knowledge configuration, no matter how simple or complex, can serve as the

cognitive domain for the characterization of meanings.' We may now say that the domain CIRCLE includes the concepts of an arc, a diameter, a radius, a chord and so on.

The canonical example of a profile-base relation is the part-whole relation: all agree that a concept such as ARM cannot be defined without reference to BODY. A similar class of concepts are kin terms such as *daughter*. The concept DAUGHTER presupposes the concept PARENT, and the particular type of kin relationship that holds between them. The concept NIECE presupposes other kinship concepts, and more complex kin relationships. In other words, the base against which a profile is defined can be more complex than just the whole of which some entity is a part. In some cases, one cannot always find a single simple word to describe the base: for NIECE, perhaps the best description of the base is KINSHIP SYSTEM, or some part of that system (see §2.4).

But it is not only relational nouns that represent a concept profile against a base, as we saw in §2.1. Consider another example, the word *weekend* (Fillmore 1985:223–24). The concept WEEKEND can only be understood against a whole background system of the calendrical cycle, defined partly by natural phenomena (the sequence of day and night) and cultural conventions (the seven-day week cycle, and its division into working days and nonworking days). Likewise, the concept BUY can only be understood against a background knowledge of the commercial transaction situation. Different aspects of the commercial transaction are profiled by BUY, SELL, PAY, COST and so forth. Such domains/frames cannot be readily represented in a geometric form in the way that RADIUS and CIRCLE are represented in Figure 2.1, although schematic diagrams are often resorted to in cognitive linguistics in order to represent the complex interconnectedness of concepts in domains or frames.

In fact, no concept exists autonomously: all are understood to fit into our general knowledge of the world in one way or another. What matters for semantic analysis is the profile-base relation, and the relationships between bases and domains. Some of the corollaries of this analysis of word meaning into profile and base/frame/domain will be explored in the following section.

2.3 Some consequences of the profile-frame/domain distinction

The terms frame (Fillmore), base (Langacker) and domain (Fillmore, Lakoff, Langacker) all appear to identify the same theoretical framework, as described in the preceding sections. Fillmore describes this framework as frame semantics, and this term has entered into more general usage among cognitive

linguists. However, the terms frame and domain continue to compete for usage, and base is also used among cognitive grammarians. We will use the terms frame and domain interchangeably here. Nevertheless, there are still other terms that have been proposed to describe types of semantic analyses that bear a strong affinity to frame semantics. We mention three influential theories here, which originated in artificial intelligence (scripts), cognitive psychology (the 'theory theory') and sociology (communities).

The examples of frames given above appear to be largely static in character. But this is not necessary: a frame is any coherent body of knowledge presupposed by a word concept. In particular, frames can include dynamic concepts, that is, extending through time. For example, PURIFIED presupposes in its frame a prior impure state of the entity which is then changed by some process; in contrast, PURE does not presuppose anything about prior states and processes. Of course, process terms such as RUN or BUY presuppose a sequence of events and prior and posterior states. The term **script** is often used for a frame/domain with a sequence of events, following Schank and Abelson (1977). They use the term to describe a canonical sequence of events presupposed by a social activity such as going to a restaurant. We subsume scripts under frames/domains.

Another theoretical construct that can be understood as a type of frame or domain is the so-called 'theory theory' of categorization found in cognitive psychology. Advocates of the theory theory argue that our understanding of categories such as HORSE or HAMMER is based not on perceptual features but on theories of biological kinds and artifacts respectively (Murphy and Medin 1985). For instance, we have at least a folk theory of biological kinds that indicates that individuals of the same category (e.g. HORSE) are members of that category by virtue of descent and reproduction, and perceptual similarity of horses (and the distinctness of individuals of other species) are a result of those basic biological patterns. Likewise, hammers are defined by the fact that they are manufactured by human beings for a particular function, and perceptual similarity of hammers (and the distinctness of other kinds of artifacts) are a result of their intended function. In frame semantic terms, the base for HORSE includes the 'theory' of biological kinds and the base for HAMMER includes the 'theory' of artifacts (see Fillmore 1986a:54).

Fillmore also uses the notion of framing to describe differences in the community or social domain of use of a word (Fillmore 1982a:127–29). For example, he notes that in the legal domain, that is, the community that engages in legal activity, the concepts of MURDER and INNOCENT differ from those concepts used outside that domain/community. In the legal domain, MURDER is profiled in a frame/domain where it contrasts with MANSLAUGHTER, but outside that domain, MURDER is profiled in a domain lacking that contrast. In the legal

domain, INNOCENCE is profiled against a frame in which innocence and guilt are the result of judgements in a trial (and in fact, guilt can be established only after the completion of the trial). Outside that domain, INNOCENT is profiled against a frame in which innocence and guilt are defined by whether the person in question committed the crime or not. Other concepts such as FLIP STRENGTH exist only in a specialized community, in this case publishers of pornography (the interested reader may turn to Fillmore 1982a:12 for further details). Hence, frame semantics is being extended to describe differences that appear to be defined on social rather than conceptual grounds. But there is a link between the two. Communities are defined by the social activities that bind the members together. Clark argues that communities involve the possession of shared expertise among their members: the specialized knowledge that is acquired by engaging in the activities that define the community (Clark 1996:102–4). This shared expertise is the conceptual structure that is found in the frame/domains of the concepts symbolized by the specialized vocabulary used by members of the community.

The distinction between profile and frame/domain is a useful tool for analyzing a number of interesting semantic questions. In particular, some distinctions in word meaning apply not to the profiled concept – what is usually thought of as 'the definition' of a word – but to its frame/domain.

For example, some concepts appear to denote the same thing in the world but profile it against a different frame. For example, LAND and GROUND denote (profile) what seems to be the 'same thing,' but against different frames: LAND describes the dry surface of the earth in contrast with SEA, while GROUND describes the dry surface of the earth in contrast with AIR (Fillmore 1982a:121). The frame chosen by one word or another allows one to make different inferences: Fillmore notes that a bird that *spends its life on land* does not go in the water, but a bird that *spends its life on the ground* does not fly (ibid.). Langacker offers the example of ROE and CAVIAR, both being fish eggs: ROE is profiled against the frame/domain of the reproductive cycle of fish, while CAVIAR is profiled against the frame/domain of food preparation/consumption (Langacker 1987:164–65). Another example is FLESH, profiled against the frame/domain of the body's anatomy, vs. MEAT, profiled against the frame/domain of food. The semantic difference is reflected in the collocations *flesh and bones*, describing an emaciated body, and *meat and potatoes*, describing a bland but filling type of meal (contrast *meat and bones* and *flesh and potatoes*).

The alternative framing of the same profile is particularly common with terms that are evaluative in character. For example, STINGY profiles one end of a scale, the opposite of which is GENEROUS; while THRIFTY appears to profile the same end of the same scale, and its opposite end is profiled by WASTEFUL (Fillmore 1982a:125). The difference is the orientation of the associated evaluative

scale: the evaluation of STINGY-GENEROUS is the inverse of that for THRIFTY-WASTEFUL. Of course, a speaker may choose to frame someone as either STINGY or THRIFTY. In other words, how an experience is framed is a matter of **construal**: it depends on how the speaker conceptualizes the experience to be communicated, for the understanding of the hearer. This is only one example of the construals that pervade human conceptualization of experience (see chapter 3).

Another type of evaluative framing effect is more indirect, as in the example FETUS vs. UNBORN BABY, terms used by opposing sides of the debate on abortion. FETUS profiles the entity in question against a more general MAMMAL frame: any mammal's unborn progeny may be called a *fetus*. This frame makes abortion appear less morally repugnant, since it is widely accepted in society that animals can be killed for certain purposes. The complex phrase UNBORN BABY exploits two frames. BABY profiles the same entity against the more specific HUMAN frame: we prototypically use *baby* only for human offspring. Both BABY and UNBORN profile the entity against its projected later lifestage, namely after birth. These frames make abortion appear more repugnant, since killing humans is accepted only under quite restricted circumstances (e.g. war and self-defense), and all agree that once a fetus is born, it is a human being. The difference in framing the entity denoted by *fetus* or *unborn baby* therefore orientates (or biases, to frame it differently!) the hearer towards the political stance on abortion adopted by the speaker.

The above examples all illustrate different words that profile the same concept but in subtly different frames. There are also examples where a single word is usually analyzed as polysemous – having distinct albeit related meanings – but where those meaning differences are more due to differences in frame rather than differences in profile. For example, a word such as *mouth* describes roughly the same concept profile but with different frames:

(15) *mouth*: BODY, BOTTLE, CAVE, RIVER

In the examples of frames for *mouth* in (15), *mouth* can be thought of as denoting the same type of profile, namely the opening to a container (however, a cave may have several openings to the earth's surface, and the container of a river is defined by both the riverbed and gravity). The word *mouth* is generally considered to be polysemous, that is, it has a sense for each of the profile-base pairings (senses that may not share the same word in other languages). In other words, the profile alone is insufficient in defining the senses of *mouth*.

The profile-frame/domain distinction is particularly useful in understanding the nature of semantic differences between words and their apparent translation equivalents in different languages. The profile-frame/domain distinction may shed light on some aspects of why translation is difficult and often unsuccessful.

2.4 Extensions of the basic profile-frame/domain distinction

The distinction between profile and domain/frame is a fundamental one in the theory of semantics used in cognitive linguistics. It has nevertheless proved to be insufficient in itself to capture a number of important semantic phenomena, and the basic theory has been elaborated in several directions.

2.4.1 Locational and configurational profiles

One extension of the frame semantic model recognizes two different kinds of profiles. Consider again the SPACE domain. A concept like RECTANGLE is profiled in the SPACE domain. Note that an octagon is an octagon wherever it is located in space. What matters for the profile of RECTANGLE is simply the number and configuration of line segments forming the sides. The profile for RECTANGLE contrasts with the profile of a spatial concept such as HERE. HERE profiles a location in SPACE, one that is defined with respect to the position of the speaker. You cannot move the profiled location without changing the concept. The same constraint applies to a concept like MOUNT TAMALPAIS. This concept also profiles a location in SPACE; another mountain in another location is not, nor ever will be, MOUNT TAMALPAIS (in contrast to MOUNTAIN, which is a topographical configuration that can be located anywhere). These are two different kinds of profiles: RECTANGLE has a **configurational** profile and HERE or MOUNT TAMALPAIS has a **locational** profile (Langacker 1987:153; Clausner and Croft 1999:7–13).[3]

Not every frame/domain can support both kinds of profiles. Color words, for example, specify regions in the HUE scale; if one moves to a different location on the HUE scale, then the concept changes, for example from RED to YELLOW. But there is no configurational profile on the HUE scale. This is not a fact about all one-dimensional scalar domains. For example, the domain of (musical) PITCH has both locational and configurational profiles. For example, particular notes such as C-SHARP, or more precisely one specific note such as C#″ (the C-sharp an augmented octave above middle C), profiles a single location on the pitch scale. However, a musical interval such as OCTAVE has a configurational profile: an OCTAVE is an octave wherever it occurs as long as the pitch interval is correct (Clausner and Croft 1999:10). More generally, measurable one-dimensional scalar domains such as PITCH, LENGTH and so on allow for both locational and configurational

[3] Langacker argues that the locational-configurational distinction applies to domains, but Clausner and Croft demonstrate that the same domain can support locational and configurational profiles.

profiles. Antonymic adjectives such as TALL/SHORT (see chapter 7) profile a particular location or direction on a scalar domain. Units of measurement on the scale, such as INCH or FOOT, profile configurations: an inch is the same interval no matter the locations subsumed under the measured interval.

2.4.2 *Scope of predication*

In §2.2, we used the example of NIECE, demonstrating that its proper definition presupposes the system of kinship relations. But we do not need the entire kinship system in order to understand the concept NIECE. Only a small part of it is necessary as represented in Figure 2.2 (the gender-neutral square symbol is used because the intervening kin for NIECE may be male or female).

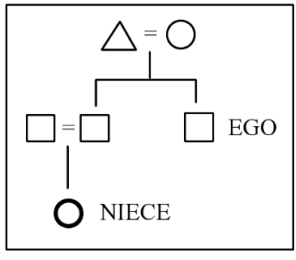


Figure 2.2 *NIECE*

The relevant part of the kinship system for defining NIECE is called the **scope of predication** for the concept (Langacker 1987:118–19; renamed immediate scope [Langacker 1999:49]).

An example of different scopes of predication can be found in the behavior of human body parts such as the following parts of the arm (Langacker 1987:119): KNUCKLE ⊂ FINGER ⊂ HAND ⊂ ARM ⊂ BODY. Each one has its immediate successor as its scope of predication. Possessive constructions referring to wholes within the scope of predication are acceptable, but if the whole is beyond the scope of predication, then the sentence is odd (Langacker 1987:119; but see §6.2.1.7):

(18) a. A body has two arms.
b. A hand has five fingers.
c. A finger has three knuckles and a fingernail.
d. ?An arm has five fingers.
e. ??A body has twenty-eight knuckles.

Nested scopes of predications can be generalized to nesting of frames/domains in general.

2.4.3 *Relationships between domains*

Much more complex is the elaboration of the relationships among domains – not surprisingly, since this touches on the organization of human knowledge in the mind.

An important fact about profiles and frames/domains is that one can have successive chains of profile-frame relations. The concept RADIUS can only be understood in terms of CIRCLE, as noted above. But the concept CIRCLE can itself only be understood in terms of (two-dimensional) SPACE. That is, the word *circle* profiles CIRCLE against the SPACE frame. In other words, a concept that functions as the frame/domain for other concepts is itself a profile for another conceptual frame/domain. In other words, whether a conceptual structure is the profile or frame/domain is a matter of construal (see §§2.3, 3.2).

The chain of profile-frame relations does eventually bottom out, when we reach directly embodied human experience. SPACE is a good candidate for a directly embodied human experience. Langacker calls domains rooted in directly embodied human experience **basic domains** (Langacker 1987:148); he calls nonbasic domains **abstract domains**. A major theme of Lakoff and Johnson's cognitive linguistic research is that even our most abstract knowledge is ultimately grounded in directly embodied human experience (Lakoff and Johnson 1980, chapter 12; Johnson 1987; Lakoff and Johnson 1999). Other examples of basic domains besides SPACE are MATERIAL, TIME, FORCE and a host of perceptual and bodily sensations (COLOR, HARDNESS, LOUDNESS, HUNGER, PAIN etc.). There are also emotional and other mental states and processes, and also social properties, relations and processes, that do not presuppose other domains. Exactly which mental and social domains are basic depends on one's theory of mind and social interaction, and so we will not make any specific proposals here.

The relation between an abstract domain and the basic domain it presupposes is not a taxonomic relation (or, as Langacker calls such relations, a **schematic** one). It is a relationship of concept to background assumption or presupposition. This distinction is sometimes obscured by the English language. For example, the word *shape* as a mass noun stands for the domain, but as a count noun (*a shape*) it is a more general or schematic concept subsuming [CIRCLE], [SQUARE], [TRIANGLE] and so on. A more general or schematic concept is not the domain for the particular concept; in fact, a schematic concept is itself profiled in the same domain as its instantiation. As will be seen below, it is not always easy to distinguish a taxonomic relation from a profile-domain relation.

Langacker argues that some domains involve more than one **dimension** (Langacker 1987:150–51). An obvious case is space, which involves three dimensions (some concepts such as CIRCLE need only two dimensions for their definition; others such as LINE need only one). Many physical qualities that are grounded in the experience of sensory perception, such as TEMPERATURE and PITCH, are one-dimensional. Others, such as COLOR, can be divided into HUE, BRIGHTNESS and SATURATION. Generally, dimensions of a domain are all simultaneously presupposed by concepts profiled in that domain. This is the critical point: a concept may presuppose several different dimensions at once.

In fact, a concept may presuppose (be profiled in) several different domains. For example, a human being must be defined relative to the domains of physical objects, living things and volitional agents (and several other domains, e.g. emotion). The combination of domains simultaneously presupposed by a concept such as HUMAN BEING is called a **domain matrix**. Langacker makes the important point that there is in principle only a difference of degree between dimensions of a domain and domains in a matrix (Langacker 1987:152). In practice, we are more likely to call a semantic structure a domain if there are a substantial number of concepts profiled relative to that structure. If there are few if any concepts profiled relative to that structure alone, but instead there are concepts profiled relative to that structure and another one, then those structures are likely to be called two dimensions of a single domain. The term 'domain' implies a degree of cognitive independence not found in a dimension (see also §5.3.1).

The domain structure presupposed by a concept can be extremely complex. Let us now consider how one would define what seems to be a kind of physical object, the letter T. It is directly defined as a letter of the alphabet; its base (domain) is hence the alphabet. The alphabet is itself an abstract domain presupposing the notion of a writing system – it is not just an instance of a writing system, since the latter involves not just a set of symbols such as an alphabet but also the means of putting them together, including the direction of letters on a page, spaces for words and so on. The domain of writing systems in turn presupposes the activity of writing. The activity of writing must be defined in terms of human communication, which presupposes the notion of meaning – perhaps a basic domain, since the symbolic relation appears not to be reducible to some other relation – and visual sensations, since writing is communication via visually perceived inscriptions, rather than auditorily or through gestures. And since writing is an activity, the domains of time and force or causation (both basic domains; see §3.5) are also involved in the domain matrix of writing, since the letter T is the product of an activity. Since writing is a human activity, it presupposes the involvement of human beings. Human beings are living things with mental abilities, such as volition, intention, cognition and emotion (themselves dimensions of the mental domain or

better domains in the matrix of the domain of the mind). Living things in turn are physical objects endowed with life. Physical objects possess material existence and are spatial entities (although material objects always have spatial extent, spatial objects like geometric figures can exist without material embodiment).

A diagram exhibiting all of the basic-abstract domain relations presupposed in defining the concept of the letter T is given in Figure 2.3 (based on Croft 1993[2002]:170, Fig. 2.1; the profiled concept is given in boldface, and the basic domains are given in capitals).

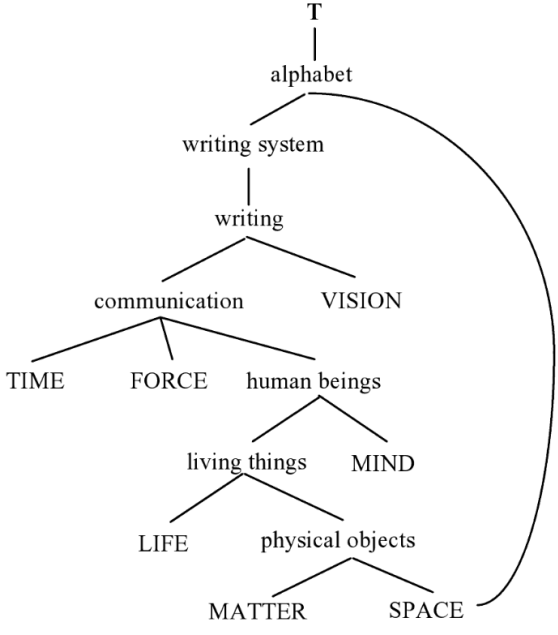


Figure 2.3 *Domain structure underlying the concept of the letter T*

From this, it can be seen that it is incorrect to describe the concept of the letter T simply as belonging to the domain of writing, as a typical informal theory of domains would most likely have it. The vast majority of concepts belong to abstract domains, which are themselves profiled in complex domain matrices, often also abstract and so ultimately presuppose a large array of basic domains that can be called a **domain structure** (Croft 1993[2002]:169; this corresponds to Langacker's **maximal scope** [Langacker 1999:49]).

It is not easy to distinguish profile-base relations from taxonomic/schematic relations (that is, type vs. instance). For example, is writing an instance of human communication, or is writing an instance of an activity that can only be understood

[19e]). In other words, the ICMs for BACHELOR are going to be as detailed and as hedged as reality in order to describe the 'ideal' life history and lifestyle that is implied by BACHELOR.

Searle (1979) argues that in fact the frame for any word concept is going to be infinitely complex. Searle is interested in what he calls the background assumptions for defining the literal meaning of words; in frame semantic terms, the background assumptions are the frame(s) for understanding the literal meaning of a linguistic expression. Searle argues that the sort of background knowledge that is relevant to a linguistic expression's meaning cannot be enumerated in such a way that all contexts of use can be predicted. That is, a basically infinite set of background assumptions are required to characterize the literal meaning of an utterance, and hence its appropriate use in context. Consider the following example (Searle 1979:127):

(20) Give me a hamburger, medium rare, with ketchup and mustard, but easy on the relish.

We assume we understand what the meaning of this request is; we invoke a background frame of fast food restaurants, the ordering and serving of food, how a hamburger is cooked and garnished, and so on. But there is more to it than that:

> Suppose for example that the hamburger is brought to me encased in a cubic yard of solid lucite plastic so rigid that it takes a jack hammer to bust it open, or suppose the hamburger is a mile wide and is 'delivered' to me by smashing down the wall of the restaurant and sliding the edge of it in. (Searle 1979:127)

These situations are admittedly unlikely to be encountered in real life, in the way that unmarried men living with their girlfriends or homosexual men commonly are encountered. Nevertheless, in the frame for ordering a hamburger we would want to represent the assumptions that it is not supposed to be too large, nor encased in solid lucite plastic, nor any of an indefinitely large number of other things that one could do to a hamburger.

Langacker makes a similar observation with a similar type of example, given in (21) (Langacker 1988:16):

(21) He is barely keeping his head above the water.

We may think we know what this sentence means, but

> imagine a race over the ocean by helicopter, where the contestants must transport a severed head, suspended by a rope from the helicopter, from the starting line to the finish; a contestant is disqualified if the head he is carrying ever dips below the water's surface. (Langacker 1988:16–17)

In other words, we have to bring to bear our full knowledge of the way the world is or, more accurately, the way we expect the world to be, in order to describe the precise meaning of an utterance.

Another way of saying this – the more common way of saying it in cognitive linguistics – is that we have to call on our **encyclopedic** knowledge in order to properly understand a concept. Some semanticists have argued that only a small subset of our knowledge of a concept needs to be represented as the linguistic meaning of a word; this is known as the **dictionary** view of linguistic meaning. But the frame semantic model of linguistic meaning highlights the failings of the dictionary view (Fillmore 1982a:134; 1985:233). The dictionary view fails because it generally describes only the concept profile, or at best a very simplified version of the concept frame implicit in a concept profile (see Haiman 1980 for further arguments; see also Quine 1951[1961]). Once one begins to specify the conceptual structure of the frame that supports the concept profile for a word or linguistic expression, the semantic structure quickly expands to encompass the total (encyclopedic) knowledge that speakers have about the concept symbolized by the word or construction.

Of course, encyclopedic knowledge is all interconnected in our minds. If the meaning of a word includes the frame as well as the profile, then one must abandon the concept of word meanings as small discrete chunks of conceptual structure. Langacker proposes an alternative model of the meaning of a word as an **access node** into the knowledge network (Langacker 1987:161–64):

> The entity designated by a symbolic unit can therefore be thought of as a **point of access** to a network. The semantic value of a symbolic unit is given by the open-ended set of relations . . . in which this **access node** participates. Each of these relations is a cognitive routine, and because they share at least one component the activation of one routine facilitates (but does not always necessitate) the activation of another. (Langacker 1987:163)

A word meaning is therefore a perspective on our knowledge of the world, as seen through the concept profiled by the word. This view of word meaning is not that different from the view of a conceptual category in cognitive psychology as a means of accessing further information about the individual categorized. This view of word meaning also highlights how choosing a word is a way of construing the relationship between the experience being communicated and the interlocutors' existing knowledge.

In the example of the ICM for the word *bachelor*, the deviations from the ICM were all examples in which it is not clear whether *bachelor* is applicable to those cases at all. For other words, a modifier is appended to the word to indicate deviation

from the ICM. For example, Lakoff describes the ICM for *mother* as involving a cluster of several different ICMs (Lakoff 1987:74–76):

(22) BIRTH: the person giving birth is the mother
GENETIC: the female who contributed the genetic material is the mother
NURTURANCE: the female adult who nurtures and raises a child is the mother of that child
MARITAL: the wife of the father is the mother
GENEALOGICAL: the closest female ancestor is the mother

The cluster ICM (as Lakoff names it) is essentially a domain matrix. Thanks both to modern medicine and to traditional social arrangements, the real world has many cases where only parts of the cluster model for MOTHER applies to particular individuals. These deviations from the cluster ICM are indicated by conventional compounds and adjective + noun expressions:

(23)
a. *stepmother*: fits the NURTURANCE and MARITAL models but none of the others
b. *foster mother*: fits the NURTURANCE model but none of the others
c. *birth mother*: fits the BIRTH model but none, or not all, of the others
d. *genetic mother*: fits the GENETIC model but not all of the others
e. *unwed mother*: fits (probably) all but the MARITAL model [etc.]

Nevertheless, one might still obtain varying results if asking of individuals falling under any of the categories in (23) whether she is the 'real mother' of the child (see chapter 5).

In other cases, there is clearly an ICM but linguistic convention has allowed the word, unmodified, to describe situations that lack some of the properties of the ICM. Fillmore gives the example of the ICM for *breakfast*, which has as its frame a cycle of meals, and profiles 'the one which is eaten early in the day, after a period of sleep, and for it to consist of a somewhat unique menu' (Fillmore 1982a:118). But you can work through the night and have eggs, toast and so on at sunup and call it *breakfast*; you can sleep till 3pm, get up and have eggs, toast and so on and call it *breakfast*; and you can sleep through the night and in the morning have chocolate cream pie and a martini and call it *breakfast* (ibid., 118–19). Each of these cases lacks one feature of the ICM for BREAKFAST. One can also call a meal *breakfast* that lacks both 'early in the day' and 'after a period of sleep' too: restaurants exist that serve *breakfast all day* (ibid.; the menu feature appears to be more important than the other two).

Another example similar to BREAKFAST is the ICM for *lie* (Coleman and Kay 1981). The ICM for LIE, such that a speaker S telling an addressee A the proposition P is a lie, is:

(24) a. P is false.
b. S believes P to be false.
c. In uttering P, S intends to deceive A.

Coleman and Kay performed an experiment with stories designed to test every combination of the features listed in (24), and found that, in general, the situations with more of the three properties (24a/b/c) tended to be described by experimental subjects more often as lies than situations with fewer of the properties. Two situations (at least) have conventional expressions that indicate their deviation from the ICM. Polite *social lies* such as saying *What a lovely party!* or *How nice to see you!* can be said in circumstances in which (24a/b) hold but (24c) does not. The other situation can be illustrated with the exchange in (25) (Coleman and Kay 1981:29):

(25) John: Where are you going?
Mary: [out to buy John's birthday present] We're out of paprika.

In the situation in (25), (24a/b) do not hold but (24c) does (just the opposite of social lies); in this situation an English speaker could say that Mary *is being economical with the truth*.

In the case of *breakfast* and *lie*, the word profile extends to a range of situations whose features vary. Nevertheless, there appears to be agreement as to the situation that counts as the ICM for these words. ICMs thus give rise to judgements of graded centrality to members of a category, a phenomenon that is usually described as prototype effects (see Lakoff 1987 and chapter 4).

2.6 Mental spaces

Semantic frames/domains represent one of the two major organizing principles for conceptual structure. The other important organizing principle is the one illustrated by the examples in (26):

(26) a. Gina bought a sports car.
b. Giorgio believes that Gina bought a sports car.
c. Paolo believes that Gina bought a pickup truck.
d. Gina wants to buy a sports car.
e. Gina will buy a sports car.
f. If Gina buys a sports car, then she will drive to Paris.

In (26a), a situation is asserted (profiled), evoking the frame/domain of commercial transactions. In (26b), the same situation is represented, but as a belief rather than a fact. Example (26c) demonstrates that such beliefs may be at variance with the facts, and with other beliefs. In (27d), the same apparent situation

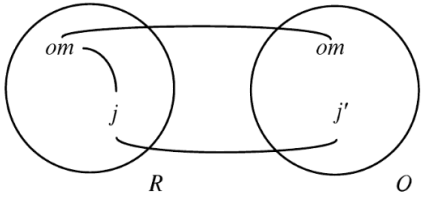
is also represented, but it has a different status: the event has not taken place, it is only something in Gina's mind. In fact, even the sports car may exist only in Gina's mind. Example (26e) is more similar to (26d) than (26a), even if it is a prediction about the real world: the event has not taken place. Finally, in example (26f) the event is again hypothetical, and so is the event described in the consequent clause.

In a truth-conditional semantics, (26a) is unproblematic, but (26b–f) are. The situation 'Gina has bought a sports car' is false in (26d–e), but not necessarily false in (26b–d) or even (26g). One must be able to distinguish between the status of situations depending on whether they are true in the real world, or whether they are only true in someone's beliefs or desires, or true at another time in the real world.

In a truth-conditional semantics, the standard way of representing the status of situations is as possible worlds: there is the real world, and then there are worlds with situations that are possible but not (necessarily) actual. Possible worlds are then identified with a person's beliefs or wishes or some other mental attitude. Possible worlds pose metaphysical problems for many people, however. Do possible worlds exist? If so – or especially if not – where are they?

Fauconnier (1985, 1997; see also Fauconnier and Sweetser 1996) proposes an alternative model of representing the status of knowledge that is metaphysically more attractive and allows for elegant solutions to a number of problems in semantic and pragmatic analysis. Fauconnier replaces the notion of a possible world with that of a **mental space**, and argues that the mental space is a cognitive structure. That is, the allocation of a situation to 'Gina's desire,' 'Paolo's belief' or 'The hypothetical situation' is done in the mind of the speaker (and hearer), not in some as yet unclear metaphysical location. Fauconnier then proposes a set of principles for the interpretation of utterances and the assignment of situations to the appropriate mental space. We briefly present Fauconnier's model and a number of examples here; the reader should consult his work for detailed arguments in favor of his model over truth-conditional approaches to the same phenomena.

Utterances such as (26a) are normally construed as situating events or states in a **base space** (Fauconnier 1997:38–39), normally the present reality (more precisely, the mutually known world of the interlocutors; in Fauconnier 1985 this is called the reality space). Utterances such as (27b–f) have elements that Fauconnier describes as **space builders**: included in their meaning is the setting up of a new space different from the base space and linked to it. Space builders include a wide range of semantic phenomena corresponding not only to possible worlds in logical semantics but also a variety of other operators, including temporal expressions ([27a]; see Fauconnier 1985:29–30, 33–34; Fauconnier 1997, chapter 3), image or 'picture noun' contexts ([27b]; Fauconnier 1985:10–12), fictional situations ([27c]; ibid., 73–81), games and other systems ([27d]; ibid, 31), negation



om: Oedipus' mother (role)
j: Jocasta (value in R)
j': Jocasta (value in O)
R: reality space
O: Oedipus' belief space

Figure 2.5 *Mental space diagram for example (29)*

In the true reading of (29), the description *his mother* for *j* in R is used for the value *j'* in O by the Access Principle. The false reading of (29) uses the description *his mother* in O, but it does not apply to *j'* in O. (A similar analysis can be applied to referential/attributive ambiguities; Fauconnier 1985:159–60.)

Only a few further examples can be given of how Fauconnier's model handles a variety of complex reference and identity phenomena (Fauconnier 1985:45, 36, 32, 39, 31, 155):

(30)
a. Rose is blonde, but George thinks she's a redhead.
b. Hitchcock saw himself in that movie.
c. I didn't buy a car. Otherwise, I would drive it to work.
d. Your car is always different.
e. If I were a millionaire, my VW would be a Rolls.
f. Hesperus [the Morning Star] is Phosphorus [the Evening Star].

In (30a–b), the pronoun identifies a value in a built space (George's beliefs, the movie) by referring to its counterpart in the base space (the blonde Rose, Hitchcock). In (30c), the pronoun refers to a value in a negative space which has no counterpart in reality (*otherwise . . . would* evokes the same negative space; see example [32] below). In (30d), *your car* refers to a role and the predicate describes its changes in value over a sequence of temporal spaces. In (30e), the value filling the role *a Rolls* in the counterfactual space is identified with the value filling the role *my VW* in reality. In (30f), a classic philosophy example, two distinct values in the prior reality space are identified as one value in the current reality space.

The second set of phenomena that Fauconnier explores is what conceptual structures from the base space also occur in the built space(s), and vice versa. For example, in (26d), how much of our knowledge of reality should be attributed to the hypothetical space? Obviously, one cannot attribute to the hypothetical space the real-world fact that Gina has not bought a sports car; that is precisely what is

asserted in the hypothetical space. On the other hand, at least other information about Gina, and about sports cars, not to mention much other knowledge about the world, may be attributed to the hypothetical space.

Fauconnier first addresses the question of presuppositions (Fauconnier 1985, chapter 3). As noted in §2.1, presuppositions are situations that are part of the frame of a concept, but are not asserted. The question is, what is the relationship of presuppositions in a built space to those in the base space? For example, consider the sentences in (31) (Fauconnier 1985:89–90):

(31) a. If Max has gone to the meeting, then Max's children are alone.
b. If Max has children, Max's children are American.

The phrase *Max's children* presupposes that Max has children; that is, a referring expression presupposes the existence of its referent(s). The traditional pragmatic analysis is that one must determine the presupposition of the whole sentence from the presuppositions of its parts (presupposition projection; see, e.g., Levinson 1985:191–225). In (31a), the presupposition that Max has children 'projects' to the base space. But in (31b), it does not project because it is asserted in the antecedent clause: Max may or may not have children in the base space (reality).

Fauconnier instead introduces the principle of presupposition **float**: 'informally: a presupposition floats up [from a built space to its base space] until it meets itself or its opposite' (Fauconnier 1997:61). In example (31a), the built space presupposes that Max has children but does not assert it. Hence the presupposition can float to the base space. In example (31b), however, the built space asserts that Max has children, and hence the presupposition cannot float beyond it to the base space.

Two more complicated examples are given in (32)–(33) (Fauconnier 1985:95, 93):

(32) It is possible that John has children, and it is possible that John's children are away.
(33) Luke believes it's raining and hopes that it will stop raining.

Examples (32)–(33) demonstrate that space builders may build the same space or related nonreal mental spaces. In (32), *it is possible* in the second conjunct can be construed as evoking the same possibility space that was built in the first conjunct. In this case, the presupposition that John has children is asserted in the hypothetical space in the first conjunct and therefore it does not float to the base space. Example (33) demonstrates that certain built spaces are related in privileged ways that allow presuppositions to float (see also McCawley 1981[1993]:415–30). A hope for some situation can be built on one's beliefs. Hence the presupposition that it is raining in the second clause of (33) is built on the assertion in the first clause (and therefore does not float to the base space). Reversing the relation between the

two spaces fails, because beliefs cannot be built on hopes:

(34) ??Luke hopes that it is raining and believes that it will stop raining.

Fauconnier then turns to the question of counterfactual conditionals, as in (35) (Fauconnier 1985, chapter 4; 1997, chapter 4):

(35) If Boris had not come, Olga would have come anyway.

A counterfactual conditional builds a space in which the antecedent clause (Boris does not come) is explicitly the opposite of the base space (Boris did come). Again, the question is, what structures in the base space are also found in the built space? Fauconnier argues that previous, truth-conditional approaches to counterfactuals transfer as much of the structure of the base space as possible to the counterfactual space (Fauconnier 1985:118). Fauconnier instead advocates an analysis in which only the structure relevant for the counterfactual reasoning is transferred to the counterfactual space. He argues that the great flexibility of counterfactuals precludes transferring too much of the structure of the base space to the counterfactual space; compare (36a–d) (ibid.):

(36)
a. If Napoleon had been the son of Alexander, he would have been Macedonian.
b. If Napoleon had been the son of Alexander, he would have won the battle of Waterloo.
c. If Napoleon had been the son of Alexander, he would not have been Napoleon.
d. If Napoleon had been the son of Alexander, Alexander would have been Corsican.

Fauconnier writes:

> It would not make sense to evaluate the 'absolute' truth of any of these statements, but they can all be used to make some point, which requires only very partial structuring of *H* [the counterfactual space] . . . such examples suggest that there is no general *linguistic* algorithm for going from *R* [the base space] to *H*. (Fauconnier 1985:118)

In Fauconnier's more recent work (Fauconnier 1997, chapter 6; Fauconnier and Turner 2002; see also Coulson 2000), he and Turner have emphasized the fact that information from two different spaces, such as those in the counterfactual conditionals in (36a–d), is **blended** in the resulting space, and that this blending process occurs in a much wider range of contexts than counterfactual conditionals. For example, (37) blends elements of a voyage by the catamaran *Great America II* from Boston to San Francisco in 1993 with a voyage by the clipper *Northern Light* on the same route in 1853 (Fauconnier 1997:155–56; see Fauconnier and Turner 1994):

(37) At this point, *Great America II* is barely maintaining a 4.5 day lead over *Northern Light*.

Obviously, *Northern Light* is nowhere to be seen in 1993, but the blend of the 1853 temporal space and the 1993 temporal space in (37) 'makes a point' about the progress of *Great America II*. In Fauconnier and Turner's blending theory, example (37) evokes four mental spaces: two **input spaces** (in [37], the 1853 and 1993 temporal spaces); a **generic space**, which abstracts the commonalities from the two spaces (the route of travel, distance traversed, time taken etc.) and thereby defines the cross-space mapping between the elements in the two input spaces; and a **blended space**, which creates a novel expressive effect, in this case an image of a race between the current boat and a boat from the nineteenth century. Fauconnier and Turner (2002) argue that blending is a process of space mapping that pervades human reasoning, and explore the phenomenon of blending in a wide range of phenomena, most notably metaphor.

At this point, blending theory has moved quite a distance from mental space theory. Mental space theory illustrates how utterances evoke not just semantic frames but also spaces representing the status of our knowledge (beliefs, desires, hypotheticals, counterfactuals) relative to reality, how language uses links between different spaces in referring to individuals, and how knowledge can float between spaces. Blending theory has shifted the focus to how information from two spaces, construed broadly to include domains, is combined to produce novel conceptual structures. This aspect of blending theory is discussed with respect to metaphor in §8.3.3. In this chapter we have focused on the fact that the original mental space theory describes a significant dimension for the structuring of our conceptual knowledge orthogonal to semantic frames/domains, and offers solutions to many semantic and pragmatic problems in addition to those illustrated in this section.

3

Conceptualization and construal operations

3.1 Introduction

In chapter 1, we noted that one of the basic hypotheses of cognitive linguistics is that, in Langacker's words, semantics is conceptualization. This hypothesis challenges the view that semantics is purely truth-conditional. We have already seen in chapter 2 examples of semantic interpretations of linguistic expressions that go beyond truth-conditional semantics. Situations can be framed in different ways – e.g., *my dad* vs. *dad* vs. *father* and *waste time* vs. *spend time* in *My dad wasted most of the morning on the bus* (see §2.1) – and these ways convey to the hearer different conceptualizations of the relationship between the speaker and the speaker's father, of the positive or negative quality of the situation being described, and even of the nature of the situation being described (characterizing time in terms of money).

Framing is pervasive in language: as we argued in chapter 2, all linguistic units evoke a semantic frame. Yet framing is but one example of the ubiquity of conceptualization in linguistic expression. All aspects of the grammatical expression of a situation involve conceptualization in one way or another, including inflectional and derivational morphology and even the basic parts of speech. Whenever we utter a sentence, we unconsciously structure every aspect of the experience we intend to convey. The purpose of this chapter is to describe the range of conceptualization processes or **construal operations** that human beings employ in language.

The role of conceptualization in language is clearest when a single language provides alternative expressions for what appears to be truth-functionally equivalent situations. The example of framing given above contrasts different lexical expressions – *dad/father* and *spend/waste* – that otherwise appear to be truth-functionally equivalent. (We deliberately hedge on the phrase 'truth-functionally equivalent' because it often turns out that there are some situations that so favor one conceptualization over another that the other expression is unacceptable and so the two expressions are not always judged as truth-functionally equivalent.) But it is equally easy to find examples of inflectional and

(14) a. soloma 'straw' [mass]
b. solom-**ink**-a 'a straw' [count (American English)]

(15) a. On kričal. 'He cried/was crying' [multiple times]
b. On krik-**nu**-l. 'He cried' [once]

In (14b), Russian requires the singulative suffix *-ink* before the gender-case inflection *-a* in order to use the mass noun stem *solom-* in a count construction; English simply uses *straw* in either construction (with a concomitant truth-conditional semantic shift). In (15b), Russian requires the semelfactive suffix *-nu* before the past inflection *-l* in order to use the extended-activity verb stem *krik-* in the once-only construal; English simply uses *cry* in the simple past or the past progressive (with the relevant semantic shift).

Thus, there is cross-linguistic and language-internal variation as to whether construal plus truth-conditional semantic shift is expressed covertly or overtly. We will call the former **coercion** and the latter **conversion**.[1] We see no significant difference between coercion and conversion in conceptual semantic terms; in both cases, the truth-conditional semantic shift that accompanies the construal is conventionalized in the language, and cannot be assumed to carry over to other languages or even other words in the same language. In both cases, what we are interested in is the construal process itself, and this is a part of both conversion and coercion.

There are many construal operations that have been identified by cognitive linguists, and by other linguists who take a conceptualist approach to linguistic semantics. There have also been various proposals for grouping together construal operations that appear to be related. The two most comprehensive classifications are those of Talmy and Langacker. Talmy proposes a four-way classification under the name of **imaging systems** (Talmy 1977, 1978a, 1988a,b), given in (16):[2]

(16) I. Structural Schematization
II. Deployment of Perspective
III. Distribution of Attention
IV. Force Dynamics

Langacker surveys a wide range of construal operations under the rubric of **focal adjustments** (Langacker 1987, §3.3); his classification of focal adjustments

[1] There is no uniformity in terminology in the literature, unfortunately: 'coercion,' 'conversion' and 'shift' have all been used for the covert case.

[2] Talmy somewhat alters this classification in the version found in Talmy (2000), and changes their name to **schematic systems**. The first three categories are basically the same (the first is renamed configurational structure), while force dynamics is dropped entirely and a system called 'Domain', consisting solely of the domains of space and time, is added. The 'Domain' category includes the construals represented by noun and verb (see §§3.2, 3.5). We believe that force dynamics should be retained as a construal system; see Table 3.1.

is given in (17):

(17)
I. Selection
II. Perspective
  A. Figure/Ground
  B. Viewpoint
  C. Deixis
  D. Subjectivity/Objectivity
III. Abstraction

Talmy's and Langacker's classifications have a number of features in common: for example, both have categories of perspective, and Talmy's attentional imaging system includes Langacker's selection and abstraction focal adjustments. These classifications are not comprehensive, however. Fillmore's framing is a construal operation, for example, but does not obviously fall under the categories in either Talmy's or Langacker's classifications. Lakoff and Johnson's (1980) theory of metaphor is an example of another widespread type of linguistic conceptualization that is not discussed explicitly by either Langacker or Talmy. Langacker himself makes use of other construal operations, such as scanning, comparison and the entity/interconnection distinction, that he does not include in his classification of focal adjustments.

There is another theoretical construct in cognitive linguistics which imposes a conceptualization of experience, namely **image schemas** (Lakoff 1987; Johnson 1987; Lakoff and Turner 1989; Johnson 1987; Clausner and Croft 1999). Image schemas are defined as schematic versions of images. **Images** are representations of specific, embodied experiences (see Fillmore 1975:123; 1977a:73–74). Domains that give rise to images are described as **embodied** (Lakoff 1987:267; Johnson 1987:19–23) or grounded (Lakoff and Turner 1989:113). These domains are all basic domains as defined in §2.4. Image schemas are not specific images but are **schematic**. They represent schematic patterns arising from imagistic domains, such as containers, paths, links, forces, and balance that recur in a variety of embodied domains and structure our bodily experience (Lakoff 1987:453; Johnson 1987:29). Image schemas are also not specific to a particular sensory modality (Lakoff 1987:267; Johnson 1987:24–25). Image schemas structure our bodily experience (Talmy 1972, 1977, 1983), and they structure our non-bodily experience as well, via metaphor (Lakoff 1987:453; Johnson 1987:29; see chapter 8). This definition clarifies the seemingly contradictory description of image schemas sometimes found: image schemas are 'abstract' in one sense of that word – they are schematic – but not 'abstract' in another sense of that word – they are embodied.

An inventory of image schemas drawn from Johnson 1987 and Lakoff and Turner 1989 is given in (18) (based on Clausner and Croft 1999:15; the headings and items in italics were added by Clausner and Croft).

(18)

SPACE	UP-DOWN, FRONT-BACK, *LEFT-RIGHT*, NEAR-FAR, CENTER-PERIPHERY, CONTACT
SCALE	PATH
CONTAINER	CONTAINMENT, IN-OUT, SURFACE, FULL-EMPTY, *CONTENT*
FORCE	BALANCE, COUNTERFORCE, COMPULSION, RESTRAINT, ENABLEMENT, BLOCKAGE, DIVERSION, ATTRACTION
UNITY/MULTIPLICITY	MERGING, COLLECTION, SPLITTING, ITERATION, PART-WHOLE, MASS-COUNT, LINK
IDENTITY	MATCHING, SUPERIMPOSITION
EXISTENCE	REMOVAL, BOUNDED SPACE, CYCLE, OBJECT, PROCESS

Image schemas are also construals of experience, though they exhibit some of the characteristics of domains as well (see §3.5).

In this chapter, we present all of the construal operations and image schemas discussed by cognitive linguists under a new classification.[3] This classification is given in Table 3.1 on page 46.

A chief aim of this classification is to demonstrate the close relationship between construal operations proposed by linguists and psychological processes proposed by cognitive psychologists and phenomenologists. If linguistic construal operations are truly cognitive, then they should be related to, or identical with, general cognitive processes that are postulated by psychologists. In fact, most if not all of these construal operations are special cases of general cognitive processes described in psychology and phenomenology. This view follows from the basic hypothesis of cognitive linguistics that language is an instance of general cognitive abilities.

The classification of construal operations in Table 3.1 is not intended to be a reduction of construal operations to just four processes. The various construal operations listed under the four headings are all distinct cognitive processes. The analysis we propose is that the various construal operations are manifestations of the four basic cognitive abilities in different aspects of experience. The remainder of this chapter describes and illustrates the construal operations under these four headings.

[3] An earlier version of this classification is presented in Croft and Wood 2000.

Table 3.1 *Linguistic construal operations as instances of general cognitive processes*

I. Attention/salience
  A. Selection
    1. Profiling
    2. Metonymy
  B. Scope (dominion)
    1. Scope of predication
    2. Search domains
    3. Accessibility
  C. Scalar adjustment
    1. Quantitative (abstraction)
    2. Qualitative (schematization)
  D. Dynamic
    1. Fictive motion
    2. Summary/sequential scanning
II. Judgement/comparison (including identity image schemas)
  A. Categorization (framing)
  B. Metaphor
  C. Figure/ground
III. Perspective/situatedness
  A. Viewpoint
    1. Vantage point
    2. Orientation
  B. Deixis
    1. Spatiotemporal (including spatial image schemas)
    2. Epistemic (common ground)
    3. Empathy
  C. Subjectivity/objectivity
IV. Constitution/Gestalt (including most other image schemas)
  A. Structural schematization
    1. Individuation (boundedness, unity/multiplicity, etc.)
    2. Topological/geometric schematization (container, etc.)
    3. Scale
  B. Force dynamics
  C. Relationality (entity/interconnection)

3.2 Attention/salience

The process of **attention** is a well-known basic phenomenon in cognitive psychology. Attention appears to be closest to what Chafe (1994:26–30) calls the focus of consciousness. Attention comes in degrees and is usually modeled in terms of degree of activation of conceptual structures in a neural network

model of the mind. The phenomenon of attention focuses on the human cognitive ability involved, but there are also natural properties of phenomena in the perceived world that lend themselves to being attended to by human beings, and these properties are said to enhance those phenomena's **salience** to human beings' attention.

Attention is a complex psychological ability whose different aspects can be most easily illustrated by visual ability: one can select one object or another to focus one's attention on; focus of attention is surrounded by a scope of attention; one can take a more coarse-grained or more fine-grained view of a scene; and one can fix one's gaze on a scene or move one's eye over it. These four aspects of attention are found across all domains of thought.

3.2.1 Selection

The focal adjustment of **selection** is our ability to attend to parts of our experience that are relevant to the purpose at hand and ignore aspects of our experience that are irrelevant. The phenomenon of profiling a concept in a semantic frame, described in detail in chapter 2, is an example of selection. In most cases, different words in a semantic frame or domain focus our attention on the different elements in the frame, for example *radius*, *arc*, *circumference* in the CIRCLE frame. In other cases, derivational morphology shifts the profile, as in *writer*, whose *-er* suffix shifts the profile of *write* from process to agent. The participant that the *-er* suffix selects is not fixed to a single participant role but depends on salience, manifest both in conventionalized forms such as *stapler* (the instrument) or in novel forms such as *clapper* (Jane T., describing a lamp that turns on when you clap your hands).

Selection of the profile by a single underived word stem is also flexible and subject to construal. For example, many English nouns are also used as verbs (Clark and Clark 1979): *pan* can be construed as profiling either a metal object or a process in the GOLDSEEKING frame. Both the process and the metal object are salient in this frame, hence the choice of one word for both. Likewise, British English speakers can construe *bin* as profiling either a wastebasket or the action of tossing something into the wastebasket.

Such examples are not usually analyzed as examples of construal since the profile is of course central to a word's meaning and any shift in profile has truth-functional consequences. However, two semantic processes that involve subtler and/or more systematic shifts in profile lend themselves to a construal analysis.

The first example is the highlighting of different **facets** (see chapter 5) or domains in a domain matrix, as in (19)–(22):

notes that in (25)–(26), and (27b–c) as well, the effect of the semantic shift is to allow a more salient entity to be the semantic as well as syntactic argument of the verb (*I* instead of *my name*, *the piano* instead of *the sound of the piano*, *Monopoly* instead of *to play Monopoly*; Langacker 1991b:193). Nunberg argues that the primary 'pragmatic' constraint on predicate transfer is the noteworthiness of the relationship of the predicate to its argument in the context – in cognitive linguistic terms, its salience in the semantic frame. For example, *I'm in the Whitney Museum* (said by an artist about her painting) confers a noteworthy property to the artist of being represented in a major museum; the same artist saying *??I'm in the second crate on the right* does not (Nunberg 1995:113). Nunberg also notes that noteworthiness is subject to construal: a jealous painter might say *Those daubers get one-person shows while I'm relegated to a crate in the basement* (ibid., 129, n. 7).

3.2.2 Scope of attention (dominion)

The second aspect of attention is that the focus of attention – what is selected – is surrounded by a **scope** of attention, that is, a periphery of consciousness where entities are **accessible** to attention (Chafe 1994:29). We saw an example of scope of attention in §2.4, example (18e), repeated in (28):

(28) ??A body has twenty-eight knuckles.

In the scope of predication, the domains immediately presupposed by a profiled concept are accessible in a way that more indirectly presupposed domains are not (see §2.4, example [18]). This is a matter of construal; the scope of predication can shift in the appropriate context as in (29):

(29) A: We've found every bit of the body, sir – even the knuckles.
B: How many did you find?
A: Twenty-seven, sir.
B: Come on, now! How many knuckles does a body have?
A: Oh, you're right, sir. Twenty-eight.

Another example of a grammatical constraint that makes reference to the scope of attention has to do with a combination of locative expressions specifying a location:

(30) The money is in the kitchen, under the counter, in the lefthand cabinet, on the top shelf, behind the meat grinder.

Each locative expression profiles an entity in the scope defined by the preceding locative expression (i.e., the locative expression defines successively narrower **search domains**; Langacker 1987:286). Scrambling the order of locative

expressions creates cognitive chaos:

(31) The money is on the top shelf, in the kitchen, under the counter, behind the meat grinder, in the lefthand cabinet.

Yet another example of scope of attention is the notion of **accessibility** of a referent in discourse (Ariel 1990; Gundel et al. 1993; Chafe 1994). Consider the passage given in (32), from the Pear Stories narratives (Chafe 1980):

(32) And then definitely when he's up there,
. . a kid comes by on a bicycle.
From the direction where the goat man left,
okay?
A–nd . . u–m the bicycle's way too big for the kid.
I'm giving you all **these details**.
I don't know if you want **them**.

A third person pronoun such as *them* construes the referent as being in the focus of attention of the hearer, which is appropriate in (32) because the details have just been mentioned. However, when *details* is first uttered, the details are not in the focus of attention – they have not been mentioned as such – but they are in the scope of attention – the description in the preceding intonation units has been about the details of the film. The choice of the proximal demonstrative adjective *these details* construes the details as being in the hearer's scope of attention but not in focus (Gundel et al. 1993:275).

Langacker proposes a highly generalized concept of scope in terms of the **dominion** made accessible by a **reference point** which functions as the (initial) focus of attention (Langacker 1999, chapter 6). Langacker argues that reference point and dominion constitute the construal underlying the possessive construction: the 'possessor' in examples such as *my watch*, *your anxiety* and *Lincoln's assassination* functions as a reference point to establish a dominion in which the appropriate referent of the head noun can be selected. Langacker also extends his analysis to metonymy. For example, in (20c) above, the speaker focuses the hearer's attention on the city of Paris by using *Paris*. Paris then functions as a reference point whose scope or dominion includes its inhabitants; the inhabitants of Paris are therefore accessible as the subject referent for the predicate. Choosing *The people of Paris* instead of *Paris* in (20c) would construe the situation differently, putting the people in the focus of attention instead of in the dominion of another focus.

3.2.3 Scalar adjustment

The third aspect of attention is an adjustment of the scale of attention. It can be illustrated with a visual example (Talmy 1983:238):

(33) a. She ran across the field.
b. She ran through the field.

Examples (33a–b) could describe the same scene, but (33b) invites the hearer to attend to the thickness of the vegetation in the field by using a preposition requiring a three-dimensional volume; (33a) instead construes the field as a two-dimensional surface without thickness. To describe the conceptualization involved here, a metaphor of magnification or **granularity** is often used. Example (33a) offers a **coarse-grained** view of the field, seen as if from a distance so that the thickness of whatever covers the field is invisible to us. Example (33b) offers a **fine-grained** view of the field, as if our view was magnified to reveal its thickness. Examples (34a–c) provide a more elaborate example of granularity:

(34) a. We drove along the road.
b. A squirrel ran across the road.
c. The construction workers dug through the road.

In (34a), the road is viewed at such a coarse grain that it is conceptualized as a line, which provides a path for movement. In (34b–c), the same difference in granularity is found as in (33a–b): in (34b) the road is construed as a two-dimensional surface that can be traversed, and in (34c), the road is construed as a three-dimensional volume whose depth in this case can be an obstacle. At a coarse-grained view, the road's width and depth are reduced and lost, and the road is merely one-dimensional. At a more fine-grained view, or a greater magnification, the width of the road becomes visible, so to speak, and at a still finer-grained view/magnification, the depth becomes visible as well.

Examples (33)–(34) illustrate **quantitative scalar adjustment**:[4] a construal of an object by adjusting the granularity of the scalar dimensions, in this case the three spatial dimensions. Scalar adjustment is found in other measurable dimensions as well. For example, part of the difference in the construals of (2a–b) and (8a–b) in §3.1 is due to temporal scalar adjustment. In both cases, the progressive evokes a finer-grained scale than the simple present. In (8a), Ira's nuisance extends over a long period of time, possibly his entire lifetime; but in (8b), Ira's nuisance extends only over a brief time, that of his objectionable activity. In (2a), Conor's time in New York is conceived of as permanent, or at least construed as long-term, while in (2b), it is construed as short-term or temporary in the context of his lifetime.

Langacker also includes what he calls **schematization** under the same category. Schematization, that is, viewing something by means of a more encompassing

[4] Langacker calls this 'abstraction,' but that term is used for such a wide range of theoretical concepts, even in cognitive linguistics, that we choose a more precise term here.