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## **Towards a cognitive compositional semantics: An overview of LCCM theory**

### **Abstract**

*In this paper I am concerned with the nature of word ‘meaning’ and their semantic contribution in combination. My starting point is the position that the ‘meanings’ associated with words are protean in nature. That is, the semantic values associated with words are flexible, open-ended and highly dependent on the utterance context in which they are embedded. In attempting to provide an account of meaning-construction that coheres with this fact, I present a cognitively-realistic theory of lexical representation and a programmatic theory of lexical concept integration. My fundamental claim is that there is a basic distinction between lexical concepts, and meaning. While lexical concepts constitute the semantic units conventionally associated with linguistic forms, and form an integral part of a language user’s individual mental grammar, meaning is a property of situated usage-events, rather than words. That is, meaning is not a function of language per se, but arises from language use. I present an account of lexical concepts and the conceptual knowledge structures, cognitive models, with respect to which they are relativised. I also situate this theory within a usage-based account. I then develop a theory of lexical concept integration, which serves to provide an account of how lexical concepts are combined in service of situated meaning-construction. As the constructs of lexical concepts and cognitive models are central to the theory of lexical representation and meaning-construction, I refer to the approach as the Theory of Lexical Concepts and Cognitive Models, or LCCM theory.*

**Keywords:** *lexical concept; cognitive model; meaning-construction; LCCM theory; compositionality; word-meaning; meaning; semantic potential; encyclopaedic semantics; usage-based thesis*

### **1. The indeterminate nature of word-meaning**

Lexical entries are thought of, in many formal and computational approaches to linguistic semantics, as being tagged with syntactic, morphological and semantic features. These lexical entries combine, together with the grammatical structure of the sentence, to produce sentence-meaning, known technically as a ‘proposition’. The combinatorial property of

language that facilitates the integration of word ‘meanings’ with syntactic structures producing sentence-meaning is referred to as the *principle of compositionality*.

However, the received view of compositionality is simply not sustainable given the facts of language. The principle of compositionality assumes that words ‘carry’ pre-packaged ‘meanings’, which, with appropriate mechanisms of composition, can be ‘added’ together. In other words, sentence-meaning is a function of the sum of the parts which make it up. Yet, words in use do not appear to behave in this way. The ‘meaning’ associated with a word in any given utterance appears to be, in part, a function of the particular linguistic context in which it is embedded. Put another way, word ‘meaning’ is protean, which is to say indeterminate, its semantic contribution sensitive to and dependent on the context which it, in part, gives rise to.

To illustrate, consider the lexical item *fast*. It is commonly assumed that this word has a number of *conventional senses* – mentally stored semantic-units – associated with it. These include the following:

- (1) a fast car            [fast<sub>1</sub>: to move quickly]
- (2) a fast typist        [fast<sub>2</sub>: to perform some act quickly]
- (3) a fast decision     [fast<sub>3</sub>: to require little time for completion]

However, the ‘definitions’ provided do not fully capture the ‘meanings’ that these examples of *fast* are instances of. For instance, *fast* illustrated in (1) relates to an entity capable of moving quickly, while the type illustrated in (2) relates to entities capable of performing actions quickly, and so on. That is, each putatively conventional sense of *fast* has associated with it selectional restrictions, what I will refer to as *selectional tendencies*. The ‘to move

quickly' sense, for instance, selects for members of the class of movable entities. However, now consider the following example:

(4) a fast driver

This usage of 'fast' concerns not the actions of the driver, that is, it is not the actions of the driver which are performed quickly, nor would this utterance normally refer to such actions, even if they were performed quickly. Rather, this expression refers to the speed at which cars controlled by the driver in question ordinarily proceed relative to some norm, such as established speed limits for a particular road. In other words, this is an instance of  $fast_1$  rather than  $fast_2$ . Yet, *fast* in this example relates to the vehicle driven by the driver, rather than, strictly, the driver. Thus, the combination of  $fast_1$ , with *driver*, produces a novel reading in which *fast* might be paraphrased as 'to cause to move quickly'. Now consider the following example:

(5) the fast lane (of the motorway)

Presumably this usage of *fast* also relates to  $fast_1$ . Yet, the *fast lane* is a venue for rapid locomotion rather than an entity capable of rapid locomotion. In other words, both the uses of *fast* in (4) and (5) while seemingly related to the 'meaning' of *fast* in (1) have different semantic selectional tendencies, and somewhat novel 'meanings'. We could posit that both (4) and (5) constitute distinct senses. However, we can continue finding novel uses of *fast*, for which we could produce a virtually infinite listing. Indeed, the same argument applies to sense 2 and 3 of *fast*.

In addition, a particular novel use can appear to feature nuances of different senses:

(6) We need a fast garage for our car, as we leave the day after tomorrow.

As Pustejovsky (1995) notes, this use of *fast* appears to be a ‘blend’ of both  $fast_2$  and  $fast_3$ , a garage which carries out repairs quickly and takes little time to do so. What this discussion of *fast* reveals, then, is that all the examples we have considered, and might wish to consider, upon close analysis predicate in a slightly different way. In other words, each unique instance has a distinct sentential or utterance context, and is associated with a slightly different semantic value.

The point of the foregoing discussion has been to show that words do not have ‘meanings’ in and of themselves. However, this does not mean that words themselves are devoid of semantic value, as I shall argue. Rather, meaning is a function of the utterance in which a word is embedded, and the complex processes of lexical concept integration, to be developed, rather than wholly due to the word itself.

## **2. Towards a cognitive compositional semantics: LCCM Theory**

Key to providing an account of the protean nature of words, in so far as they contribute to meaning-construction, is to provide a descriptively adequate account of i) the sorts of knowledge that words provide access to and ii) an account of how words, and their knowledge structures, are integrated or ‘composed’. In this section I introduce a new theoretical architecture which attempts exactly this.

### *2.1 The semantic potential of words*

Recent work in linguistics (e.g., Haiman 1980; Fillmore 1982, 1985; Langacker 1987), and cognitive psychology (e.g., Barsalou 1992a, 1992b, 1999, 2003; Zwaan 2004) suggests that an encyclopaedic account of word-meaning is required for a descriptively adequate account of lexical representation and psycholinguistic processing. For instance, both Langacker and Fillmore make the point that word-meaning is always a consequence of a larger knowledge structure with respect to which a given word is relativised. Fillmore models such knowledge structures in terms of what he refers to as *semantic frames*. These are conceptual entities that are, in part, defined by virtue of the linguistically encoded concepts that make them up, and which a given word necessarily evokes. Langacker (1987) makes a similar point arguing that a word's *scope of predication* (informally, its 'meaning') involves a *profile* and a *base*, where the profile designates a conceptual substructure within a larger unit, namely the base. For instance, the lexical item *hypotenuse* designates a substructure, the longest side, within a larger unit, namely a right-angled triangle. Thus, the 'meaning' of *hypotenuse* involves both the entity designated and the larger unit with respect to which the designated entity, the profile, is a substructure.

In addition to background knowledge structures of these kinds, words provide 'points of access' (in Langacker's terms) to large-scale encyclopaedic knowledge networks. Langacker models such knowledge structures in terms of *domains*, with domains being organised in hierarchical fashion forming a *domain matrix* (see Langacker 1987; see also Croft 1993; Evans and Green 2006: chapter 7). A similar idea is developed in the work of Cruse (e.g., 2002; Croft and Cruse 2004) who refers to the encyclopaedic knowledge that words provide access to as *purport*.

There is a recent representative model of encyclopaedic semantics which attempts to account for how the semantic purport that a word provides potential access to is constrained.

To illustrate the ideas just touched upon, I briefly present this model, which is developed by Allwood (2003).

Allwood provides an account of what he refers to as *meaning potential* (see also Zlatev's 1997, 2003 related notion of *use potential*). He explicitly argues that a word's meaning potential is

all the information that the word has been used to convey either by a single individual, or on the social level, by the language community...A consequence of this approach is that no attempt is made to distinguish between lexical and encyclopedic information in terms of the kind of information that is contained in the meaning potential. Meaning potentials contain both kinds of information – information deriving from use of language and information deriving from other experience with the world. (ibid., p. 43)

Central to Allwood's proposal is the position that a word's meaning potential is 'activated' providing a situated interpretation. Thus, meaning is always contextually determined, and is selected for from among the knowledge 'potential' that a word provides access to. To illustrate, consider the following examples drawn from Allwood (2003: 45):

(7) A carburetor is a part of a car.

(8) A car need not have a carburetor since gasoline can be directly injected.

Allwood makes the point that the use of *carburetor* in (7) probably activates less detailed information than the use in (8). Moreover, precisely what is activated is subject to individual language users, as different individuals will have different encyclopaedic knowledge structures, and thus different meaning potentials which can be both accessed and activated.

One of the purposes of the present paper is to provide an account of the sorts of cognitive and linguistic operations which must be in place in order for activation of a word's semantic potential to occur. However, the account of word-meaning I present in this paper differs in two important respects from the view presented by Allwood. First, I prefer the term

‘semantic potential’ to Allwood’s notion of ‘meaning potential’. This follows, as I shall argue in the next section, as words do not in fact have meanings. I argue that meaning is not a property of language per se, but rather is a function of language use, and thus, a characteristic of a process of meaning-construction, rather than relating to mental entities/units stored in memory. Meaning-construction is not an unpacking of stored information, as assumed in more traditional accounts. Rather, it is a constructive process, in which integration of lexical units involves differential access to the conceptual knowledge which lexical entities potentially afford access.

Second, I also argue for a distinction between purely linguistic knowledge, and the encyclopaedic knowledge (the semantic potential) that words provide access to (Allwood appears to assume that there is no principled distinction between lexical and encyclopaedic knowledge). This I model in terms of the distinction between ‘lexical concepts’ (stored linguistic knowledge units), and ‘cognitive models’, conceptual knowledge structures (which constitute the semantic potential that lexical concepts provide access to. I use the term *cognitive model profile* to refer to a word’s semantic potential. That part of the word’s cognitive model profile that is activated in a given usage context I refer to as its *informational characterisation* – to be described in detail below). As the notions of the lexical concept and cognitive model play a central role in the theory of meaning-construction I present, it is for this reason that I refer to the general account I introduce here as the *Theory of Lexical Concepts and Cognitive Models* (LCCM theory).

## 2.2 Meaning and use

Having introduced the idea that a word relates to a semantic potential, I now discuss the relationship between language use and meaning. I do so by adopting a version of the *usage-*

*based thesis* employed in cognitive linguistics (see Evans and Green 2006 for discussion), which I present below.

Language use is integral to our knowledge of language, our ‘language system’ or ‘mental grammar’. The organisation of our language system is intimately related to, and derives directly from, how language is actually used (Croft 2000; Langacker 2000; Tomasello 2003). Through processes of abstraction and schematisation (Langacker 2000), based on pattern-recognition and intention-reading abilities (Tomasello 1999, 2003), language users derive linguistic units. These are relatively well-entrenched mental routines consisting of conventional pairings of form and meaning (Langacker 1987; see Evans and Green 2006: Chapter 4, for a review).

However, the range of linguistic units available to the language user massively underdetermine the range of situations, events, states, relationships and other interpersonal functions that the language user may potentially seek to use language to express and fulfil. One reason for this is that language users live in a socio-physical ‘matrix’ that is continually shifting and evolving. No two situations, feelings or relationships, at any given point in time, are exactly alike. We are continually using language to express unique meanings, about unique states of affairs and relationships, in unique ways. While language has a range of ‘ready made’ schemas, or linguistic units which can be combined to express a representative range of scenarios we may wish to refer to and describe, these necessarily underdetermine the mutability of human experience. As Langacker puts it, “linguistic convention cannot provide a fixed, unitary expression for every conceivable situation that a speaker might wish to describe” (1987: 278). Accordingly, the linguistic units employed by language users can only ever partially *sanction* (in Langacker’s e.g., 2000 terms) the situated way in which they are used. As Croft argues, language use involves solving a *co-ordination problem*, in which language users must employ non-conventional co-ordination strategies and devices. That is,



language users typically employ the conventional repertoire of linguistic units, including patterns of assembling linguistic units (such as word order conventions, which are themselves linguistic units), in non-conventional ways.<sup>1</sup>

On this view, meaning, which is associated with the utterance (or usage-event), is a consequence of combining the conventional schemas or linguistic units in novel ways in order to solve the particular co-ordination problem at hand, thereby facilitating communication. The reason, then, for the apparently protean nature of the ‘meanings’ associated with words is that linguistic units are only ever realised as part of linguistic utterances, which are necessarily (i.e., by definition) situated, and thus part of an act of communication. But in being so realised, they have necessarily undergone context-induced ‘shifts’ in their semantic value, and so are never exactly the same as the lexical representations that sanction them. Those scholars, however, who adhere to some form of Fregean compositionality are assuming, incorrectly, that the conventional semantic representations associated with linguistic units such as words are realised in language (use). They are not. As with the distinction between allophones and phonemes in phonological theory, linguistic representations, by analogy akin to phonemes, are never actually perceived, but are inferred based on how ‘sense-shifted’ words appear to behave in (situated) usage-events, as judged over many instances of use. In this, then, the job of the lexical semanticist is to employ meaning in usage-data, by analogy akin to allophones, in order to infer the existence of the underlying lexical concepts (stored mental schemas), which partially sanction the semantic contributions which surface.

This said, we are now in a position to provide some basic distinctions. First of all we need to provide a definition of an utterance. This is less straightforward a task than one might assume. As I will define it, a usage-event or utterance has a unit-like status, in that it

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<sup>1</sup> As Croft (2000) notes, this is precisely why language change is possible, and proceeds as rapidly (in relative terms) as it does.

represents the expression of a coherent idea, making (at least partial) use of the *conventions of the language* (informally, the ‘norms’ of linguistic behaviour in a particular linguistic community). In other words, an utterance is a somewhat discrete entity. However, I use the expressions ‘unit like’ and ‘somewhat discrete’ because an utterance is not an absolutely discrete nor a precisely identifiable unit. This follows as utterances involve grammatical forms such as word order, semantic structures, speech sounds, patterns of intonation such as pitch contours, slight pauses, and accelerations and decelerations, and so forth. While these properties converge on discreteness and unity, they do not co-occur in fixed patterns, and therefore do not provide a set of criteria for collectively identifying an utterance.

Having provided this (qualified) definition of an utterance, we are now in a position to distinguish meaning from lexical representation. My claim is that the essential distinction between lexical representation and meaning is that while meaning is a property of the utterance, lexical representations are the mental abstractions which we infer must be stored as part of the language user’s knowledge of language, in order to produce the range of novel uses associated with situated instances of a particular word (or construction). The meaning associated with an utterance I will refer to as a *conception*. Thus, conceptions are a function of language use. Lexical representations, or rather more technically, lexical concepts, represent the semantic pole of linguistic units, and are the mentally-instantiated abstractions which language users derive from conceptions and the specific semantic contribution perceived to be associated with particular forms.

### *2.3 An architecture for meaning-construction*

The conclusions to emerge from this discussion suggest a number of requirements for a theory of lexical semantics and the role of words in meaning-construction. We require both

an account of lexical representation and a theory of concept integration, which together should contribute to a descriptively adequate and psychologically realistic account of meaning-construction. We require a theory of lexical representation which provides a descriptively adequate account of the kind of linguistic knowledge that language users appear to possess. We also require an account which provides a means of understanding how lexical representations interface with conceptual knowledge, which is to say, their semantic potential. That is, we require a theory that takes an encyclopaedic perspective on linguistic meaning. We also require an account of how lexical representations, together with the informational characterisations derived from the semantic potential available, combine in order to provide situated meanings. Finally, as meanings associated with words are a function of specific utterances, and thus a consequence of discrete usage-events, our theories of lexical representation and lexical concept integration must be thoroughly usage-based in nature. As the two aspects of the theory I present are complex, I present a summary of the architecture here. Each of the constructs introduced are argued for in detail in later sections.

#### LCCM THEORY

As the theory I present in the remainder of the paper invokes the theoretical constructs of the lexical concepts and the cognitive model, as noted, I refer to the model as the theory of Lexical Concepts and Cognitive Models, or LCCM theory for short.

LCCM theory consists of i) an account of lexical representation (lexical concepts and cognitive models) and ii) an account of meaning-construction (composition of lexical concepts in a way which activates, or, in my terms, provides an *access route* through the cognitive models accessed by a given lexical concept. This can serve to *highlight* particular facets, and relations of a given cognitive model at the expense of other facets and relations. As noted, the fundamental assumption is that meaning (more technically a conception), is a

property of an utterance (a situated instance of language use), which is formed, in part, by cognitive operations which apply to the lexical representations (lexical concepts and the cognitive model profiles to which lexical concepts provide *access sites*) deployed by language users. Thus, meaning arises by virtue of language users forming interpretations based on the lexical concepts employed, the way lexical concepts are combined, and the access routes through the cognitive model profiles accessed by given lexical concepts. Moreover, these interpretations are always guided by background knowledge and extralinguistic context.

#### LEXICAL REPRESENTATION

Knowledge of language includes i) lexical concepts, and ii) cognitive models with respect to which they are relativised. Lexical concepts constitute linguistically encoded concepts – that is conceptual knowledge encoded in a form that can be externalised via language. Thus, lexical concepts constitute the semantic pole of symbolic assemblies of form and meaning, and are conventionally associated with linguistic forms of all kinds including words (the focus in this paper), bound morphemes, idiomatic phrases and grammatical constructions. Accordingly, lexical concepts, by definition, concern purely linguistic knowledge, as discussed later. A second important part of the lexical representation is the notion of the cognitive model, which is a large-scale coherent body of non-linguistic knowledge which lexical concepts provide access sites to. The range of cognitive models which are accessed, either directly or indirectly by a lexical concept, I refer to as a *cognitive model profile*. Individual cognitive models consist of *facets* (attributes) and *relations* (structural invariants) which hold between facets.

#### LEXICAL CONCEPT INTEGRATION

The meaning-construction process takes place by virtue of lexical concept integration ('composition'). This process involves two component processes: i) lexical concept selection and ii) fusion. Lexical concept selection involves selecting the most appropriate lexical concepts associated with each form in an utterance, guided by utterance and extra-linguistic context. Fusion, the second compositional process consists of two further constituent processes which are held to occur in tandem: i) integration and ii) interpretation. Integration involves the construction of larger lexical entities, driven by linguistic knowledge (lexical concepts). These larger lexical units, which I term *lexical conceptual units*, are then interpreted. That is, the larger unit receives an *informational characterisation*, which is to say, those parts of the cognitive model profiles (semantic potential) associated with each lexical concept in the larger unit is interpreted in a way that is in keeping with larger unit. Put another way, integration provides (linguistic) instructions which serve to determine how the various lexical concepts are collectively interpreted, and thus, the access path that each individual lexical concept affords through its cognitive model profile. The result is that any given word will provide a unique activation of part of its meaning potential on every occasion of use. This follows as every utterance, and thus the resulting conception is unique.

Accordingly, this view of compositionality is radically different from the received Fregean view. While Fregean compositionality assumes that each usage of a word recruits stable, context-independent information, LCCM theory assumes the semantic value associated with a word will vary slightly every time it is used. An overview of the architecture is presented in Figure 1.

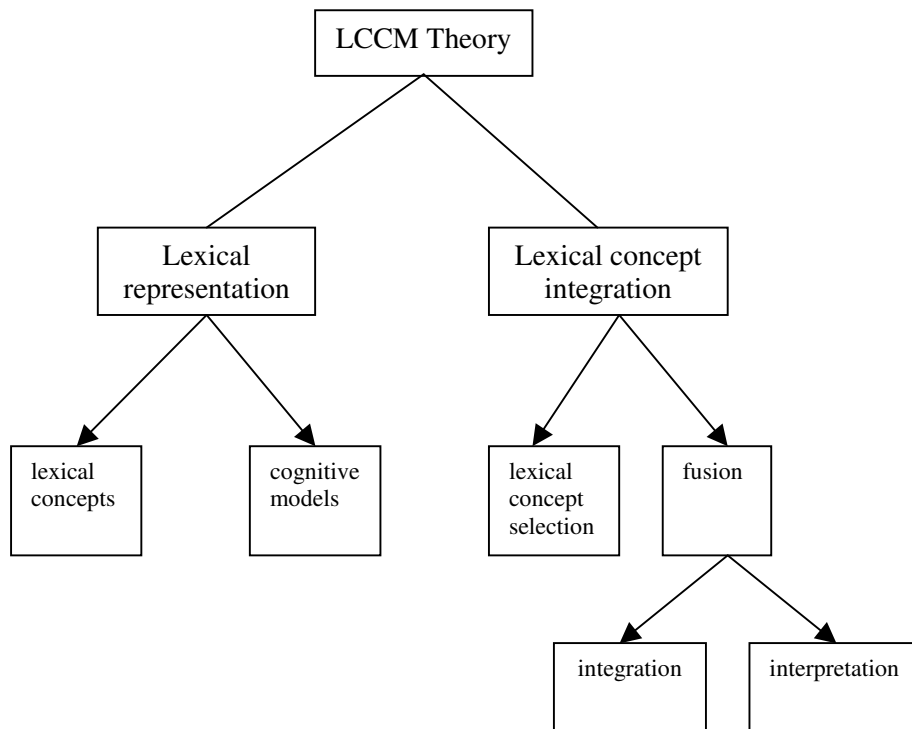


Figure 1. An overview of the architecture of LCCM theory

### 3. Lexical representation

I now turn to a more detailed account of the first aspect of LCCM theory, namely how lexical representation is modelled. I defer a more detailed account of lexical concept integration until section 4.

#### 3.1 Lexical concepts

Lexical concepts are not units of meaning. To reiterate a point central to the present argument, meaning (a conception) is a function of language use, and thus a property of an utterance. Lexical concepts are linguistically encoded concepts or mental representations that

additionally serve as access sites to conceptual knowledge (cognitive model profiles). I now present six fundamental properties associated with the lexical concept qua mental entity.

#### LEXICAL CONCEPTS ARE FORM-SPECIFIC

First, lexical concepts are *form-specific*. That is, they are conventionally associated with specific linguistic forms. A corollary of this is that lexical concepts, the semantic pole of a form-meaning pairing, are necessarily language-specific. Thus, each language consists of an inventory of lexical concepts unique to the language in question.

#### LEXICAL CONCEPTS ARE ASSOCIATED WITH DIFFERENT SORTS OF FORMS

Second, as lexical concepts are conventionally associated with a given linguistic form, it follows that lexical concepts are conventionally associated with a wide range of forms. The range of forms with which lexical concepts are conventionally associated include *overt forms*: those with have *resolved phonetic form*, such as *cat*, and *implicit forms*: those which have *unresolved phonetic form*, such as the ditransitive construction (SUBJECT VERB OBJ1 OBJ2), e.g., *John baked Mary a cake; John gave Mary the cake; John refused Mary the cake*, etc. (see Goldberg 1995). Moreover, overt forms that have distinct lexical concepts conventionally associated with them include bound morphemes, ‘simplex’ words, ‘complex’ or polymorphemic words, and idiomatic expressions and phrases. In addition to grammatical constructions, implicit forms include grammatical ‘relations’ such as subject and object, and lexical classes such as noun and verb.

#### FORMS ARE NOT LEXICAL CONCEPT-SPECIFIC

Third, although lexical concepts are form-specific, a single form can be conventionally associated with a potentially large number of distinct lexical concepts which are related to

degrees, as attested by the phenomenon of polysemy.<sup>2</sup> That is, forms are not *lexical concept-specific*. A consequence of this is that the lexical concepts which share the same form can be modelled in terms of a *semantic network* (see Evans and Green 2006 for discussion). As any given lexical concept potentially provides *access* to other lexical representations it is associated with, I refer to the lexical concepts B, C, D... in the same semantic network as lexical concept A as the *semantic network profile* of that particular lexical concept. Put another way, lexical concepts, which are linguistic entities, exhibit polysemy, and yet each lexical concept provides a distinct semantic potential.

#### LEXICAL CONCEPTS HAVE A LEXICAL PROFILE

Fourth, the definitional property of any given lexical concept is that it has a unique *lexical profile*, its unique ‘biometric’ identifier. A lexical profile is an extension of criteria presented in Evans (2004a), and akin to the notion of an *ID tag* (Atkins 1987) and *behavioural profile* (Gries 2005). While a lexical concept associated with a particular form possesses a particular semantic value – I will use the mnemonic of small capitals inside square brackets as a gloss – determining whether a particular usage of a form relates to one lexical concept rather than another is a matter of examining the selectional tendencies (i.e., semantic, collocational and formal patternings) associated with a given usage. While any given usage of a lexical concept will have its own unique selectional requirements, general patterns (‘tendencies’) can be established, and form part of the conventional knowledge associated with a particular lexical concept.<sup>3</sup> General selectional patterns in terms of semantic, collocational and grammatical tendencies are what I refer to as a *lexical profile*.

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<sup>2</sup> See Evans (2005) and Tyler and Evans (2001, 2003) for detailed discussion of polysemy.

<sup>3</sup> Identifying such selectional tendencies is ultimately an empirical question. Important techniques in this regard have been developed recently in corpus linguistics. See for instance Gries (2005) and Stefanowitsch and Gries (2003).



Two sorts of information form a lexical concept's lexical profile. The first relates to *semantic selectional tendencies*. In Evans (2004a) this was referred to as the Concept Elaboration Criterion. The second relates to formal or grammatical selectional tendencies. In Evans (2004a) I referred to this as the Grammatical Criterion.

#### LEXICAL CONCEPTS CAN BE COMBINED

Fifth, lexical concepts can be combined in a range of ways, as determined by the nature of the lexical concepts involved (their linguistic value). This is the principle mechanism by which language functions in order to create flexible prompts for the process of interpretation (the informational characterisation derived by virtue of integrating lexical concepts in a way which provides differential activation of the semantic potential available via each individual lexical concept).

#### LEXICAL CONCEPTS POSSESS A SEMANTIC VALUE

The final property associated with lexical concepts relates to the *semantic value* provided, in principle, by the lexical concept. While the lexical concepts mentioned thus far have been provided with semantic glosses, given in small capitals inside square brackets, these are simply shorthand labels for the complex conceptual knowledge structures that lexical concepts provide. Before considering the sort of linguistic and conceptual knowledge that lexical concepts provide or access, it is important to reiterate that although lexical concepts are conceptual in nature, they are knowledge structures which are specialised for symbolic representation (i.e., in language).

The semantic value associated with a lexical concept has (at least) five dimensions, treated in turn below. While the first relates to non-linguistic knowledge, the remaining four

are all unique to the language, and thus constitute the linguistic knowledge associated with a given lexical concept.

i) Semantic potential

First, lexical concepts possess a semantic potential (in the sense discussed above). This semantic potential, via the process of interpretation (discussed in detail later) gives rise to an *informational characterisation*. This occurs by virtue of lexical concepts providing access to conceptual (or “encyclopaedic”) knowledge structures. In LCCM theory these knowledge structures are characterised in terms of cognitive models, which collectively form a cognitive model profile for a given lexical concept. Cognitive models are described in detail later. Accordingly, lexical concepts provide access sites or, in Langacker’s (1987) terms, “points of access” to conceptual knowledge. Indeed, it is this aspect of a lexical concept’s semantic value which is often most important in accounting for the protean nature of word ‘meanings’ in language use.

However, the informational characterisation afforded by lexical concepts is not equally rich for all lexical concepts. For instance, there is a full distribution in terms of degree of specificity running from those lexical concepts which provide access to a highly detailed semantic potential to those which provide access which is highly impoverished. For example, even within a single lexical class, the lexical concepts [AUTOMOBILE] associated with the form *car* and [THING] associated with the form *thing* provide very different levels of detail in terms of their semantic potential. While [AUTOMOBILE] is *richly detailed*, which is to say the nature of the conceptual knowledge to which it provides access is rich, [THING] is *poorly detailed* (or *impoverished*), in relative terms.

One obvious way in which levels of detail differ is in terms of the distinction between lexical concepts encoded by so-called open versus closed class forms. However, as Gentner

and Boroditsky (2001) observe, this bifurcation is in fact better thought of in terms of a continuum. In present terms, this continuum in fact relates, in part, to differential *level of detail* in semantic potential.

## ii) Encapsulation

The second dimension of the semantic value associated with a lexical concept relates to the notion of *encapsulation*. That is, lexical concepts serve to encapsulate often complex and informationally diffuse ideas. While it is the cognitive model(s) that the lexical concept provides access to which provides a coherent informational characterisation, a lexical concept nevertheless serves to encapsulate complex ideas by providing access at the relevant point in the knowledge ‘matrix’, i.e., the cognitive model profile. Evidence for this encapsulating function comes from culture-specific lexical concepts which cannot be easily captured in another language. An example from Korean is the lexical concept encoded by the form *nunchi*, which might be translated into English as ‘eye-measure’. This lexical concept relates to the idea that one should be able to judge how others are feeling, such as whether a guest in one’s home is hungry or not, and thus be in a position to offer food so that the guest is not embarrassed by having to request it. Lexical concepts serve to encapsulate complex ideas which are diffusely grounded in an intricate cultural web of ideas and information. They achieve this by providing access sites at particular ‘points’ in conceptual knowledge.

## iii) Relational vs. non-relational

The third dimension relates to whether a lexical concept is relational or non-relational (Langacker 1987). For instance, while lexical concepts associated with forms labelled as ‘nouns’ are non-relational, lexical-concepts associated with forms which are labelled ‘verb’, ‘adjective’ or ‘preposition’, for instance, are relational. A consequence of this is that part of

the semantic value associated with relational lexical concept includes information relating to the sorts of lexical concepts which the relational lexical concept can relate, i.e., ‘argument structure’ or ‘valence’. For instance, the [CONTACT] lexical concept encoded by *on* encodes relational information relating to a figure and reference object (‘ground’), as exemplified by the following prepositional phrase: *the cat on the mat*.

#### iv) Temporal structure

The fourth dimension concerns the *temporal structure* of a lexical concept. That is, some lexical concepts, i.e., those that are relational, encode how the temporal structure of the relation is being accessed, i.e., whether it evolves in time, as encoded by verbs, or whether it is provided as a ‘gestalt’, as encoded by prepositions. Langacker (1987) refers to this distinction as *sequential scanning* versus *summary scanning*.

#### v) Referentiality

The final dimension relates to *referentiality*. Lexical concepts refer to or index entities of different sorts. Some lexical concepts provide *denotational reference*, referring to entities which are conceived as objectively existing, or at least as having some objective basis in the socio-physical world of experience, such as physical artefacts. Other lexical concepts provide deictic reference. They serve to refer to or index entities understood with respect to some deictic centre, such as the speaker’s physical location or social status, etc. Other lexical concepts have anaphoric or cataphoric reference, referring to entities in the linguistic context itself. Indeed, while obvious examples of such lexical concepts include those encoded by, for instance, pronouns, others include the shell nouns, such as *thing* and *aim*, which take their reference from the propositions which they simultaneously serve to encapsulate and mark as coherent propositions.

### 3.2 Cognitive models

Having provided an overview of (at least some of) the key properties associated with lexical concepts, we now return to a key dimension associated with their semantic value. This concerns the semantic potential afforded by lexical concepts. This section is concerned with introducing and describing the construct of the cognitive model in more detail. My claim is that cognitive models, while related to the notion of *frame* (Barsalou 1999), *semantic frame* (Fillmore e.g., 1982; 1985; Fillmore and Atkins 1992) and *domain* (Langacker 1987), are distinct from all three. The distinct notion of cognitive model is necessary for understanding the way lexical concepts contribute to meaning-construction. The main claim is that lexical concepts provide sites of access to cognitive models and are relativised with respect to them.

In previous work (Evans 2004a, 2004b), I referred to the larger-scale knowledge structures with respect to which lexical concepts are relativised as cognitive models. The reason for preferring this term over the related notions of domain/base or semantic frame, is that a cognitive model, in my sense, is a coherent, in large-part non-linguistic, knowledge structure, similar to what Langacker seems to have in mind, and in some statements to what Fillmore has in mind, particularly when he tends towards the view of a semantic frame as incorporating an (experiential) scene. That is, it is a richly specified conceptual entity, akin to what Barsalou (1999) refers to by his use of the term ‘frame’. However, as with both Fillmore’s notion of a semantic frame and Langacker’s notion of a domain or a base, a cognitive model is accessed, at various points by distinct lexical concepts, which are thus relativised to it, and in part, collectively constitute it. In other words, a cognitive model represents an interface between richly-specified conceptual knowledge and nodes of access at particular points in the cognitive model provided by specific lexical concepts. Thus, lexical

concepts provide particular established (i.e., conventional) perspectives or construals with respect to the set of cognitive models (cognitive model profile) accessed via a given lexical concept. Yet, a cognitive model is far richer than the sum of the lexical concepts which provide access sites to it. This follows as while lexical concepts are conceptual units specialised for symbolic representation in language, cognitive models are not. Rather, they are multi-modal conceptual entities, which can be used as a basis for perceptual simulations (see Barsalou 1999; and others, e.g. Prinz 2002 and Zwaan 2004).

Cognitive models relate to coherent bodies of knowledge of any kind. For instance, they include knowledge relating to specific entities, such as the complex knowledge associated with a specific entity such as ‘car’, or a more specific entity such as ‘my car’. They include information such as whether the car needs filling up and when I last cleaned its interior. Cognitive models can relate to ‘procedural’ bodies of knowledge, such as ‘cultural scripts’ which form templates for how to interact in restaurants in order to be seated and secure a meal (cf. Sharifian’s (2003) notion of *cultural conceptualisations* which are culturally ‘distributed’). Cognitive models also include bodies of knowledge relating to more abstract entities such as containment, love and physics. They operate at varying levels of detail, and while stable, are dynamic being in a perpetual state of modification and renewal by virtue of on-going experience, mediated both by linguistic and non-linguistic interaction with others and one’s environment.

Lexical concepts may be relativised with respect to more than one, typically many, cognitive models. As cognitive models are necessarily connected to and inherit structure from many others, a lexical concept can potentially be connected to a vast network of conceptual knowledge. Those cognitive models which are directly accessed by a lexical concept are referred to as *primary cognitive models*. The set of such primary cognitive models for a given lexical concept is termed the *primary cognitive model profile*. The sort of structured

knowledge which is a subset of a given primary cognitive model I refer to as *secondary cognitive model*. Such cognitive models relate to what I term a lexical concept's *secondary cognitive model profile*. This distinction is important to distinguish between literal and figurative language use (see Evans and Zinken 2005 for detailed explication).

#### **4. Lexical concept integration**

The discussion of lexical concepts and how they relate to cognitive models in the preceding section now allows us to examine how meaning-construction occurs. That is, we are now in a position to see how lexical representations contribute to the formation of a conception. This process of meaning-construction I will refer to as *composition*. However, we are not dealing with Fregean compositionality. Rather, we are dealing with composition that makes use of lexical concepts, and the cognitive models with respect to which they are relativised. Composition involves two processes, termed *selection* and *fusion*. I address each of these issues below.

##### *4.1 Lexical concept selection*

This is the process in which linguistic or extra-linguistic context selects for a particular lexical concept. Selecting the 'correct' lexical concept is required by fusion, the operation in which lexical concepts are integrated and the resulting integrations are interpreted. One of the complexities associated with meaning-construction, however, is that many processes occur at the same time, and thus, it is far from clear that the processes involved are sequential (Gibbs 1994).

An example of extra-linguistic context giving rise to selection is the following:

(9) That recent hike is killing me.

The form *hike* has at least two lexical concepts associated with it. One relates to a long, typically cross-country, walk, while another relates to an increase in financial charges or payments of some kind. In the context of a recent cross-country walk, the example in (9) might relate to sore body parts. In the context of, for instance, a recent central bank base-rate increase, the speaker might be referring to the difficulty of keeping up with mortgage repayments. Thus, the extra-linguistic context provides a means of selecting the most appropriate lexical concept.

Now consider the examples below, which illustrate the role of linguistic context in selection:

(10) The judge asked the defendant to approach the bar.

(11) The customer ordered her beer at the bar.

The form *bar* has a number of distinct lexical concepts associated with it, including the ‘bar of a court’ at which the judge sits, and a ‘bar in a public house’ at which alcohol is purchased and served. The appropriate lexical concept is selected in these examples due to the linguistic context.

Despite being able to differentially identify the separate contributions of extra-linguistic and linguistic context with respect to lexical concept selection, the typical arrangement appears to involve a process I refer to as *co-selection*, involving both linguistic and extra-linguistic context. To illustrate, consider the following utterance adapted from a recent newspaper headline:



(12) France shot down the EU constitution

One of the points made by Croft (1993) in discussing a not dissimilar example, was that words often appear to take on ‘meaning’ only when it is clear what the ‘meaning of the whole’, what I refer to as the conception, relates to. That is, it is only by knowing what the entire utterance relates to that the ‘parts’ can be interpreted. For instance, *France* might relate to the geographical landmass, the political ‘nation-state’ entity, the government, the head of state, the people, a national sports team, a delegation from France, or something else. Similarly, *shot down* has a number of conventional interpretations associated with it, including the ‘literal’ meaning plus other conventional readings such as ‘forcefully reject’. Similarly, *EU constitution* could relate to the membership of the EU, the health of the EU, or the new treaty and charter of rights and social provision recently presented to European Union member states for ratification.

However, co-selection relies upon selecting the most mutually appropriate readings associated with each of these expressions. That is, to understand the semantic contribution of one, we have to understand the semantic contribution of all. Thus, co-selection has to do with the inter-dependence of lexical concept selection. Selecting the most appropriate lexical concept associated with a given form is a mutually-involving ‘symbiotic’ process.

Nevertheless, how is this co-selection process guided? I suggest that it proceeds by virtue of a discourse “anchor”, which I refer to as the utterance *topic*. This is related to what Fauconnier (1997) refers to as a ‘base space’. The topic might be inferred based on the preceding discourse, the extra-linguistic context, or indeed, the utterance context itself. However, the topic constitutes a ‘mini-theory’ concerning the general nature of the conception, and is informed by the hearer’s assumptions regarding the speaker’s

communicative intention. Thus, co-selection crucially relies on knowing the topic, which guides the co-selectional process. Indeed, this is what Croft is referring to when he talks of the whole leading to our understanding of the parts, what he refers to in terms of the ‘unity of the domain’. That is, unless we understand that the topic of the conception illustrated by (12) relates to European Union politics, we will be unable to make the most appropriate lexical concept co-selections, and thus be unable to build the conception that the newspaper headline writer has in mind.

Thus, co-selection can only proceed once we understand that the references that need to be assumed relate to a complex body of current affairs knowledge relating to the politics of the European Union. Indeed, to construct a conception similar to the one the headline writer presumably has in mind requires not only understanding the EU as a political and economic entity consisting of 25 European member states, it also requires knowledge relating to the raging debate that has held sway in many European countries about the direction of the EU, and the recent ratification process relating to a new treaty, labelled ‘EU constitution’, which involved referenda being held in a number of European countries. The utterance in (12) relates to the rejection of the EU constitution by a majority of French voters in a recent referendum.

## 4.2 *Fusion*

Fusion concerns the process in which selected lexical concepts are composed such that they give rise to a particular conception. Fusion involves two component processes: *integration* and *interpretation*. I address each in turn.

### 4.2.1 *Integration*

Integration is the process in which selected lexical concepts are incorporated into larger structures, what I refer to as *composite lexical-conceptual structures*. One way in which this process occurs is due to a process which Langacker refers to as *elaboration*. For instance, the conceptual representation associated with a verb such as *kick* encodes schematic roles, for ‘kicker’ and ‘kickee’. Indeed, this relates to the view that lexical concepts can be relational or non-relational as discussed earlier. These roles, what Langacker refers to as *elaboration sites*, can be integrated with, or, in Langacker’s terms, *elaborated*, by lexical concepts encoded by other lexical forms, e.g., *He kicked me*.

Of course, integration can become more complex when it involves lexical concepts which have more than two elaboration sites. A case in point is the so-called ditransitive or double-object construction. Goldberg (1995) shows that this grammatical form has, in present terms, a conventional lexical concept associated with it which can be glossed as [X CAUSES Y TO RECEIVE Z]. The letters x, y and z correspond to distinct elaboration sites (in Langacker’s terms):

(13) She kicked him the ball.

Of course, there is more to integration than elaboration. Composite lexical structures can themselves be conjoined with other composite lexical structures. This process I refer to as *constituency reanalysis*. Essentially, this is the process in which composite lexical structures once established are treated as unitary entities or constituents at the next level of processing. For instance, the lexical concept encoded by *and* is specialised for integrating composite lexical structures. Thus, integration involves elaboration (building of composite constituents), and constituency reanalysis (building utterances from smaller ‘meaning’ constituents).

However, and crucially, it is important to emphasise that what licenses these processes, providing coherence to the integration, is compatibility of the lexical concepts involved (rather than, for instance, semantically ‘blind’ syntactic processes, as in many formal approaches).

#### 4.2.2 *Interpretation*

Interpretation is a process that proceeds in conjunction with integration. While integration serves to conjoin lexical concepts giving rise to composite lexical conceptual structures, interpretation serves to activate part of the semantic potential (cognitive model profile) that each lexical concept provides access to. It does so in a way that is consistent with the other lexical concepts of the composite lexical conceptual structure. In other words, it is not enough for meaning-construction to select an appropriate lexical concept, and integrate lexical concepts into a composite lexical-conceptual structure. In addition, the selected lexical concept(s) must then be interpreted within the composite lexical-conceptual structure, the new linguistic context, in which it occurs. This process of interpretation, then, provides the crucial break between lexical representation and meaning-construction. It is as a consequence of interpretation that a conception arises. In this section I will focus on interpretation as it applies to lexical concepts encoded by word classes of the following kind: nouns, adjectives, and verbs.

Throughout the paper I have referred to a construct termed *access*. This concerns the ability that lexical concepts have to interface with non-linguistic knowledge, that is, the cognitive model profile. Thus each lexical concept has a unique cognitive model profile to which it affords access, by virtue of serving as an access site to non-linguistic knowledge at a unique, and thus different, point in the human knowledge matrix.

However, language use, and the consequent construction of a conception involve interpretation, and thus *activation* of just part of the cognitive model profile accessed via a lexical concept. This occurs by virtue of an *access route* through the cognitive model profile being established. This activation process is a consequence of situated language use, which I describe below.

#### COGNITIVE MODEL PROFILES

In order to see how an access route is established, I first briefly elaborate on the earlier discussion of a cognitive model profile. In order to do so, consider the lexical concept [BOOK] as encoded by the form *(a) book*, and a very partial cognitive model profile that it affords access to (Figure 2).

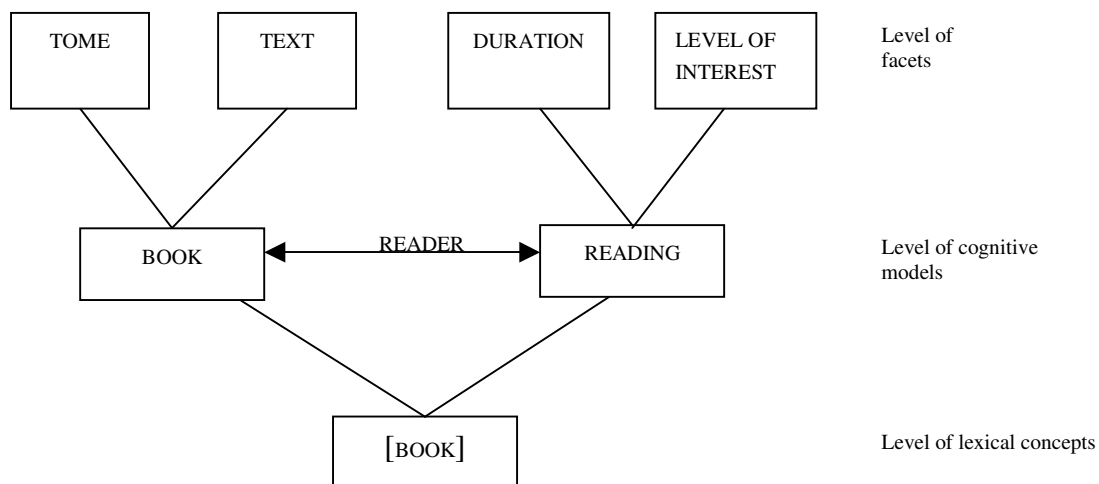


Figure 2. The relationship between lexical concepts, cognitive models, and facets and relations

The partial cognitive model profile in Figure 3 provides a diagrammatic representation of part of the semantic potential which the lexical concept [BOOK] provides an access site to. That is, knowledge accessed by [BOOK] includes, at the very least, that a book is a physical entity, and is interacted with via a process of reading. These two distinct sorts of knowledge, knowledge

relating to an artefact, and the process of reading are captured in Figure 3 by the two cognitive models BOOK and READING respectively. The two cognitive models are related by virtue of a reader who interacts with the physical artefact by virtue of reading the printed text. This relation holds between cognitive models (or facets), and is what Barsalou (1992b) refers to as a structural invariant. I capture this relation in Figure 4 by a double-headed arrow, and the specific relation involved is signalled by the mnemonic READER. In addition, cognitive models consist of a large detailed, but structured, body of knowledge. The various attributes that make up this body of knowledge I refer to as *facets*. Figure 3 provides two facets for each of the cognitive models which [BOOK] provides access to. The cognitive model BOOK relates to the physical artefact, consisting of, at the very least, knowledge as to the physical structure and organisation of a given book. This includes detailed knowledge concerning the material aspects of the artefact, including its dimensions, weight, binding (paper or cloth), and so forth. This facet of our knowledge about books I refer to as the TOME facet. In addition to the physical organisation and construction of a book, books consist of text which is interacted with through the process of reading. This I refer to as the text facet.

The READING cognitive model relates to the process involved in interacting with books, especially the nature of the interaction with the text itself. One consequence of this interaction is that reading takes up a period of time, which I refer to as the DURATION facet. That is, depending on the amount of text involved, reading can take lesser or greater amounts of time. Another consequence of interaction with books is the level of interest that a given book holds for the reader. This I refer to as the LEVEL OF INTEREST facet. That is, while the reader might judge the book to be interesting another might be judged to be boring, and so on.

THE ESTABLISHMENT OF AN ACCESS ROUTE

Access routes are established by virtue of situated language use. In order to see how, consider the following examples:

(14) That's a long book.

(15) That's a heavy book.

Each of these utterances involves a slightly different interpretation associated with the form *book*. That is, a consequence of each of these distinct utterances is that *book* achieves a distinct informational characterisation. This is achieved by virtue of each use of *book* being interpreted in a way consistent with the utterance context such that a slightly different access route is established through the cognitive model profile access via [BOOK].

For instance, the conception that results from (14) has to do with an assessment of a relatively extended duration required in order to read the book in question. In contrast, the conception associated with (15) has to do with an assessment as to the weight associated with the book in question. The process of interpretation then involves differential activation of aspects of the semantic potential accessed via [BOOK], in a way that is consistent with the lexical concepts encoded by the other forms which make up the utterance context. Thus, the example in (14) involves an access route which serves to activate the READING cognitive model profile. In contrast, (15) involves an access route which involves the activation of the BOOK cognitive model profile.

Now let us consider a more complex case, exemplifying an access route that involves access in several cognitive models. To do so, reconsider the utterance in (12) above, reproduced below:

(12) France shot down the EU constitution.

In this example interpretation requires that an access route is established through the cognitive model profile accessed via [FRANCE] in a way that is consistent with the lexical concepts associated with the other linguistic forms and units in the utterance. The interpretation associated with *France* in this example is that we are concerned with the French electorate, and specifically that part of the French electorate which voted against ratification of the EU constitution. In other words, [FRANCE] in this example achieves an informational characterisation by activation of the cognitive models which are shown in bold in Figure 4.

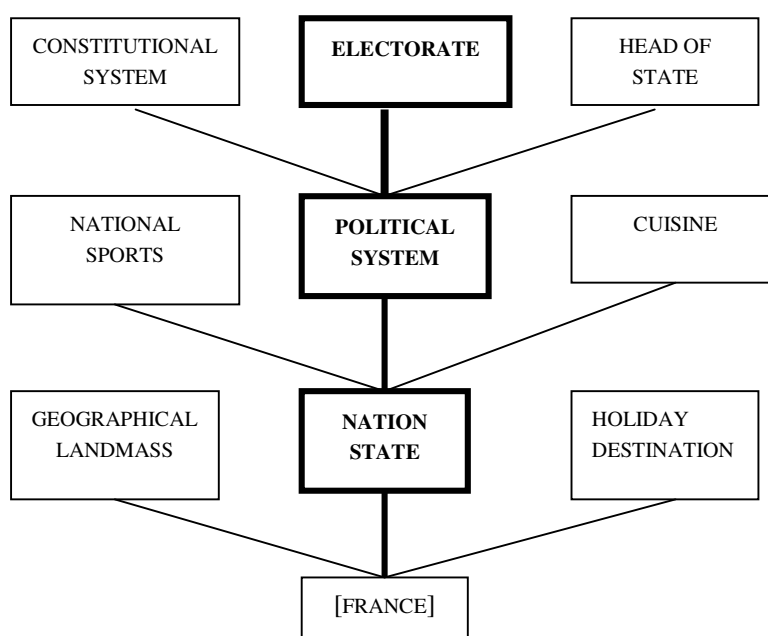


Figure 3. Access route through a partial cognitive profile established by the interpretation of [FRANCE] in the utterance *France shot down the EU constitution*

What this example shows is that an access route typically involves the activation of a number of distinct cognitive models, in order to facilitate a situated interpretation, i.e. the informational characterisation of a lexical concept.

In the light of the discussion in this section, Figure 4 presents an overview of the concept integration process.



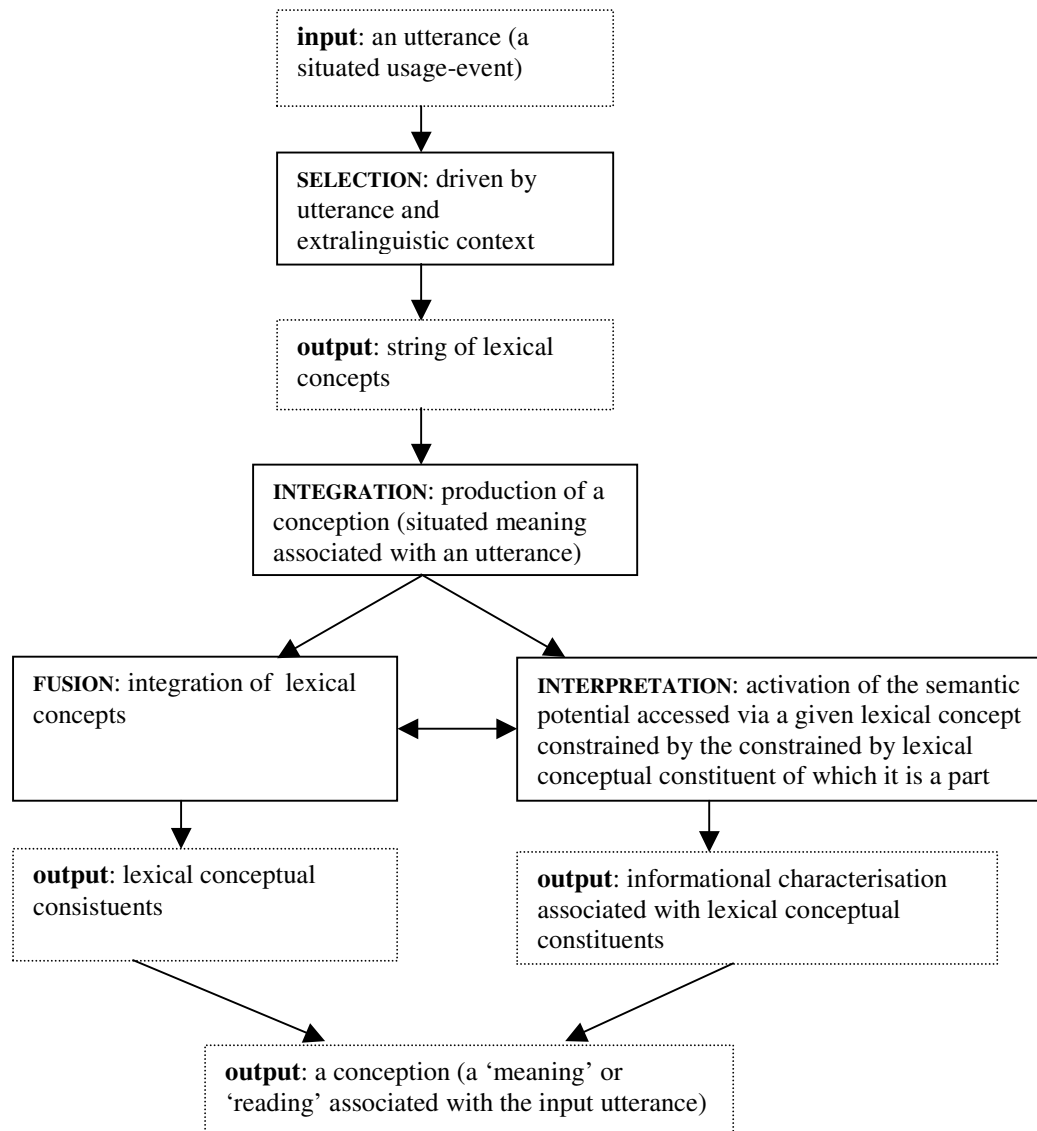


Figure 4. Meaning-construction in LCCM theory

## 5. Further Issues

There are a number of intriguing issues that arise as a result of the presentation of meaning-construction from the perspective of LCCM theory. In particular, LCCM theory offers a slightly different perspective on particular issues that have been addressed by cognitive linguists, including figurative language (section 5.1) and polysemy (section 5.2). In addition, one way of viewing LCCM theory is to see the approach as interfacing with a number of

specific theories in cognitive linguistics. One way of viewing LCCM theory is to see it as linking up with cognitive approaches to modelling the language system, especially Construction Grammar and Cognitive Grammar. Specifically, LCCM theory can be interpreted as complementing these approaches by addressing the relationship between formal (grammatical) and semantic levels of representation (from the perspective of Construction Grammar, section 5.3), and the relationship between semantic structure (in language) and conceptual structure (from the perspective of Cognitive Grammar, section 5.4). In addition, the approach to meaning-construction developed in LCCM theory can be viewed as interfacing with conceptual blending theory. This is addressed in section 5.5.

### *5.1. Metaphor and metonymy*

The received view of figurative language in cognitive linguistics is that the phenomena of metaphor and metonymy are the result of underlying ‘conceptual’ metaphors and metonymies. Lakoff and Johnson (1980, 1999; Johnson 1987; Lakoff 1987) have modelled knowledge of this kind in terms of what Zinken and I (Evans and Zinken 2005) refer to a *sub-symbolic knowledge structures*, namely pre-linguistic cross- and within-domain conceptual mappings, which are stored in long-term memory (see Evans and Green 2006: chapter 10 for review). This general approach is referred to as Conceptual Metaphor Theory (CMT). The hallmark of CMT is that figurative language is motivated by a ‘system’ of such conceptual metaphors, in which figurative language use is understood as being licensed, the surface manifestation of sub-symbolic, language-independent knowledge structures.

In a recent paper, Jörg Zinken and I apply LCCM theory to figurative language (Evans and Zinken 2005). Our central claim is that rather than making use of a metaphor ‘system’, i.e. sub-symbolic knowledge structures in the sense of CMT, figurative language

use requires symbols, i.e., lexical concepts, with their various characteristics, as discussed earlier.

In terms of LCCM theory, figurative language can best be thought of in terms of a situated creative act, providing a novel conception, rather than consisting of assembling pre-existing and pre-linguistic knowledge ‘structures’. In particular, we argue that figurative language can be distinguished from literal language in terms of differential access with respect to the cognitive model profile provided via a given lexical concept. Whereas there is a sharp distinction between literal and figurative language and thought in CMT, the LCCM approach, as presented in Evans and Zinken (2005), maintains that lower and higher degrees of figurativity are a symptom of general meaning-construction processes: selection and fusion. CMT takes a narrow view of meaning, ignoring the dynamic aspects of meaning-construction which are crucial for understanding the way conceptual resources are marshalled by language users.

A further difficulty with Conceptual Metaphor Theory is that it is, in essence, not a usage-based account of language. This follows as in large measure it is not really an account of language at all. Rather, it is an attempt to understand conceptual organisation from the perspective of a narrow view of the nature of embodied cognition. As the LCCM approach sees figurative language as symptomatic of more general meaning-construction processes which are grounded in situated language use, communication and context, it follows that the LCCM view of figurative language, as presented in Evans and Zinken (2005), treats non-literality as an outcome not of ‘special’ dedicated (sub-symbolic) knowledge structures, but rather of the same sorts of knowledge structures which are, in principle, accessible to literal uses of language.

There are a number of recent perspectives which corroborate the LCCM approach to figurative language. The first relates to the linguistic evidence. In a detailed study of

conceptualisations of time, Evans (2004a) showed that the CMT account of time is descriptively inadequate. That is, the linguistic evidence employed by CMT in order to support its claims in fact misses many patterns and generalisations which are more appropriately stated at a symbolic rather than that of a sub-symbolic level. In other words, the level of the lexical concept rather than the conceptual metaphor provides a more descriptively adequate account of the linguistic data.

A second sort of corroboration relates to recent work on the nature of figurative language from the perspective of public discourse. For instance, work by Zinken et al. (In press), which introduces and develops the construct of ‘discourse metaphor’, shows that successful figurative language, which gets taken up and replicated in a discourse community, uses rather specific vehicle concepts. Corpus evidence suggests that these are not symptoms of more general mappings. Successful metaphors are closely linked to the limited and specific communicative goals of the proponents of a given discourse. In this, metaphor is wholly dependent on the symbolically-mediated resources of language, both in terms of its development, use and propagation.

## *5.2. Polysemy*

Traditionally, work in cognitive lexical semantics has advocated a conceptual polysemy position. This is the view that ‘surface’ variation in meaning—what I have referred to as the protean nature of word ‘meaning’—is a function of underlying fine-grained lexical distinctions in semantic memory. Indeed, this position has been contrasted with the received tendency in formal approaches to lexical semantics to adopt a monosemy position (see Evans and Green 2006: chapter 10; Tyler and Evans 2003). More recently, it has been argued by cognitive linguists that the distinction may not, in fact, be worth maintaining (e.g., Zlatev

2003). I argue that the position that ‘surface’ polysemy is a manifestation of underlying or ‘conceptual’ distinctions in conceptual structure (as specialised for encoding in language), is supported (and justified) by the LCCM account of lexical representation, contra the position presented by Zlatev (2003), for instance.

LCCM theory makes a crucial distinction between lexical concepts, semantic potential and meaning. While lexical concepts provide access to a rich semantic potential, there is distinct linguistic knowledge (lexical concepts) which can and do exhibit polysemy. Polysemy, as I understand it here, is a function of stored lexical representations, lexical concepts, rather than being a function of (language) use. Use results in variation in meaning. Polysemy is a function of distinct mental representations (which are not ‘meanings’), namely lexical concepts, which provide distinct access sites to similar or related cognitive model profiles. For instance, Evans (To appear) argues that the polysemy exhibited by the [STATE] lexical concepts conventionally associated with prepositions such as *in*, *on* and *at* is a function of the way in which distinct mental representations (lexical concepts) provide distinct sites of access to common cognitive model profiles.

From the LCCM perspective, therefore, polysemy is a phenomenon exhibited by mental representations (lexical concepts) with shared cognitive model profiles. The contextual variation in meaning is not, therefore, a consequence of polysemy, but rather of the compositional (meaning-construction) processes, described above. In view of this, the theoretical distinction between polysemy and monosemy is worth maintaining, as arguing for lexical concepts makes the assumption that polysemy (rather than monosemy) is the best way to model lexical representations (see Tyler and Evans 2003 for discussion).

### 5.3. *LCCM theory and Construction Grammar*

LCCM theory takes the position that lexical concepts, in the sense defined, are associated with all linguistic units. Lexical concepts are then fused, to produce lexical conceptual constituents which are then interpreted, which is to say they receive an informational characterisation from the semantic potential accessed via the lexical concepts which comprise these larger units.

This view is consistent with the position advocated in Construction Grammar (e.g., Goldberg 1995, 2006). In Construction Grammar, linguistic units, including ‘grammatical units’, known as constructions, have meaning in their own right. Moreover, constructions can be fused. For instance, the ditransitive construction studied by Goldberg (1995) involved a schematic meaning which can be fused with the meaning of the individual linguistic units which make it up (participant vs. argument roles). This is similar to the position being developed here. The main difference is in terms of focus and detail. LCCM theory is concerned primarily with the meaning-construction process, and thus pays attention to the detail of the semantic aspects of lexical representation, and the semantic potential which lexical concepts provide access to. Construction Grammar is primarily concerned with developing an account of the sorts of (grammatical) constructions that a language such as English has at its disposal.

#### *5.4. LCCM theory and Cognitive Grammar*

In many ways, the present approach constitutes a synthesis of a number of currents in cognitive linguistics, and responds to a number of recent theoretical frameworks. In particular, the approach to semantic composition is informed by and coherent with Cognitive Grammar (e.g., Langacker 1987, 1991, 1999).

However, one criticism that has been levelled at Cognitive Grammar relates to the relationship between semantic structure and conceptual structure. Langacker argues that semantic structure as encoded in language “is” conceptual structure. Some scholars (e.g., Levinson 1997) have taken issue with this because it appears to straightforwardly equate semantic structure in language with conceptualisation. Levinson presents a number of arguments which demonstrates that semantic structure cannot be straightforwardly equated with conceptual structure.

One way in which the present proposal can be interpreted is as a clarification on the interface between semantic structure and conceptual structure, in terms of Cognitive Grammar. In specific terms, LCCM theory suggests that rather than the semantic structure of linguistic units (symbolic assemblies in Langacker’s terms) being equated with conceptual structure, semantic structure is a subset of conceptual structure. Specifically, conceptual structure, as encoded in language, takes a specialised and highly elaborate form: what I refer to as lexical concepts. While lexical concepts *are* concepts, they consist of linguistic knowledge, which is to say conceptual structure as specialised for being encoded in and externalised via language.

### *5.5. LCCM theory and Conceptual Blending*

In contemporary work in cognitive linguistics, the attempt to account for meaning-construction processes has become extremely important. One way in which this has been approached is from the perspectives of Mental Spaces Theory (e.g., Fauconnier 1997) and Conceptual Blending Theory (e.g., Fauconnier and Turner 2002). These theories attempt to model meaning-construction at the conceptual level (what Fauconnier (1997) refers to as ‘Level C’) independently of language. A key point is that language provides mere prompts

for integration at this level. On this account, the sophistication in the meaning-construction processes takes place behind the scenes at above the level occupied by language. Meaning-construction of this sort, Fauconnier refers to as ‘backstage cognition’.

Despite linguistic units providing relatively impoverished, and certainly underspecified ‘prompts’ for rich meaning-construction processes which take place at level C, there is nevertheless significant sophistication in terms of the information encoded by these linguistic prompts (i.e. lexical concepts), thus including the way they can be combined, and the semantic potential they provide access to (a process that Fauconnier and Turner refer to as ‘pattern completion’).

LCCM theory can be viewed as an attempt to bring together recent work from cognitive lexical semantics, and work from cognitive approaches to grammar in order to build a model of what I will refer to as ‘front stage cognition’: the role of words as linguistic prompts for backstage cognition.

## **6. Conclusion**

In this paper I have made a number of proposals in order to develop a cognitively-realistic account of lexical semantics and meaning-construction, and to develop an account which is consonant with the facts of language use. I argued that meaning is not a property of words, but rather of the utterance: that is, a function of situated use. Words, as such, do not have meanings. The representational aspects of language that contribute to meaning involve two dimensions: lexical representations and a cognitively-realistic account of compositionality. I modelled lexical representation by developing the construct of the lexical concept, and the conceptual structures that lexical concepts provide access to: cognitive models. Lexical concepts are relatively schematic units of knowledge which are relativised to (and thus



provide access to) conceptual knowledge at particular 'sites' in the knowledge system. Conceptual knowledge is organised into cognitive models which form an encyclopaedic knowledge network, and thus constitute the semantic potential that linguistic units such as words provide access to. Lexical concepts are integrated, guided by a number of principles, giving rise to utterance meaning: a conception.

Communication employing language can succeed or fail because of the complex possibilities involved in meaning-construction. While I have attempted to sketch some of the linguistic processes involved, I have necessarily missed out the sorts of interpretative principles that relate to inferential processes as discussed in the 'pragmatic' tradition ranging from work by scholars such as Searle (e.g., 1969), to Grice (e.g., 1975), and particularly Sperber and Wilson (e.g., 1995). I have also not addressed the 'social' psychological perspective as represented in work on social roles, contexts, and settings ranging from that of Erving Goffman (e.g., 1981) to the role of speaker/hearer interaction, and common knowledge and context as developed in the work of Herbert Clark (e.g., 1996), nor as developed in the work of Chris Sinha (e.g., in press). I have also not addressed in any detail the contribution of closed-class structures such as grammatical constructions, as addressed in the construction grammar tradition (e.g. Goldberg 1995). Nor have I addressed the role of contextualisation cues, including colloquial language use, and intonation, etc., as represented in the interactional sociolinguistics tradition associated with the work of John Gumperz (e.g., 1982), and the discourse-based work of scholars such as Deborah Schiffrin (e.g., 1987), and Wallace Chafe (e.g., 1994). A fuller account of meaning-construction must at least include all these things.

Finally, the research presented here is programmatic. A significant portion of the account of meaning-construction presented here rests on the construct of the cognitive model. As these models are psychological rather than linguistic entities, we require a fully fleshed

out psychologically-based account. Moreover, I have presented no experimental evidence for the different levels of constructs I have posited, nor for the stages of processing implied by my proposals. Clearly, psycholinguistic evidence will be required in order to support, and modify the theory I have presented here.

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