The five texts that follow this introduction have been selected to provide a brief summary of a cognitive approach to lexical description that is appropriate for use in KTBH. One is from Langacker 1990 and the other four from Taylor 1995. Taylor's approach is based on Langacker 1987, so there should be a basic compatibility between the texts. Another file available on this site contains a summary of Relevance Theory.

Langacker - Cognitive Lexical Semantics | Taylor – Prototypes and Schemas | Domains and Schemas | Frames and Scripts | Polysemy and the Network Model

Five features of a cognitive linguistics approach to word meaning can be highlighted.

□ A cognitive linguistics approach can be characterised by saying that *meanings have words*, rather than *words have meanings*. This can be stated more formally by saying that words (and utterances) are *access points* to cognitive information: "The entity designated by a symbolic unit can… be thought of as a *point of access* to a [cognitive] network" (Langacker 1987:163)[1]. This approach is also found in Relevance Theory: "A coded stimulus gives… access to a… set of concepts" (Sperber and Wilson 1995:167).

□ Domains and frames: Langacker defines 'domain' as: "a coherent area of conceptualisation relative to which semantic units may be characterised" (1987:488). The idea is that a semantic concept such as 'knuckle' has meaning relative to 'finger', 'hand', etc., so these other concepts constitute a 'domain' for 'knuckle'. In a footnote in Langacker 1987, he points out that "a… domain is essentially equivalent to what… others have variously called a 'frame', 'scene', 'schema' or even 'script'…" (Langacker 1987:150). Taylor also points out that a 'frame' or a 'domain' is a chunk of related knowledge. However Taylor argues for 'frame' as a term which is "metatheoretically useful in addition to 'domain'" (Taylor 1995:87). Taylor's use of 'frame' can be equated with Langacker's 'complex matrix of domains': "most predications… require more than one domain for their full description, in which case I refer to the set as a 'complex matrix'" (1990:4). If more than one domain is involved in the complex matrix corresponding to a term, then such domains are also meaning-distinguishing, as Taylor points out with the example of 'mother' and 'father', based on Lakoff (1995:86).

□ The gestalt concept of 'figure' profiled against 'ground' is a basic feature of Langacker's approach: "I take it as established that figure/ground organisation is a valid and fundamental feature of cognitive functioning" (1987:120). In this sense, both 'frames' and 'domains' function as part of the 'ground' in the interpretation of an utterance. In addition, domains, in Taylor's meaning-distinguishing sense, can be thought of as 'grounds' against which frames or 'schematic networks' are profiled. Any knowledge network is 'profiled' against a more comprehensive knowledge network.

□ 'Category' in cognitive linguistics is used to refer to a cognitive categorisation of our experience of the world - that underlies the use of a word (not to a category or set of words) (Ungerer and Schmid 1996).

□ We can see the role of 'inference' in this in two ways. ○ Some sort of cognitive mechanism is needed to select the relevant part of the 'schematic network' or 'frame', when an utterance is interpreted; we can think of this as 'inference' - compare Langacker's use of the term 'activation'.

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[1]Langacker (1999:4) "A lexical item is not thought of as incorporating a fixed, limited, and uniquely linguistic semantic representation, but rather as providing access to indefinitely many conceptions and conceptual systems, which it evokes in a flexible, open-ended, context-dependent manner. …a lexical item evokes a set of cognitive domains as the basis for its meaning, and exhibits considerable flexibility in this regard."

○ In addition, the actual situation being described by the speaker may need to be imagined in more or less detail by the hearer or reader. Relevance Theory uses the term 'ad hoc' for this part of the inferential process.

Langacker,R.W. 1987. *Foundations of Cognitive Grammar*. Stanford:Stanford University Press.

Langacker,R.W. 1990. *Concept, Image and Symbol*. New York:Mouton de Gruyter.

Sperber, D. and D. Wilson 1986. *Relevance: Communication and Cognition,* Oxford: Basil Blackwell.

Taylor, J.R. 1995. *Linguistic Categorization*. Oxford:Oxford University Press.

Ungerer, F. and H.-J. Schmid. 1996. *An Introduction to Cognitive Linguistics*. London and New York: Longman.

Cognitive Lexical Semantics
(Langacker 1990:2-5)

[This excerpt seems to summarise well Langacker's approach to a cognitive account of the lexicon. A fuller account is found in Langacker 1987:147-166 on Domains, and 1987:369-386 on Schematic Networks. The following terms are used in the article and partly defined: *activation, centrality, domain, extension, network, prototype, schema and schematic*.]

Meaning is equated with conceptualisation. Linguistic semantics must therefore attempt the structural analysis and explicit description of abstract entities like thoughts and concepts. The term conceptualisation is interpreted quite broadly: it encompasses novel conceptions as well as fixed concepts; sensory, kinaesthetic, and emotive experience; recognition of the immediate context (social, physical, and linguistic); and so on. Because conceptualisation resides in cognitive processing, our ultimate objective must be to characterize the types of cognitive events whose occurrence constitutes a given mental experience. The remoteness of this goal is not a valid argument for denying the conceptual basis of meaning.

Most lexical items have a considerable array of interrelated senses, which define the range of their conventionally sanctioned usage. These alternate senses are conveniently represented in network form; Figure 1 depicts a fragment of the network associated with the noun *ring*. Certain senses are 'schematic' relative to others, as indicated by the solid arrows. Some represent 'extensions' from others (i.e. there is some conflict in specifications), as indicated by the dashed-line arrows. The nodes and categorising relationships in such a network differ in their degree of entrenchment and cognitive salience - for instance, the heavy-line box in Figure 1 corresponds to the category prototype. The precise configuration of such a network is less important than recognising the inadequacy of any reductionist description of lexical meaning. A speaker's knowledge of the conventional value of a lexical item cannot in general be reduced to a single structure, such as the prototype or the highest-level schema. For one thing, not every lexical category has a single, clearly determined prototype, nor can we invariably assume a high-level schema fully compatible with the specifications of every node in the network (none is shown in Figure 1). Even if such a structure is posited, moreover, there is no way to predict precisely which array of extensions and elaborations - out of all those that are conceivable and linguistically plausible - have in fact achieved conventional status. The conventional meaning of a lexical item must be equated with the entire network, not with any single node.
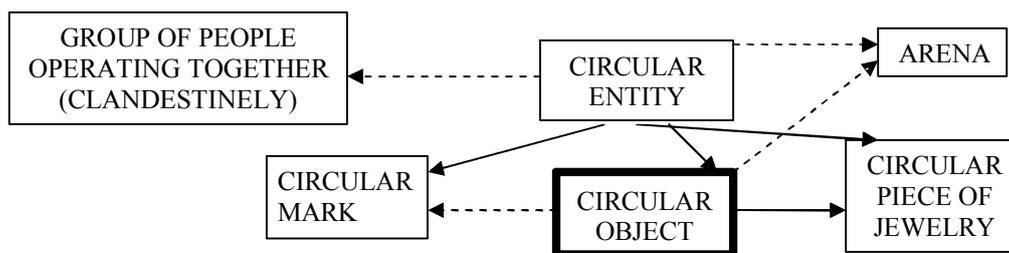
```
GROUP OF PEOPLE                           ┌──────────┐           ┌─────────┐
OPERATING TOGETHER  ◄ ─ ─ ─ ─ ─ ─ ─ ─ ─   │ CIRCULAR │ ─ ─ ─ ─ ► │  ARENA  │
(CLANDESTINELY)                           │  ENTITY  │           └─────────┘
```

Figure 1

Because polysemy is not our central concern, we will nevertheless focus on individual nodes. What is required to adequately characterize any particular sense of a linguistic expression? Specifically rejected is the idea that a semantic structure reduces to a bundle of features or semantic markers (cf. Katz & Fodor 1963). Rejected as well is the notion that all meanings are described directly in terms of semantic primitives. It is claimed instead that semantic structures (which I call 'predications') are characterized relative to 'cognitive domains', where a domain can be any sort of conceptualisation: a perceptual experience, a concept, a conceptual complex, an elaborate knowledge system, etc. The semantic description of an expression therefore takes for its starting point an integrated conception of arbitrary complexity and possibly encyclopaedic scope. The basic observation supporting this position is that certain conceptions presuppose others for their characterization. We can thus posit hierarchies of conceptual complexity, where structures at a given level arise through cognitive operations (including simple coordination) performed on the structures at lower levels. Crucially, the cognitive domains required by linguistic predications can occur at any level in such hierarchies.

Consider some examples. The notion *hypotenuse* is readily characterized given the prior conception of a right triangle, but incoherent without it; *right triangle* therefore functions as the cognitive domain for *hypotenuse*. Central to the value of *elbow* is the position of the designated entity relative to the overall configuration of the human arm (try explaining what an elbow is without referring in any way to an arm!), so arm is a domain for *elbow*. Similarly, *tip* presupposes the conception of an elongated object, and *April*, of the calendrical cycle devised to plot the passage of a year. A meaningful description of *shortstop or sacrifice fly* is possible only granted substantial knowledge of the rules and objectives of baseball. The implications of this position are apparent: the full and definitive characterization of a semantic structure must incorporate a comparable description of its domain, and ultimately of the entire hierarchy of more fundamental conceptions on which it depends. Pushing things to their logical conclusion, we must recognize that linguistic semantics is not an autonomous enterprise, and that a complete analysis of meaning is tantamount to a complete account of developmental cognition. This consequence is terribly inconvenient for linguistic theorists imprinted on autonomous formal systems, but that is not a legitimate argument against its validity.

What occupies the lowest level in conceptual hierarchies? I am neutral as to the possible existence of innately specified conceptual primitives. It is however necessary to posit a number of "basic domains", i.e. cognitively irreducible representational spaces or fields of conceptual potential. Among these basic domains are the experience of time and our capacity for dealing with two- and three-dimensional spatial configurations. There are basic domains associated with the various senses: colour space (an array of possible colour sensations), coordinated with the extension of the visual field; the pitch scale; a range of possible temperature sensations (coordinated with positions on the body); and so on. Emotive domains must also be assumed. It is possible that certain linguistic predications are characterized solely in relation to one or more basic domains, e.g. time

for *before,* colour space for *red,* or time and the pitch scale for *beep.* However most expressions pertain to higher levels of conceptual organization and presuppose nonbasic domains for their semantic characterization.

Most predications also require more than one domain for their full description, in which case I refer to the set as a 'complex matrix', as illustrated for *knife* in Figure 2. One dimension of its characterization is a shape specification (or a family of such specifications). Another is the canonical role of a knife in the process of cutting. Additional properties are its inclusion in a typical place setting with other pieces of silverware; specifications of size, weight, and material; information about the manufacture of knives; the existence of knife-throwing acts in circuses; and so on indefinitely. Obviously these specifications are not all on a par. They differ greatly in their degree of 'centrality', i.e. the likelihood of their activation on a given occasion of the expression's use Moreover, some are probably incorporated as components of others - for instance, Figure 2 plausibly suggests that a shape specification is typically included in the conceptions constituting
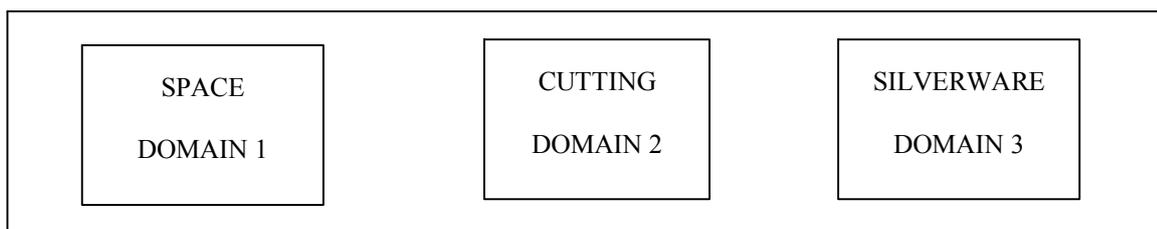
SPACE DOMAIN 1	CUTTING DOMAIN 2	SILVERWARE DOMAIN 3

Figure 2.

other domains of the complex matrix. I do however adopt an 'encyclopaedic' view of semantics (Haiman 1980). There is no sharp dividing line such that all specifications on one side are linguistically relevant and all those on the other side clearly irrelevant. Any facet of our knowledge of an entity is capable in principle of playing a role in determining the linguistic behaviour of an expression that designates it (e.g. in semantic extension, or in its combination with other expressions).

Langacker,R.W. 1987. *Foundations of Cognitive Grammar.* Stanford:Stanford University Press.

Prototypes and Schemas
(Taylor 1995:65-68)

The importance of extension from a prototype as a principle of category structure has been recognized by a number of linguists in recent years (e.g. Jackendoff 1983). Here, I want to focus on the position taken by Langacker (1987). For Langacker, extension from a prototype coexists with a second structuring principle, namely elaboration of a schema. The difference is explained as follows:

"A prototype is a typical instance of a category, and other elements are assimilated to the category on the basis of their perceived resemblance to the prototype; there are degrees of membership based on degree's of similarity. A schema, by contrast, is an abstract characterization that is fully compatible with all the members of the category it defines (so membership is not a matter of degree); it is an integrated structure that embodies the commonality of its members, which are conceptions of greater

specificity and detail that elaborate the schema in contrasting ways" (Langacker 1987:371).

Schemas may be hierarchically organized within a category, in conjunction with extension from prototypes. Consider Langacker's account of how the concept 'tree' might be acquired (1987:373ff). Langacker speculates that initially, the language learner associates the word *tree* with specific instances of large, deciduous leafed plants, e.g. with oaks, elms, and maples. He then extracts from these instances a schematic representation of what they have in common. We may call this representation TREE[1]. This representation now functions as a prototype. Pine trees get associated with the category on the basis of similarity along some dimensions with the prototype, even though pine trees are not fully compatible with the TREE[1] schema, e.g. they don't have leaves. Once pines are associated with the category, the learner can now extract a further schema, TREE[2], which represents what is common to TREE[1] and pines, e.g. a tall central trunk with branches. TREE[2] now functions as a prototype for extension of the category to palm trees; palms share with the prototype a tall central trunk, they do not, however, branch. The commonalities between TREE[2] and palms permit the extraction of a more abstract schema still, TREE[3]. Further elaboration of the category is possible. FRUIT TREE, for example, may emerge as a sub-schema of TREE[1], while TREE[2] may function as a prototype for metaphorical extension, i.e. genealogical trees and the phrase structure trees of linguistic description get associated with TREE[2] on the basis of their branching structure.

If one examines more closely the distinction between categorization by prototype and categorization by schema, it becomes clear that categorization by schema and categorization by prototype are in reality aspects of the same phenomenon. In the former case, an entity happens to be fully compatible with an abstract representation, in the latter case, it is only partially compatible. Whether in any particular instance the analyst invokes a prototype or a schema would appear to depend on the degree of abstractness which he is willing to attribute to a speaker's mental representation. Possibly, all trees *can* be subsumed under a highly abstract representation TREE[3]. Equally, the category could be structured around a rather more concrete prototype representation. Langacker does indeed envisage the possibility of alternative structures. He writes that "it is possible in principle to conceive of a shape specification schematic enough to neutralize the differences between an Alsatian and a poodle, while still being recognizable as that of a dog" (Langacker 1987:136f.), mentioning in a footnote the alternative option that "a person may rely on the more precise shape specification of a prototypical dog, recognizing other shapes as extensions from the prototype."

In this book I shall emphasize categorization by prototype rather than categorization by schema [Taylor's position on this seems modified in section 14.5, reproduced below, which is an addition to the 1985 edition]. In this, I come rather close to the admittedly extreme position which Bolinger appears to adopt, when he writes that "every equation that does not express identity (a dog is a dog) is an extension" (1980:145). There are a number of reasons for my focus on prototypes to the neglect of schemas. Firstly, for many categories of natural language, it is just not possible to abstract a schema which is compatible with *all* the members of the category. Some striking examples will be discussed in later chapters. Even if a schema of sufficient generality can be extracted, the schema might not be restrictive enough. Consider the possibility of an abstract tree-schema which encompasses oak trees, pine trees, family trees, and phrase structure trees. What these different kinds of tree have in common is the fact that they branch, in some literal or metaphorical sense. Yet not everything that branches is a tree; one could not, for instance, refer to a road branching at a Y-junction as a tree. Yet the tree-schema is elaborated by a branching road just as much as by a branching syntactic structure. My second reason for focusing on prototypes has to

do with Langacker's observation that categorization by prototype and categorization by schema give rise to different predictions concerning degree of membership judgements, i.e. with categorization by schema "membership is not a matter of degree". We have seen in the last chapter, however, that for very many categories, membership clearly *is* a matter of degree. Thirdly, while recognizing that speakers can and do structure categories by schema, I would suggest that categorization by prototype occurs developmentally prior to categorization by schema. (See Chapter 13, Section 4, for further discussion.) The increasing abstractness required of schematic representations suggests that schemas may only be accessible to more sophisticated, reflective language users. Possibly, one of the hallmarks of formal education is precisely that it encourages an individual to reflect consciously on the commonality of category members.

Domains and Profiling
(Taylor 1995:83-87)

We can begin with what is, I think, a fairly unproblematic assertion: meanings do not exist in themselves. In denying that meanings of linguistic forms constitute independently existing entities, cognitive and structuralist linguistics are in agreement. For both cognitivists and structuralists, meanings are context dependent. For the structuralist, however, context dependency is a matter of the syntagmatic and paradigmatic relations between signs within the linguistic system, i.e. the context for the definition of a meaning is language internal. We saw at the close of Chapter 2 how this eminently Saussurian notion has been implemented to the present day, as shown by the citations from Lyons, Nida, and Cruse. For cognitivists, on the other hand, the context against which meanings are characterized is external to the language system as such. Meanings are cognitive structures, embedded in patterns of knowledge and belief in stark contrast to the structuralist approach, a meaning is, in principle, independent of whatever other cognitive structures happen to be lexicalised in a particular language. Bickerton (1981:230f) claimed that the meaning of *toothbrush* is delimited by the meanings of other items in the linguistic system, such as *nailbrush* and *hairbrush.* But is it really plausible that a person who does not have the words *nailbrush* and *hairbrush* in his vocabulary would understand *toothbrush* differently from those people who do know what nailbrushes and hairbrushes are? Surely, *toothbrush* derives its meaning from the role of toothbrushes in dental hygiene, and not from paradigmatic contrasts with other terms in the language system. The concept 'toothbrush' has nothing whatever to do with the way people clean their nails, adjust their hair, or sweep their floors.

In general, we can only understand the meaning of a linguistic form in the context of other cognitive structures; whether these other cognitive structures happen to be lexicalised in the language is in principle irrelevant. To take a simple, though telling example: what is the meaning of the word *Monday?* Clearly, *Monday* can only be explicated in the context of the concept 'week'; someone unfamiliar with the notion of the seven-day week would have no basis for an understanding of *Monday.* 'Week', in turn, must be understood in terms of the recurring day-night cycle. Ultimately, the concepts 'day', 'week', and 'Monday' are understood against the concept of time. Similarly, *up* and *down, high* and *low, rise* and *fall* can only be explicated against the notion of three-dimensional, gravitational space; *in* and *out, enter* and *exit* require the notion of a three-dimensional container; *wing* presupposes 'bird' (or 'aeroplane'), *birth, old age,* and *death* presuppose a knowledge of the life cycle, *heavy* requires reference to the notion of 'weight', and so on, throughout the dictionary.

We shall say, following Langacker (1987:147ff.), that the seven-day week is the semantic 'domain' against which *Monday* is understood, and that the day-night cycle is the domain for an understanding of *week*. Similarly, three-dimensional space is the domain against which *up* and *down* are understood, while a three-dimensional container is the domain of *in* and *out*. In principle, any conceptualisation or knowledge configuration, no matter how simple or complex, can serve as the cognitive domain for the characterization of meanings. Neither should we restrict ourselves, in this discussion, to the meanings of lexical items. Morphological and syntactic categories also need to be understood against the relevant domain. For instance, the diminutive (in its basic sense) presupposes the domain of physical size, the domain for the understanding of the past tense (in its past-time reference) is time, and so on.

A linguistic form gets its meaning by 'profiling', or highlighting, a particular region or configuration in the relevant domain. Profiling entails the structuring of a domain by means of an appropriate 'schema', or set of schemas.[2] The concepts 'week', 'day', and 'Monday' emerge when a bounding schema profiles bounded regions in the domain of time; a sequencing schema structures the concept 'week' into a succession of discrete bounded entities; and a further schema profiles the first of these successive units. *Up* and *down* impose an up-down schema on the domain of vertical space; *in* and *out* get their meanings through a containment, or, respectively, an exclusion schema; *wing* profiles a particular region of its domain by means of the part-whole schema; and so on.

Time and three-dimensional space, in the above examples, constitute what Langacker (1987:148) calls 'basic domains', i.e. the concepts of time and space are not reducible to other, more primitive cognitive structures. Other basic domains include sensory experiences like temperature, colour, taste, and pitch, and perhaps certain psychological states like pleasure and enthusiasm. Lakoff (1987) has drawn attention to the role of a small number of basic schemas in the structuring of domains. In addition to those already mentioned (boundedness, part-whole, containment, up-down), Lakoff mentions the journey schema with its constituent parts of source, path, and goal, and the schemas of linkage and separation, and of proximity and distance. As we shall see in Chapter 7, these and other schemas are crucially involved in any proper understanding of processes of metaphorisation.

Some of the examples given so far, like *up* and *in,* can be explicated very simply with reference to a single domain. Very often a linguistic form needs to be characterized against a number of different domains simultaneously. *Golfball* is understood partly in terms of typical shape (i.e. golfballs are bounded entities in three-dimensional space), as well as colour, size, material, texture, etc. A full understanding of the word also requires reference to the set of rules and activities which together constitute the game of golf. Similarly *Monday* is not only the first day of the week; a full understanding of the word needs to make reference to the division of the week into periods of leisure (i.e. the weekend) and periods of work, Monday being the first day of the working week after the weekend. Sometimes one of the domains associated with a lexical item might be more salient than others. In this connection, Langacker (1987:165) distinguishes between primary and secondary domains. *Salt,* in its everyday sense (i.e. 'table salt'), is primarily associated with the domain of food: salt is a substance added to certain kinds of food in order to enhance their flavour; only secondarily is its chemical composition at issue. *Sodium chloride,* an expression with the same reference, is understood against the domain of chemical composition, and only secondarily in terms of its role as a food additive. Other near synonyms may be distinguished with respect to the

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[2] The term 'schema', or 'image schema', is taken from Lakoff (1987). Lakoff's schemas are not to be confused with Langacker's use of the word to refer to the abstract representation of what is common to the members of a category.

different domains against which they are understood. *On land* evokes the domain of a sea voyage; *on the ground,* in contrast, evokes the domain of a flight through the air (cf. Fillmore 1979b:97).

A rather more complex example of a lexical item being characterized against several domains simultaneously has been provided by Lakoff (although Lakoff does not use the term 'domain') in his discussion of the word mother (Lakoff 1987:74ff.). Lakoff points out that we need to take into consideration at least five domains (in addition to those which characterize *mother* as a human female) for any adequate understanding of the word. These are:

(a) the genetic domain. A mother is a female who contributes genetic material to a child;

(b) the birth domain. A mother is a female who gives birth to the child;

(c) the nurturance domain. A mother is a female adult who nurtures and raises a child;

(d) the genealogical domain. A mother is the closest female ancestor;

(e) the marital domain. The mother is the wife of the father.

We can compare the domains against which *mother* is understood with the domains necessary for a full understanding of *father.* Again, five domains seem to be implicated:

(a) the genetic domain. A father is a male who contributes genetic material to a child;

(b) the responsibility domain. The father is financially responsible for the well-being of the mother and the child;

(c) the authority domain. The father is a figure of authority, responsible for the discipline of the child;

(d) the genealogical domain. The father is the closest male ancestor;

(e) the marital domain. The father is the husband of the mother.

It is clear from this account that the meaning of *father* is not, as the componentialists and structuralists would maintain, identical to mother*,* but for the feature [MALE] rather than [FEMALE). Only with respect to the genetic, genealogical, and marital domains are the two concepts at all comparable.

Frames and Scripts
(Taylor 1995:87-90)

Langacker has pointed out that his construct of 'domain' - especially in cases where the domain is cognitively quite complex, or where a linguistic form needs to be characterized against several domains simultaneously - overlaps to a large extent with what others have referred to variously as 'frames', 'scripts', 'schemata', 'scenes', 'scenarios', 'idealized cognitive models', and so on… The terminology in this area is confusing, partly because different terms may be used by different authors to refer to what seems to be the same construct, or the same term may be used to refer to very different constructs. Furthermore, it is not at all clear that it is possible to make clean conceptual distinctions in this area. Nevertheless, I have found the term 'frame' to be metatheoretically useful in addition to 'domain'. In the following, 'frame' will refer to the knowledge network linking the multiple domains associated with a given linguistic form. We can reserve the term 'script' for the temporal sequencing and causal relations which link events and states within certain action frames.

Frames and scripts are constructs which were originally developed by researchers in the field of artificial intelligence. The constructs made it possible to represent in computer memory those aspects of world knowledge which appear to be involved in the natural processing of texts. The constructs have also proved invaluable in studies of natural comprehension. According to de Beaugrande and Dressier (1981:90), frames constitute 'global patterns' of 'common sense knowledge about some central concept', such that the lexical item denoting the concept typically evokes the whole frame. In essence, frames are static configurations of knowledge. Scripts, on the other hand, are more dynamic in nature. Typically, scripts are associated with what we have referred to earlier as basic level events such as 'do the washing up' and 'visit the doctor', which are structured according to the expected sequencing of subordinate events (cf. Rosch 1978).

As an illustration of the notion of frame, let us reconsider Lakoff's discussion of *mother*. The five domains against which this word needs to be characterized do not constitute a random set. It is the structured whole that I shall call the 'mother frame'. According to the mother frame, a mother is a woman who has sexual relations with the father, falls pregnant, gives birth, and then, for the following decade or so, devotes the greater part of her time to nurturing and raising the child, remaining all the while married to the father. In such a situation, all five domains converge. Clearly, such a scenario is highly idealized, in that the frame abstracts away from its many untypical instantiations. Unmarried mothers renounce, for whatever reasons, the marriage relationship with the father; in the case of children given for adoption, there is a split between the genetic and birth domains on the one hand and the nurturance domain on the other; surrogate motherhood results in a splitting off of the genetic domain from the birth domain; alternatively the nurturance domain might undergo a split, in that the birth-giving mother remains responsible for nurturance, while the actual job of nurturing is taken over by someone else, e.g. a nanny or a grandparent. It is, of course, against the background of the idealized scenario that we characterize a prototypical mother. Adoptive mothers, surrogate mothers, stepmothers, unmarried mothers, widowed mothers, uncaring mothers, even perhaps so-called working mothers, are more marginal members of the category. Ultimately, the frame embodies deeply held beliefs about the status and role of the family in society. To this extent, it is irrelevant to ask whether prototypical mothers are in fact of more frequent occurrence than less prototypical members of the category. Some people might well believe that the idealized scenario does in fact constitute the norm; others might be more sceptical, but might at the same time believe in the desirability, at least, of the idealized scenario, while others vehemently reject it for its sexist assumptions. Neither is the idealized scenario immune to change. Some readers might feel that my account of prototypical motherhood is already outdated.

Clearly, then, frames do not necessarily incorporate scientifically validated knowledge of the world. Take again the example of *Monday*. We would want to include in the frame the knowledge that Monday is the first working day after a culturally institutionalised weekend, that on Mondays people reluctantly return to the routine of work after their weekend leisure, and that it generally takes them a little time to readjust to the work pattern. Again, the knowledge is idealized. It is hardly relevant to housewives, or to people who work at weekends and have Mondays free. Other people are only too happy to return to work after the boredom of their weekend, while people on vacation have both weekends and Mondays free. And, just as with the *mother* example, the idealization of the frame seems to rest, ultimately, on deeply entrenched cultural beliefs and practices. In this case we have to do with the division (inherited from the Jewish tradition) of one's waking life into periods of work and periods of rest.

As mentioned in the introduction to this chapter, the mental lexicon, although encyclopaedic in nature, includes but a subset of a person's total knowledge. But where, and on what basis, does one

draw the line? Brown and Yule consider that the outstanding problem for frame and script theory is to find 'a *principled* means' for distinguishing between those aspects of world knowledge that are relevant to text processing, and those which are not (1983:244; authors' emphasis). Wierzbicka (1985) also recognizes the importance of this issue by consistently making a distinction between knowledge *of* a concept and knowledge about a concept. Relevant to this distinction is whether a particular piece of knowledge associated with a concept shows up in linguistic expressions. Thus Wierzbicka's definition of elephant includes the encyclopaedic information that elephants are reputed to have long memories, presumably because of the existence of the catch phrase in English Elephants never forget. On the other hand, other facts about elephants - e.g. that they are a threatened species - are not included in her definition. But, it might be objected, does not this distinction, assuming we agree on the means for drawing it, merely reinstate the old distinction between linguistic and non-linguistic knowledge? Admittedly, the boundary is drawn in a different place, but is it not the same kind of distinction that is being made?

The objection is unjustified, as it presupposes a clear dividing line between linguistically relevant and linguistically irrelevant knowledge. Frames, as I have stressed, are configurations of conventionalised knowledge. Most importantly, the knowledge encapsulated in a frame is knowledge which is shared, or which is believed to be shared, by at least some segment of a speech community. In principle, any scrap of knowledge, even the most bizarre, can get absorbed into a frame, provided the association is shared by a sufficient number of people. Langacker (1987:160) notes that Jimmy Carter's presidency had a substantial, albeit transient, effect on the meaning *of peanut.*

Polysemy and the Network Model
(Taylor 1995:281-289)

An evaluation of the two-level approach involves several issues. One of these concerns the proposed distinction between a level of linguistic-semantic meaning, and a level of non-linguistic, conceptual meaning. Logically independent of the semantic-conceptual split is the issue of the legitimacy, in principle, of abstract schematic representations of word meanings.

On the first issue, it should be borne in mind that the two-level approach is by no means unique in proposing a bifurcation of meaning into a purely linguistic component, and a non-linguistic, or encyclopaedic, component. On the contrary, the bifurcation is a common thread running through much semantic theorizing of the last couple of decades. The distinction is fundamental to Montague grammar, it turns up in Jackendoff's recent work, Sperber and Wilson's (1986) relevance theory is predicated upon it, Searle (1980 and 1983) appealed to it in his analysis of *cut* and *open,* as did Katz and Postal (1964) with their distinction between semantic markers, which are responsible for systematic contrasts in a language, and distinguishers, which capture the idiosyncratic residue (see Chapter 2, p33f).

Indeed, the very postulate of an autonomous language faculty (see Section 1.4) entails the distinctiveness of linguistic knowledge vis-à-vis conceptual, and encyclopaedic knowledge. Equally, a number of linguists, of various theoretical persuasions, have been highly sceptical of the very basis of the linguistic-conceptual bifurcation. Critics have included Bolinger (1965), Sampson (1980a), Haiman (1980), Geeraerts (1985b), Langacker (1987), and many others. In fact, the thesis that meaning is inherently and essentially encyclopaedic in scope has become a kind of hallmark of the cognitive linguistic approach advocated in this book (see especially Chapter 5).

The second issue, the legitimacy, in principle, of highly schematic representations of word meanings, is perhaps less controversial. I imagine that a good many linguists-including many of those who subscribe to an encyclopaedist semantics-might well endorse the 'methodological principle' of trying to cover as many uses as possible by a unique semantic representation. Even Langacker might not be entirely unsympathetic. Whilst Langacker (1991:194) takes it for granted that polysemy is 'the normal state of affairs' in lexical semantics, he has also devoted considerable attention to the search for maximally general characterizations of such things as the semantic import of word classes (alluded to in Section 10.3), the meaning of the possessive morpheme in English (Langacker 1991:172), and a general characterization of that most elusive of the English prepositions, *of* (Langacker 1992).

There can therefore be no quarrel in principle with the idea of general characterizations of words such as *in* and *round,* which propose to capture what is common to many different uses of the words. (This said, I doubt, in the case of *round,* whether *all* uses could be subsumed under a single entry; and, as already pointed out, the general characterizations will in any event need to be supplemented by information on the range of accepted and language-specific instantiations of the general meaning. A general notion of containment, say, for *in,* or a general notion of encirclement for (some uses of) *round,* are unobjectionable. But I see no reason why these general characterizations should be any less 'conceptual' in content than the more specific readings; it is just that the general meanings lack the detail associated with the more specific meanings. The more abstract senses are therefore not ontologically distinct from the specific senses; they are still understood in experiential, imaginistic terms, just like the specific readings, rather than in terms of a disembodied logic of space.

Over and above the legitimacy, in principle, of general as opposed to specific semantic statements, there is an empirical question. This concerns the level of abstraction at which word meanings actually *are* stored in the mind of a speaker, and the level at which speakers actually *do* access word meanings in the process of producing and understanding language.

It is commonly agreed that a word may typically be used in a variety of contexts, to denote a range of different kinds of situation. It does not follow that each of these different contextual variants is separately stored in the mind of the speaker/hearer; it could be that a person accesses a rather more abstract representation, and derives contextual variants by some general processes of conceptual elaboration, possibly along the lines suggested by the two-level theorists.

On the other hand, the fact that an ingenious linguist may be able to come up with a maximally general semantic statement which covers a wide range of different uses does not entail that speakers of a language do store the word meaning in the abstract format, and that they do implement a process of conceptual elaboration, on each occasion of the word's use. It could be that at least some of the variants are mentally stored and can be directly accessed in the production and comprehension of language.

Neither do we have to regard the two perspectives as mutually exclusive. It seems to me perfectly plausible that a speaker can store *both* a range of specific uses of a word, *and* a more abstract representation that captures what is common to the more specific uses. Indeed, there seems no a priori reason why a speaker should not store a number of representations of varying degrees of abstraction.

Methodological objections might be raised against such a proposal. If different uses of a word *can* be covered by a single semantic entry, why clutter up the grammar with a list of specific and more or less predictable instantiations of the general entry? Surely, the very essence of linguistic enquiry

(as we tell our first-year students) is, precisely, the formulation of general statements, not the listing of specific instances covered by the general statements!

Yet there is considerable circumstantial evidence that speakers of a language do associate words with a range of rather specific readings. To the extent that a linguist's description of a language is meant to model the native speaker's acquired knowledge of the language - to the extent, that is, that a linguist's grammar is supposed to be 'psychologically real' - it will need to take account of this evidence. A major weakness of the two-level approach, it seems to me, is that it denies in principle the possibility of stable mental representations of specific meanings. To allow that more specific readings (such as the 'circumvent-a-hindrance' sense of *round)* are separately stored in the mental lexicon would threaten the very architecture of the two-level model.

(a) There are, first of all, the well-known and well-documented prototype effects. If a person is asked to come up with sentences exemplifying a target word, then, with remarkable consistency, certain uses will be cited earlier, and more frequently, than others. I have already mentioned (pp117f.) the results of a small investigation with *over.* Similar tests with *round* consistently generated instances of sense (a) in Fig. 14.1, of the kind *The Earth goes round the Sun.* These results suggest that certain readings of a word have a privileged status in the mental lexicon, and can be accessed more easily than others. Such a possibility is incompatible with the assumption that each reading of a word is generated from a unique representation.

(b) Speakers of a language are generally hard put to state the general meaning of a word, the more so if the word is one in common use. A person has no problems at all to explain what *open the door* means. But ask someone for the general meaning of *open,* abstracted away from various uses of the verb *(open the door, open the office, open a newspaper, open a parcel, open a penknife, open a zip),* and they find the task embarrassingly difficult. It might be premature to conclude from this that the mental lexicon contains only the specific readings of the word, to the exclusion of a general characterization. The generative paradigm (of which the two-level model is an offshoot) accepts that people do not have conscious access to the rules and representations which underlie their linguistic performance. Still, it seems rather perverse to insist that speakers and hearers, in their everyday use of language, *do not* access specific senses that are readily available to introspection, and that they *do* access an abstract sense that is hardly available at all to introspection.

(c) Speakers of a language are able to give quite reliable judgements of degrees of similarity between the different senses of a word. This is true not only of words such as *body,* whose different meanings ('physical being', 'main part') are markedly dissimilar (Durkin and Manning 1989), but also for the more closely related meanings of a preposition such as *round.* Schuize (1991) reports a number of experiments investigating similarity judgements pertaining to twenty different uses of *(a)round.* These judgements were subjected to the statistical procedure of hierarchical cluster analysis. The clusters that emerged can plausibly be taken as indications of the salience, at varying levels of abstraction, of different senses of the preposition. Of special interest is the emergence of clusters that appear to correspond, rather closely, to the distinct senses sketched in Fig. 14.1. One such cluster corresponds to the 'circumvent-a-hindrance' sense of *round;* this sense, then, appears to be more than just a 'conceptual variant', induced by a context-specific focusing strategy. A further point: Inspection of Schulze's results lends little support to the thesis, which we briefly entertained as one which the two-level approach might favour, that *round* might be homonymous; the 'random path/location within a bounded area' sense does *not* emerge as totally unrelated to the other uses of *round.*

These findings are just what we should expect, given the assumption that different readings of

round are structured in a radial category. But the findings are quite inexplicable on the assumption that the mental lexicon contains only the most abstract representation, and that *all* senses of a word derive equally, by a process of conceptual interpretation, from this abstract representation.

(d) Processes of metaphorical extension typically apply to a rather specific sense of a word, not to the most general. The *boy got round his mother,* in the sense 'the boy got his mother to let him have his own way', conceptualises a person's actions as a path, and circumstances that frustrate the achievement of an intended action as obstacles on the path. The metaphor is sanctioned by the specific 'circumvent-a-hindrance' sense of *round,* not by the general encirclement sense, or whatever. The very existence of the metaphor, and the fact that it is so readily understood along the lines suggested, suggests that speakers have access to a stable mental representation of this specific sense of *round.*

(e) Very important is the evidence of semantic change, a topic not touched on, to my knowledge, by the two-level theorists. Semantic change typically involves a shift in the relative frequency and relative salience of different readings. What might start out as a one-off, context-dependent extension acquires, through time, and with repeated use, the status of an established sense, perhaps even the prototypical sense, whereby the original sense(s) may get pushed to the periphery, and eventually fall into disuse. Geeraerts (1985 a) documents just such a process. The process presupposes that speakers can keep track of the different readings of a word, with respect to frequency and centrality. This, as Geeraerts (1993) has also pointed out, in turn presupposes that speakers have access to stable mental representations of these specific readings.

(f) Even assuming that speakers do store highly abstract representations of the words of their language, we need to ask how a language learner could acquire these abstractions in the first place. Words-it seems safe to say-are learned on examples of their use. It seems rather implausible that the child language learner (or an adult learner, for that matter-for it is not just pre-school children who learn new words, adults do so too), after having encountered a new word for the first time, will instantaneously construct a highly abstract sense On the contrary, the initial representation, we may suppose, will be rather specific, and rich in contextual detail. Acquisition then proceeds both *horizontally* (new uses are associated through similarity with already familiar uses) and *vertically* (as different uses become familiar, a more schematic representation may be abstracted, which captures the commonality of known uses, and which also sanctions a range of new usage possibilities). There is no reason to suppose, however, that as more schematic representations emerge, the more specific representations on which they are based will necessarily be erased.

Just this possibility is foreseen by Langacker's *network model* of category structure. The model was introduced in Section 4.2, on the example of the word *tree;* for a fuller account and for more detailed illustration, see Langacker (1988). According to the model, the established senses of a word constitute the nodes of a possibly complex, extended network. The senses are linked, horizontally by relations of similarity, and vertically by the relation of a schema and its instanti-ations. The nuclear structure of the network is depicted in Fig. 14.2. Sense [B] is an extension of sense [A], that is, [B] is perceived to be similar, in some respects to [A]; sense [C] is schematic for both [A] and [B], that is, it captures, at a level which abstracts away from the specific differences between [A] and [B], the commonality between them. We can imagine that the lowest nodes of a network might comprise specific collocations (and their conventionalised meanings) of a lexical item, which may be accessed as preformed chunks; but the possibility of more abstract representations, perhaps even of a 'super-schema', which covers the full range of particular uses of an item, is not denied. What the network model does deny is that the most abstract representation is always and necessarily invoked in the under-standing of contextual variants.
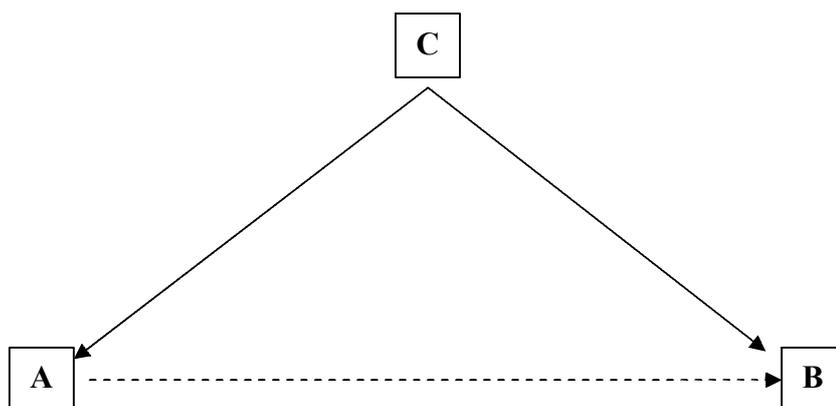
FIG. 14. 2 *The network structure*

Consider what it means for a person to know the meaning of a word. *(Mutatis mutandis,* the following remarks apply also to knowing the meaning of a bound morpheme, a syntactic construction, an intonation melody.) Take Searle's example of the verb *open.* A person encounters the word in a wide range of contexts. Some of these may be perceived to be similar in some respects. *Open the office, open a parcel, open an envelope,* all have the idea of gaining access to the interior of a closed container. Other uses focus on the manner in which access is gained, namely by manoeuvring some device in order to create an aperture: *open the door, open the lid, open the cork.* Yet again, other uses focus on the moving apart of the component parts of an entity: *open one's shirt, open a zip, open a penknife.* Other uses have to do with making something accessible, for example to the general public: *open an exhibition, open a nature reserve, open a road;* others, yet again, have more to do with the initiation of an interactional process: *open a discussion, open a debate, open a conference.* These are all conventionalised uses of the verb. Any adult speaker of English will surely be familiar with them, and will have learned the kinds of situation to which the expressions may be applied. Together, they form a coherent category, not so much because of some overarching common element which they each instantiate, but through criss-crossing networks of similarities, at various levels of generality. The category, it also needs to be stressed, is peculiar to English. Approximate translation equivalents of *open* in other languages may have more restricted, or more extended, usage ranges. Italian *aprire* can probably be used in all circumstances in which English *open* can be used. But in addition, *aprire* is conventionally used in contexts in which *open* is not appropriate: *aprire la radio,* 'turn on the radio', *aprire la luce,* 'turn on the (electric) light', *aprire il riscaldamento,* 'turn on the central heating'. These uses are unified by a schematic sense (which bears a resemblance to other uses of the verb), 'render some (especially electrical) device operative'.

On the network model, the problem of the non-compositionality of complex expressions, which was raised earlier, dissipates. A person does not compute the compositional meaning of *open the window* from the constant meanings of its component parts; any competent speaker of English already knows this expression, and knows what it means. And what about expressions with which a speaker is not familiar, such as Searle's *open the Sun?* I would dispute Searle's claim that a person can *understand* this expression, while failing to *interpret* it. A person *tries* to understand it, certainly, by trying to assimilate it to an already familiar use, that is, by trying to establish some kind of similarity between it and an established use. Persons with vivid imaginations, nurtured on science fiction, may be able to come up with various coherent scenarios, in which case they may be said to both understand and be able to interpret it. But if a person's imagination is insufficient to this task, then I think one should have to conclude that the person *does not understand* the

expression, for the very reason that he fails to interpret it; the person would declare that he has no idea at all what 'open the Sun' could possibly mean!

One consequence of adopting the network model is that the question of whether a word is polysemous or not turns out to be incapable of receiving a definite answer. The answer will depend on the level of abstraction at which the word's meaning is accessed. As the focus descends to more specific senses, the word will be increasingly polysemous; with focus on the more schematic senses, the word is much less polysemous, even monosemous. Yet neither of these perspectives can be regarded as inherently more correct than the other. To consider only the particular to the neglect of the schematic – and vice versa - impoverishes our understanding of word meaning. The point has been made by Geeraerts (1992), at the conclusion of his detailed study of the Dutch preposition *over*.

The various tests for polysemy that were mentioned in Section 6.1 may be brought into the picture here. The possibilities of co-ordination and anaphoric cross-reference require that different uses of a word instantiate one and the same sense. But if polysemy is a function of the level in the network at which meanings are accessed, the results of these polysemy tests ought to be highly variable. This is indeed the case. (19) only makes sense if Jane and I both live, either near a financial institution, or near a river; a 'crossed' interpretation is not possible. This fact could be taken as evidence of two distinct readings of *bank*.

(19)   I live by a bank, and so does Jane

But now consider (20). (The sentence is due to Deane 1988: 345; Geeraerts 1993 cites some similar examples.)

(20)   Financial banks resemble those you find by rivers; they control, respectively, the flow of money and of water

This sentence, unlike (19), invites us specifically to focus on the resemblance between the two kinds of things called bank*;* it forces us to access (or even to create) a schematic sense unifying the two readings of *bank*. Or take a couple of Tuggy's (1993) examples with the verb *paint*.

(21)   I have been painting, and so has Jane

(22)   When I'm painting I try to get the colour on evenly, and so does Jane

If I have been painting white stripes on a parking lot, and Jane has been doing a portrait in oils, (21) would be at best facetious. This suggests the existence of two discrete senses of *paint,* each associated with a different kind of situation. The zeugmatic effect completely disappears in (22). The sentence compels us to shift our attention to what is common between a workman painting stripes on a parking lot and an artist painting a portrait; in both cases, a person is engaged in putting colour on a surface.

Taylor, J.R. 1995. *Linguistic Categorization*. Oxford:Oxford University Press