Lexical Concepts, Cognitive Models and Meaning-Construction

Vyvyan Evans*

Abstract

In this paper I address the role of words in meaning-construction. While the received view of *meaning-construction* in linguistics has often assumed some version of Fregean compositionality, I review evidence that shows that this view of meaning-construction is simply untenable. Indeed, a striking observation to have been made by a wide-range of scholars from a number of different traditions and theoretical perspectives is 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 facts such as this, 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.

1. Introduction

Providing an account of meaning is the holy grail not just of linguistics but of related disciplines including psychology, neuroscience and philosophy (Jackendoff 2002). Nevertheless, accounting for the role of words in meaning-construction has proved to be both controversial and problematic for much of the relatively short history of linguistics as a discipline. During the first part of the twentieth century, the study of linguistic meaning was ignored by both structuralism and the generative tradition inspired by Chomsky (Evans 2004a; Wierzbicka 1996). In the 1960s an interest in accounting for linguistic meaning began to emerge in linguistics with the publication of papers such as Katz and Postal (1964) and Katz (1972), and with the advent of formal semantics in the 1970s. However, both componential and truth-conditional approaches have largely assumed what I will refer to as a 'words-and-rules' approach to meaning-construction; what Langacker (1991) refers to as the building-block metaphor with respect to meaning-construction. Such an approach, which has often assumed some version of Fregean compositionality (see below), views utterance meaning as a consequence of adding or composing smaller units of meanings, together with the grammatical configurations in which they appear. In other words, accounting for linguistic meaning, on this account, assumes that the "ingredients" of language are words and rules, with rules serving to conjoin 'atomic' meaning elements encoded by words. A descriptively adequate account of linguistic semantics should provide a descriptively adequate account of these 'elements of meaning', and the 'rules of combination'. Componential theories of linguistic semantics have sought to properly identify the elements of meaning encoded by words. Accounts provided by both theoretical and computational linguists have tended to assume that word-meanings are fixed structures, which can be modelled independently of the context in which they occur, both linguistic and extra-linguistic. Formal semanticists have

* Department of Linguistics and English Language, School of Humanities, Arts B, University of Sussex, Brighton, BN1 9QN, UK. E-mail: vyv@sussex.ac.uk

attempted to describe how these elements are composed with other linguistic elements to produce what they refer to as 'sentence-meaning' (see Evans and Green To appear: chapter 7, for a review).[1] Such theoretical approaches have left it to others, such as researchers working in the areas of pragmatics and sociolinguistics to establish the contribution of extra-linguistic context to utterance meaning.

However, research from, by now, a significant number of perspectives and disciplines over the last couple of decades has provided compelling evidence that the 'words-and-rules' model of linguistic semantics is simply incorrect. Indeed, evidence from the perspectives of social psychology, cognitive psychology, interactional sociolinguistics, cognitive linguistics and computational linguistics reveals that the view that words constitute fixed, context-independent structures, and that meaning-construction is appropriately modelled in terms of the straightforward approach to compositionality sketched above (and below in a little more detail) is untenable. On the contrary, a large number of scholars have observed that the meanings associated with words are flexible, open-ended and highly sensitive to utterance context. Such scholars include, but are by no means limited to Clark (1982; 1996), Coulson (2000), Croft (1993; 2000), Croft and Cruse (2004), Cruse (2002), Evans (2004a), Fauconnier (1997), Fauconnier and Turner (2002), Goffman (1981), Gumperz (1982), Herskovits (1986), Langacker (1987), Pustejovsky (1995), Sperber and Wilson (1995), Sweetser (1999), Tyler and Evans (2003). Indeed, as Croft (1993) observes, meaning-construction appears to proceed by virtue of the 'meaning' associated with a given word being 'calculated' once the meaning of the entire utterance has been established. That is, individual word 'meaning' is determined by utterance meaning rather the other way round. From this perspective, meaning-construction involves first determining the meaning of the whole before the contribution of the parts can be established. Indeed, from a usage-based perspective on language (e.g., Croft 2000; Langacker 2000; see Evans and Green To appear for a review), this state of affairs is entirely natural, as I shall argue.

In this paper I am concerned with doing two things. First, I provide an account of *lexical representation*--the mental (or conceptual) representations associated with words--consistent with the protean nature of word 'meanings' in context. I advance the, perhaps, controversial claim that words do not in fact have meaning, although this position is not without precedent, particularly in the psychology literature (e.g., Barsalou et al. 1993; Murphy 1991). Meaning, on my account, is a function of an utterance, rather than a given lexical representation associated with a word, or other *linguistic* (i.e., symbolic) *unit*. Words, and linguistic units in general, are associated with *lexical concepts* (Evans 2004a; see also Evans and Zinken 2005). A lexical concept is a conceptual representation specialised for being encoded in and externalised by language. Thus, one of the two central proposals of the paper is to present and describe this theoretical construct, and to distinguish lexical concepts from (non-linguistic) concepts (i.e., conceptual structure) and situated meanings (which are associated with utterances).

Second, an account of the contribution of language to meaning-construction cannot be sustained without an account of how lexical concepts are integrated in specific utterances (i.e., linguistically-mediated usage-events). Thus, the second key objective of the paper is to present a programmatic theory of *lexical concept integration* which is compatible with the theory of lexical representation developed. I argue that qualitatively different sorts of lexical concepts combine in slightly different

[1] I will be using the term *utterance-meaning*.

ways. Of course, lexical concept integration is but one small part of meaning-construction. A full account of meaning-construction must take account of at least the following: conceptual processes of integration (what Fauconnier (1997) refers to as 'backstage cognition', and Fauconnier and Turner model in terms of *conceptual integration* or 'blending' (2002)), and integration of extra-linguistic information, including the use of what Crofts refers to a *non-conventional coordination devices*.

2. The Protean Nature of the Meanings associated with Words

As I am centrally concerned with the function of words in combination and thus their role in meaning-construction, the point of departure for the study is the received Fregean view of compositionality

2.1. Compositionality

The traditional view of meaning-construction is based on the assumption that words have sense-units, or 'meanings', which are typically conceived as static 'lexical entries' (Pustejovsky 1995; Tyler and Evans 2001). 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*.

The way the division of labour works in the majority of formal approaches to linguistic semantics is as follows. The lexical semanticist works out how to represent the meanings of words, or more precisely *lexemes*--the meaning that underlies a series of related forms, e.g., *sing, sang, sung, singing*, etc., which are assumed to all have the same meaning, SING--while compositional semanticists work out the principles governing the combination of words into larger units of meaning, and the relationships between words in those larger units. Indeed, the essentially additive nature of this view of compositionality is made explicit by ensuring that the principles which serve to join together semantic units are unable to change or delete the 'meanings' of the units which are conjoined to form a larger semantic unit or expression. This restriction serves to make a larger expression *monotonic* with respect to its component parts, where monotonic has to do with the view that the component parts retain their original meanings in the larger expression (e.g., Cann 1993).

However, this view of compositionality is simply not sustainable given the facts of language. In other words, 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. However, words in use do not appear to behave in this way. That is, 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, its semantic contribution sensitive to and dependent on the context which it, in part, gives rise to.

One of the most insightful observations made by Pustejovsky (1995) in his pioneering work on lexical semantics is that descriptive accounts of lexical semantics which posit a large number of distinct senses for given lexical items, he uses the term *Sense Enumerative Lexicons* (or SELs for short), cannot predict the creative use of

words in novel contexts. That is, even lexicons which assume a high degree of granularity fail on the score of descriptive adequacy in the face of the linguistic facts. Thus, word 'meaning' in context cannot be predicted from a knowledge of the conventional range of uses to which words are put, even when one assumes a highly granular lexicon. Meanings associated with words are in large measure determined by the sorts of contexts in which they are embedded, prone to context-specific shifts in meaning. Indeed, as Pustejovsky illustrates, even the most exhaustive SELs fail to list sufficient 'conventional meanings' to predict the full range of 'meanings' attributed to any given lexical item.

To illustrate, consider the lexical item *fast,* discussed by Pustejovsky. 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 [$fast_1$: to move quickly]
(2) a fast typist [$fast_2$: to perform some act quickly]
(3) a fast decision [$fast_3$: to require little time for completion]

However, the 'definitions' provided do not fully capture the 'type'-semantics 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 order 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 dependencies, 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 features 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.

Having considered an adjective, let's now consider an example of a noun: *book*.

(7) a heavy book
(8) a boring book
(9) a long book

While we might consider the lexical item *book* to refer to rather concrete and unambiguous 'meanings', the examples provided in (7)-(9) all provide novel context-specific readings. While (7) relates to a 'book-as-tome', given that *heavy* selectively 'modifies' the physical and dimensional properties referenced by *book*, the example in (8) relates to 'book-as-text'. That is, *boring* modifies not the physical aspects of what we take a book to be, but rather the text the reader interacts with. Cruse (e.g., 2002) refers to context-dependent 'meanings' of this kind as *facets*. The example in (9) relates to a distinct facet, directly appealing to our understanding of a book as an entity that involves the time-dependent activity of reading. Thus, the interpretation in (9) concerns an entity which takes a particular temporal interval to be read, rather than referring, for instance, to its physical dimensions. What these examples reveal is that the other sentential elements in these examples, rather than modifying a static unitary sense of book, appear to be modifying distinct dimensions of what is, ostensibly, a single entity. In other words, the linguistic evidence suggests that our conceptual representation for book is multifaceted. These distinct facets are brought out by specific utterance (i.e. linguistic) contexts.

Having discussed examples which required closer inspection to see that novel senses are being induced by context, the final example in this section makes the same point in a much more self-evident way. This example relates to what Schmid (2000) terms *shell nouns*. According to Schmid, "Shell nouns make up an open-ended functionally-defined class of abstract nouns that have, to varying degrees, the potential for being used as conceptual shells for complex, proposition-like, pieces of information." (Ibid.: 4). Common examples of shell nouns include: *case, chance, fact, idea, news, point, problem, position, reason, report, situation, thing*. The significance of shell nouns for the present discussion is that the semantic value of the shell noun is contextually determined. Moreover, the shell noun itself serves to characterise and encapsulate the proposition whose 'meaning' it simultaneoulsy takes on. Thus, the 'meaning' associated with the shell noun is paradoxically both a function of and a contributor to the linguistic context in which it is embedded. To illustrate, consider the following example drawn from Schmid (2000):

(10) The Government's **aim** is <u>to make GPs more financially accountable, in charge of their own budgets, as well as to extend the choice of the patient</u>

In the example in (10) the shell noun is in bold. The proposition the shell noun relates to is underlined. The shell noun, the noun phrase in which it occurs, and the proposition it relates to, which here is mediated by the copula, are collectively termed the *shell-content-complex*. According to Schmid the meaning of the shell-content-complex in examples such as this are a function of the specific combination of the shell noun and the proposition it relates to. That is, the shell-like function of the shell noun is not an inalienable property of the noun itself, but rather derives from the way it is used. In this example, the speaker presents a particular proposition as an 'aim'. This provides a particular characterisation for the proposition. Moreover, by providing this characterisation, the shell noun also serves to encapsulate the various components and complex ideas contained in the proposition as a single, relatively stable, albeit temporary, concept. It does so by casting "this complex piece of information into one single noun phrase" (Ibid.: 7). Evidence for this unity comes from the next sentence presented in (11)

(11) **The Government's aim** is <u>to make GPs more financially accountable, in charge of their own budgets, as well as to extend the choice of the patient</u>. Under **this new scheme**, family doctors are required to produce annual reports for their patients…

Here we see that once the complex proposition has been encapsulated, it can be glossed with a different characterisation as signalled by the shell noun phrase *this new scheme*, marked here in bold. In essence, the content associated with shell nouns comes from the propositions they relate to. Yet, the propositions receive their characterisation, and even their construal as a single unified idea from their participation in a shell-content-complex.

Finally, let's briefly consider protean nature of a verb 'meaning'. Consider the following context-dependent alternation associated with the verb *bake*:

(12) Fred baked the potato
(13) Fred baked the cake

While the example in (12) relates to an inchoative (change-of-state) reading, the example in (13) relates to a creation reading. That is, in (13) the 'meaning' of *bake* can be paraphrased by 'made' or 'created', while the 'meaning *bake* in (12) cannot be paraphrased in this way.

The point of the foregoing discussion has been to show that the received view of open class words such as adjectives, nouns and verbs, which have often been assumed to have fixed meanings associated with them, is simply untenable on closer scrutiny. The precise semantic contribution of each is a function of the utterance context in which they are embedded. In other words, words don't have 'meanings' in and of themselves. However, this does not mean that words themselves are devoid of semantic value, which is a different matter, 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.

2.2. Previous Approaches

In this section I briefly review some important representative approaches, by scholars who have attempted to provide accounts of lexical representation which acknowledge the sorts of linguistic facts described above.

One perspective, in attempting to provide an account of lexical representation which respects the facts addressed above, is to increase the number of distinct sense-units associated with a give linguistic unit such as a word. A famous example, which represents this perspective is the study of the English preposition *over* by Brugman and Lakoff (1988; see also Lakoff 1987). Lakoff and Brugman argued for a highly granular account, positing a large number of distinct senses. This approach Lakoff (1987) refers to as the *full-specification account*. However, as Pustejovsky observes, such 'full' accounts of any given lexical item are unlikely to be able to fully predict the range of senses associated with even a single word. This follows as any given usage of an individual lexical item will, from a usage-based perspective, always be unique, and thus provide a subtle meaning distinction. Moreover, distinct instances of use often correlate with subtlety distinct selectional dependencies in terms of collocational patterns. For instance, *I want a beer* versus *I want a cigarette*, etc. involve different kinds of semantic arguments and thus distinct 'meanings' of *want*. Even if we exclude encyclopaedic knowledge from lexical representation as Pustejovsky implicitly does, the selectional dependencies associated with different usages will still far outnumber even the most detailed 'full-specification' or 'sense-enumerative' accounts available.

A second problem that bedevilled the specific account by Brugman and Lakoff (as presented in Lakoff 1987), is that the particularities of the study were methodologically unconstrained. Indeed, Lakoff's (1987) study, while historically important for the development of cognitive lexical semantics, has been shown to be fatally flawed in a number of ways. For critical responses see, for instance, Tyler and Evans (2001, 2003), Kreitzer (1997) Vandeloise (1990).

A second perspective proposes the following. Rather than expanding the number of distinct senses that must be stored in the lexicon, the lexical entry itself can be made more flexible. This might include adding various semantic dimensions to the lexical entry which can be differentially selected for based on the linguistic context which combines with the lexical entry in question. A well-known example of such an approach is that of Pustejovsky (1995). In his account, Pustejovsky argues for relatively abstract lexical *meta-entries*. Although abstract in nature, these meta-entries contain more detail and more flexibility than has traditionally been associated with lexical entries, particularly as advocated in computational and formal approaches to lexical semantics, with one or two notable exceptions (e.g., Sperber and Wilson 1995). This is achieved by positing so-called *qualia roles* associated with any given meta-entry. These qualia roles relate to notions such as purpose, origin, material type, and so forth. Moreover, a particular qualia role need not be filled for a given lexical entry. The advantage of this approach is that it is not 'static' lexical entries that combine in meaning-construction, but rather combinations of qualia roles. This goes some way towards accounting for the protean nature of situated word-meaning.

A significant drawback to Pustejovsky's account, despite its ingenuity, is that it is far from clear that his proposal for lexical meta-entries with qualia structure is psychologically plausible. While psychological validity may not be of paramount concern for linguists who seek a computationally tractable account of word representations in combination, one of Pustejovsky's ultimate concerns, the goal of the present work is to develop an account of linguistic semantics, and in particular a psychologically realistic account. Moreover, recent work in linguistics (e.g., Haiman 1980, Fillmore 1982, 1995, 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. Further, recent work in semantic change both from a historical perspective e.g., Traugott and Dasher (2002), and from an interactional/usage-based perspective (e.g., Croft 2000) appears to strongly suggest that context of use, and hence encyclopaedic knowledge, is required for a proper understanding of how words develop new sense-units. Thus, a cognitively-realistic account must consider an encyclopaedic account in modelling lexical representation.

A third perspective in attempting to account for the facts of word 'meaning' in use, as sampled above, might be to assume that while words have the lexical representations they do, these under-specify for 'meaning in context' due to 'pragmatic principles' which guide the way they are applied in specific utterance contexts. A well-known example of this approach is Herskovits (e.g., 1986) account of spatial prepositions. Herskovits argues that what she terms the 'simple-relations' model of spatial prepositions as presented in formal semantic accounts fails because it underestimates the role of pragmatic knowledge associated with prepositions. However, Hesrkovits herself takes a rather narrow view of what lexical entries associated with prepositions look like. More recent research by for instance Evans and Tyler (2004), Tyler and Evans (2003) and Vandeloise (e.g., 1994), argues that in addition to a spatial relation, prepositions also encode a functional element (see also Evans 2005b). Adopting this proposal makes redundant many of the pragmatic principles posited by Herskovits. Moreover, many of the remaining sorts of facts she seeks to account for appear to be due to composition with other elements, and derive in part from encyclopaedic knowledge of the entity being integrated. Indeed, some aspects of the approach I outline below and in Evans (2005b) as it relates to prepositions has been anticipated in broad outline by work such as Sinha and Kuteva (1995) in their 'distributed' approach to spatial semantics. Thus, a more inclusive view of lexical representation, together with an encyclopaedic approach to lexical semantics, both of which appear to be well supported by the linguistic and psychological evidence available, would better account for the range of data presented by Herskovits.

3.3. Desiderata for an account of meaning-construction

The conclusions to emerge from this discussion suggest a number of desiderata for a theory of lexical representation and a theory of concept integration, which together should contribute to a descriptively adequate and psychologically realistic account of meaning-construction. Lexical entries need to be relatively detailed and flexible, yet they must be methodologically constrained, which is to say, supported by the linguistic facts. We require a theory of lexical representation which interfaces with conceptual knowledge. That is, we require a theory that takes an encyclopaedic perspective on linguistic meaning. We also require an account of how lexical representations 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 concept integration must be thoroughly usage-based in nature.

3. Lexical Representation

I now sketch a theory of lexical representation which satisfies the desiderata just sketched. We defer an account of concept integration for section 4. In the present section two theoretical constructs will be of particular importance: the notion of a lexical concept, briefly mentioned above, and the notion of a *cognitive model*. These

two constructs are central to the theory of lexical representation to be developed, which I refer to as the *Theory of Lexical Concepts and Cognitive Models* (LCCM).

3.1. Meaning and Use

I begin my account of lexical representation by briefly presenting an account of linguistic structure as it relates to language use. That is, I adopt a version of the *usage-based thesis* which I present below. This is fundamental to LCCM theory.

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 (see Evans and Green To appear: 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.[2]

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 novels 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. 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). Unfortunately they are not. As with the distinction

[2] As Croft (2000) notes, this is precisely why language change is possible, and proceeds as rapidly (in relative terms) as it does.

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 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 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 or 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. In this respect, utterances differ from the related notion of *sentence*.

A sentence, as defined in particular by formal linguists, is an abstract entity. In other words, it is an idealisation that has determinate properties, often stated in terms of grammatical structure. For example, one definition of (an English) sentence might consist of the formula: $S \Rightarrow NP\ VP$

The notion of a sentence, while based on prototypical patterns found in utterances, is not the same as an utterance. Utterances typically occur spontaneously, and often do not conform to the grammaticality requirements of a well-formed sentence, as understood in formal linguistic theory. For example, in terms of structure, an utterance may consist of a single word (*Hi!*), a phrase (*No way!*), an incomplete sentence (*Did you put the …?*), or a sentence that contains 'errors' of pronunciation or grammar because the speaker is tired, distracted, or excited, and so on. While much of formal linguistics has been concerned with modelling the properties of language that enable us to produce grammatically well-formed sentences, utterances often exhibit *graded grammaticality* (see Langacker 1987; see also Evans and Green To appear). As this discussion reveals, while a sentence can be precisely and narrowly defined, an utterance cannot. While sentences represent the structure associated with a prototypical utterance, utterances represent specific and unique instances of language use. Once a sentence is given meaning, context and phonetic realisation, it becomes a (spoken) utterance. Although the theoretical construct of 'sentence' might suit the aesthetic tastes of linguists of certain persuasions, as I am concerned with an account of lexical representation and meaning-construction that reflects how language is used, it is ultimately the utterance, rather then the idealised notion of the sentence, which is most relevant for present purposes.

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.

3.2. Lexical Concepts

Having examined the distinction between conceptions (meanings) and lexical concepts (lexical representations) we now examine the notion of lexical concepts in more detail. In informal terms, a lexical concept constitutes a sense-unit or conceptual representation conventionally associated with a particular linguistic form. I now present five fundamental properties associated with the lexical concept qua mental entity.

As noted above, linguistic units, as I use the term, are conventional pairings of form and meaning. From this it follows that lexical concepts are *form-specific*.

Second, given the definition of 'linguistic unit' I have provided, 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.

Third, as mentioned above, 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.[3] That is, forms are not *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 To appear, 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.

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 can be glossed by a particular semantic value—I will use the mnemonic of small capitals inside square brackets—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., collocational and formal patternings) associated with a given usage. While any given usage of a lexical concept will have its own unique selectional specifications, general patterns ('tendencies') can be established, and form part of the conventional knowledge associated with a particular

[3] See Evans (2005a) and Tyler and Evans (2001, 2003) for detailed discussion of polysemy.

lexical concept.[4] General selectional patterns in terms of collocational and grammatical tendencies are what I refer to as a *lexical profile*.

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.

To get a sense of how the lexical profile can be used to identify distinct lexical concepts which underlie specific usage-events, I present the lexical profiles for a number of distinct lexical concepts encoded by the polysemous forms *time* (a noun), fast (an adjective), and *fly* (a verb). This discussion is based on Evans (2004a; see also Evans 2004b, 2005a), and Evans and Green (To appear).

Consider the following examples illustrating examples sanctioned by distinct lexical concepts for *time*:

(14) Time flies when you're having fun
(15) The time for a decision is getting closer
(16) The old man's time [= death] is fast approaching
(17) Time flows on (forever)

These instances of the lexical form *time* all appear in the 'subject' phrase. Moreover, the verb phrase which complements the subject phrase relates to a motion event. Thus, motion is being ascribed to the entities *time* contributes in prompting for, in each example. Yet, the semantic contribution associated with *time* appears to be distinct in each example. In the first example, the semantic contribution associated with *time* appears to relate to an assessment of temporal magnitude. Thus, we might gloss the semantic value associated with this instance of *time* as [DURATION]. In (15) the semantic contribution of *time* might be glossed as [MOMENT]. This follows as the conception associated with the utterance as a whole relates to a specific temporal moment when a particular decision is to be taken. Thus, the contribution of *time* in this example appears not to relate to a durational elapse, but rather a discrete instant. In (16) the semantic contribution associated with *time* appears to relate to an event, which extra-linguistic context informs us is death. Thus, this instance might be glossed by [EVENT]. Finally, in (17), the semantic contribution associated with *time* appears to relate to an unending temporal elapse. In earlier work, I described this as the 'matrix' sense associated with *time*, in which we understand Time to be 'the' event in which all other events occur. Thus, the gloss we might apply to describe this instance of *time* is [MATRIX].

Based on the quite distinct semantic contributions associated with this range of usages of *time*, I argued in Evans (2004a) that there are a range of distinct lexical concepts associated with *time* identified by the glosses introduced above. Moreover, each of these distinct usages has a distinct lexical profile associated with it which supports this perspective. Let's illustrate for each.

I begin by examining the grammatical tendencies associated with each use of *time*. To do this, let's consider the kind of noun phrase in which each semantically-distinct use appears. We first note that the examples in (14) and (17), appear, on the face of it, to be similar. Neither is pre-modified by a determiner. However, further

[4] 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).

examples reveal that the [DURATION] lexical concept of *time* as in (14) can be determined by the definite article when the assessment of temporal magnitude is specific rather than generic, while the [MATRIX] lexical concept cannot be:

(18) During the dinner date, the time seemed to fly [DURATION]
(19) *The time flows on (forever) [MATRIX]

Indeed, this patterning appears consistent with the semantics of these uses. While the [MATRIX] lexical concept already relates to a unique referent, the event which subsumes all others, and thus further specification which the definite article would provide is superfluous, with assessments of temporal magnitude both specific and more generic readings are available, encoded by determiner patterns exhibited in (18) and (14) respectively. Thus, we can say that while both the [DURATION] and [MATRIX] lexical concepts appears to pattern formally like mass nouns (see Evans 2004a for evidence that they fail to allow determination by the indefinite article), the [DURATION] lexical concept, but not the [MATRIX] lexical concept, allows determination by the definite article.

The examples in (15) and (16) also exhibit unique patterns in terms of grammatical collocational tendencies, both from each other and from the examples in (14) and (17). The [MOMENT] lexical concept appears to pattern straightforwardly as a count noun, allowing determination by the definite article, as in (15), or by the indefinite article, as in (20) below:

(20) A time will come when we'll be forced to make a decision [MOMENT]

The [EVENT] lexical concept in (16) appears to require a pre-modifying genitive noun phrase followed by the enclitic possessive '-s', or else an attributive pronoun, serving a similar function:

(21) His time [=death] is fast approaching.

Thus, in subject position, these uses of *time* all appear to have quite distinct formal selectional tendencies.

Let's now turn to the semantic selectional tendencies associated with these uses of the lexical concepts associated *time*. The point here is that the nature of the motion event encoded by the verb phrase is distinct for each of the semantic uses. Moreover, the choice of motion event type is compatible with the semantic value of the lexical concepts which underlie each use (see e.g., Evans 2004a, for detailed discussion). For instance, the [DURATION] lexical, and this particular variant—which in previous work I refer to as [TEMPORAL COMPRESSION] as this instance relates to an assessment of temporal magnitude which proceeds more 'quickly' than usual—is complemented by verb phrases which encode motion events which are rapid in nature, as evidenced by the example in (14).[5] In contrast, the [MOMENT] lexical concept appears to allow a wider range of motion events, including imperceptible motion as in (22), rapid motion, as in (23), and terminal motion, as in (24):

(22) The time for a decision has gone/vanished/disappeared

[5] The TEMPORAL COMPRESSION variant of DURATION associated with *time* can also be structured in terms of motion events which relate to a lack of perceptual awareness, such as the following: *Where has the time gone? The time seemed to have vanished*, etc.

(23) The time for decision is racing towards us/fast approaching
(24) The time for a decision is approaching/getting closer/has arrived

The [EVENT] lexical concept appears to restrict the range of motion events which can collocate with it to terminal motion events, i.e., motion events which terminate 'at' the experiential locus, typically a human experiencer. Finally, the [MATRIX] lexical concept appears to require motion events which are non-terminal in nature. That is, it requires motion events which are on-going, a paradigm example being 'flow'. Thus, each of the examples represent specific instances of distinct lexical concepts which exhibit distinct semantic and formal selectional tendencies: distinct lexical profiles.

Of course, it is often the case that more than one lexical concept may be sanctioning a particular use of a form. This state of affairs I refer to as *multiple sanction*. To illustrate, re-consider the example of the adjective *fast* in (6) reproduced below:

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

As observed above, the way *fast* is used by language users appears to assume a number of distinct lexical concepts, including those that can be glossed as [PERFORM SOME ACT QUICKLY] and [REQUIRE LITTLE TIME FOR COMPLETION], which are equivalent to *fast2* and *fast3* introduced earlier. Evidence for positing two distinct lexical concepts glossed in this way comes from the distinct lexical profiles associated with these distinct semantic values, in the same way that distinct lexical profiles were provided in support of distinct lexical concepts associated with *time*. Yet, as noted, the example in (6) appears to be a 'blend' of both these two lexical concepts. In other words, the semantic contribution of fast in this particular usage-event involves nuances relating to both these lexical concepts. A garage is required in which the mechanics can both perform the relevant repairs quickly, and in doing so take little time for completion of repairs, given that the car will be required the day after tomorrow.

Now consider a further illustration of the lexical profile relating to distinct lexical concepts associated with a single form. This time we consider just a few of the many lexical concepts associated with a particular verb: *(to) fly*.

(25)	The plane/bird is flying (in the sky)	[SELF-PROPELLED AERODYNAMIC MOTION]
(26)	The pilot is flying the plane (in the sky)	[OPERATION OF ENTITY CAPABLE OF AERODYNAMIC MOTION]
(27)	The child is flying the kite (in the breeze)	[CONTROL OF LIGHTWEIGHT ENTITY]
(28)	The flag is flying (in the breeze)	[SUSPENSION OF LIGHTWEIGHT OBJECT]

For convenience I have glossed the apparent semantic contribution of each of the instances of *fly*. The glosses appear in square brackets alongside the relevant examples. These data, and the glosses suggest that each instance is sanctioned by a distinct lexical concept associated with *fly*. If so, we should expect to be able to adduce a distinct lexical profile associated with each. Unlike nouns, for which a salient grammatical feature is how they are determined, a salient grammatical feature for verbs is transitivity. In terms of formal dependencies then, we see that the hallmark of the lexical concepts which license the uses in (25) and (28) is the lack of a direct object (an intransitive verb). This contrasts with the lexical concepts which

sanction the examples in (26) and (27) which both require a direct object (a transitive verb). This distinction in transitivity fails to distinguish (25) from (28) and (26) from (27). For this we must rely on semantic dependencies. The hallmark of each of these lexical concepts is that they require distinct semantic arguments.

For instance, the [SELF-PROPELLED AERODYNAMIC MOTION] lexical concept which is held to sanction the use of *fly* in (27) only applies to entities that are capable of self-propelled aerodynamic motion. Entities that are not self-propelled, such as tennis balls, cannot be used in this sense (**the tennis ball is flying in the sky*).

The lexical concept which underlies the use of fly in (26): [OPERATION OF ENTITY CAPABLE OF AERODYNAMIC MOTION], is restricted to the operation by an entity which can be construed as an agent, and moreover, to entities that can undergo self-propelled aerodynamic motion. Further, the entity must be able to accommodate the agent and thereby serve as a means of transport. This explains why planes and hot air balloons are compatible with this sense, but entities unable to accommodate an agent are not. This is illustrated by example (29).

(29) ??He flew the sparrow across the English Channel

Nevertheless, entities which can be construed as being guided, or at least susceptible to being trained by a volitional agent which cannot accommodate an agent, are partially sanctioned by this lexical concept, as the following example illustrates:

(30) He flew the homing pigeon across the English channel

In the case of [CONTROL OF LIGHTWEIGHT ENTITY] as evidenced by the use of *fly* in (27), this lexical concept appears to be restricted to entities that are capable of becoming airborne by turbulence, and can controlled by an agent on the ground. This lexical concept appears to be specialised for objects like kites and model/remote controlled aeroplanes.

Interestingly, as we saw in our discussion of *fast*, particular instances of *fly* appear to rely on multiple sanction. In the following example:

(31) The kite is flying (in the sky)

this use appears to be partly sanctioned by both the [SELF-PROPELLED AERODYNAMIC MOTION] and the [CONTROL OF LIGHTWEIGHT ENTITY] lexical concepts. It adopts the grammatical patterning of the former lexical concept, but we understand that it must be controlled by an agent, rather then being self-propelled.

The final lexical concept, glossed as [SUSPENSION OF LIGHTWEIGHT OBJECT], selects for entities that can be supported by virtue of air turbulence, but remain 'connected to' the ground. This lexical concept applies to flags as well as hair and scarves, which can 'fly' in the wind.

The final property associated with lexical concepts relates to the *semantic value* provided 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 represent. Before considering the sort of conceptual knowledge that lexical concepts provide, 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). Accordingly, they are of a

quite different kind from the sorts of conceptual representations described by psychologists. In other words, while lexical concepts are conceptual in nature, they are not the same sort of entity that psychologists refer to as 'concepts'. This is an issue we will return to later.

The semantic value associated with a lexical concept has (at least) five dimensions, treated in turn below. First, lexical concepts provide an *informational characterisation*. They do this by providing access to conceptual (or "encyclopaedic") knowledge structures. Put another way, they 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 for the protean nature of word 'meanings' in language use.

However, the informational characterisation provided 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 rich informational characterisation 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 informational characterisation. While [AUTOMOBILE] is *richly detailed* in its informational characterisation, which is to say the *access* it affords (a notion discussed in detail later), [THING] is *poorly detailed* (or *impoverished*), in relative terms.

One obvious way in which levels of informational characterisation 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 informational characterisation.

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. 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.

Another, perhaps obvious example comes from lexical concepts which serve as 'encapuslators' par excellence. Such an example relates to shell nouns (Schmid 2000), discussed earlier. As we saw in example (10) reproduced below, the shell noun by providing a conceptual frame or shell for interpreting a complex idea, the proposition underlined, serves to encapsulate the content associated with the phrase as a single coherent concept, labelled as an 'aim'.

(10) The Government's **aim** is <u>to make GPs more financially accountable, in charge of their own budgets, as well as to extend the choice of the patient</u>

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. For instance, the [CONTACT] lexical concept encoded by *on* encodes relational information relating to a figure and reference object, as exemplified by the following prepositional phrase: *the cat on the mat.*

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'. Langacker (1987) refers to this distinction as *sequential scanning* versus *summary scanning*.

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.

3.3. 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 informational characterisation provided by lexical concepts. This section is concerned with introducing and describing the construct of the *cognitive model*. My claim is that cognitive models, related to the notion of *frame* (Barsalou 1999), *semantic frame* (Fillmore e.g., 1982; 1985; Fillmore and Atkins 1992) and *base* (Langacker 1987) but distinct from all three is necessary for understanding the way lexical concepts contribute to meaning-construction. The main claim is that lexical concepts both provide sites of access to cognitive models, and are relativised with respect to them.

The case for thinking that lexical concepts presuppose, and are thus relativised to background knowledge structures have been made by a number of scholars. Perhaps the most compelling arguments are associated with the work of Langacker (e.g. 1987) and his theory of domains, and Fillmore (e.g., 1982, 1985) and his theory of Frame Semantics. Fillmore's point is that any given lexical concept is relativised with respect to and thus can't be understood without the other lexical concepts which collectively comprise the knowledge structure, or semantic frame that it forms part of. In related fashion, Langacker argues that part of the meaning of any lexical item is a function of the knowledge structure or *base* that is presupposed by it. For instance, the lexical concept [HUMAN MAJOR ARM JOINT] associated with the form *elbow* cannot

be properly understood without knowledge of the arm which is necessary for understanding the nature and function of the elbow.

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 base or semantic frame, is that a cognitive model, in my sense, is a coherent 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 seems to tend 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 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 perspectives or construals with respect to the cognitive model, in part, constituting it. 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-model conceptual entities, which can be used as a basis for what Barsalou and others (e.g. Prinz 2002 and Zwaan 2004) refer to as *simulations*.

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', including information such as whether it need 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. 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 concepts is termed the *primary cognitive model profile*. For instance, the lexical concept [BOOK] is relativised to at least two primary cognitive models, a cognitive model relating to the physical structure associated with books, termed BOOK. It is also related to another cognitive model which relates to the activity associated with books, termed READING. That is, part of our knowledge associated with books relates to our knowledge that they have a particular organisation and physical structure, such as a binding, a hard-back or paper cover, pages with text on, etc., and an understanding of how we interact with them, and the sorts of skills and activities involved in this interaction. Note that cognitive models are glossed by mnemonics without square brackets, in contrast to lexical

concepts. Thus, the lexical concept [BOOK] provides an access site in two primary cognitive models. It is for this reason that the form *book*, which encodes this lexical concept, can be modified providing distinct interpretations:

(35) a. a heavy book
b. a long book

These interpretations are due to different *access routes* afforded by the access sites in two cognitive models provided by this lexical concept. Modification of *book* by the lexical concept encoded by *long* provides access to the READING cognitive model, and our knowledge that some books require extended periods of time to be read. Modification by *heavy* relates to the physical organisation of books, and our knowledge that some such entities consist of more pages and thus are heavier, etc.

Indeed, the lexical concept [BOOK] provides access sites to many more than two primary cognitive models. Another salient primary cognitive model is SHOP, which relates to the venues in which books are purchased, LIBRARY which relates to the venue where books can be borrowed, and of course, more specific cognitive models, given that we have detailed and coherent bodied of information for different sorts of shops where books are purchased, such as an on-line bookstores, and different sorts of libraries: public libraries, university libraries, secondary-school libraries, etc.

3.4. The distinction between words, concepts and meaning

Having presented an overview of a theory of lexical representation, we are now in a position to briefly contrast the notion of lexical concept with that of 'concept', and 'meaning'.

Lexical concepts are conceptual representations which provide access sites to conceptual (or "encyclopaedic") multi-modal knowledge, but assume a form that is encodable via symbolic representation. As we saw earlier, they encode a number of language-specific properties. Thus, they are conceptual representations specialised for representation in language. Thus lexical concepts are not the same kind of conceptual unit that psychologists typically have in mind when they use the term 'concept'. This follows as psychologists often assume that 'concepts' are what Prinz (2002) refers to as the "basic timber of our mental lives" (Ibid.: 1). According to Barsalou (1992a) the two key functions of concepts are that they facilitate categorisation and can be employed in reasoning processes. Clearly, in the context of the present paper, it is the rich cognitive models I have sketched, rather than lexical concepts, which provide these functions. In present terms, lexical concepts provide access sites to these far more complex "concepts".

In terms of meaning, I have claimed that words in and of themselves do not 'mean' nor do they have 'meanings' associated with them. The view that meaning-construction results from composing word 'meanings' is, I have argued an incorrect (i.e., empirically inaccurate) way of viewing the contribution of words to the meaning-construction process. Rather, meaning is a function of utterances. Whole words do encode conceptual representations: what I have been referring to as lexical concepts. Yet, these are not the same as meaning(s), which is a function of situated language use.

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*, which I address below. Composition also accounts for *semanticality*—semantic well-formedness. I address each of these issues below.

4.1. 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 are occurring 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:

(36) 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 (36) 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:

(37) The judge asked the defendant to approach the bar
(38) 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 public house' at which alcohol is purchased and served. The appropriate lexical concept is selected in these examples due to the linguistic context.

Another example of context-selection involving linguistic context selecting the appropriate lexical concept is illustrated by ellipsis of the following kind, often termed *zeugma*:

(39) On the day my driving licence expired, so did my old dad

In this example, a different lexical concept for *expired* is selected in each clause, despite the verb not appearing in the second clause. In the first clause, the lexical

concept selected for can be glossed as [EXPIRATION OF PERMISSION], in the second [DEATH].

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:

(40) 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. Thus, co-selection crucially relies on knowing the *topic*, which guides the co-selectional process. Indeed, this is what Croft was 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 (40) 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 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 (40) relates to the rejection of the EU constitution by a majority of French voters.

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.

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):

(41) 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 is termed *constituency* by Langacker. 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 (building utterances from smaller 'meaning' constituents). However, and crucially, it is important to emphasise that what license these processes are coherence of the integration is compatibility of the lexical concepts involved (rather than, for instance, semantically 'blind' syntactic processes, as in many formal approaches). Indeed, semantic incompatibility relates to utterances which are semantically anomalous, an issue discussed later.

INTERPRETATION

Interpretation is a process that proceeds in conjunction with integration. While integration serves to conjoin lexical concepts, interpretation serves to *highlight* part of the (primary) cognitive model profile that each lexical concept provides access to, 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, prepositions, and verbs.

Earlier in the paper, I touched on a process termed access. This relates to the ability of lexical concepts to provide different 'access routes' through conceptual knowledge. This is facilitated as lexical concepts serve as access sites to typically more than one primary cognitive model, and are thus associated with a primary cognitive model profile. Of course, the ability of a given lexical concept to provide conceptual access in this way is a function of the relatively rich level of detail provided by the informational characterisation, in the sense defined earlier, associated with the lexical concept. Some lexical concepts are particularly richly detailed in this regard, while others are less richly detailed. Indeed, the traditional distinction between content words and grammatical or function words, in part responds to the intuition that certain lexical concepts are more richly detailed than others. The distinction between open versus closed class forms, which roughly concerns the content/grammatical word distinction, relates to the observation that lexical concepts associated with open class forms provide more richly detailed informational characterisations than lexical concepts associated with closed class forms. However, as noted earlier, the distinction is better thought of as a continuum. For instance, many of the range of lexical concepts encoded by English prepositions, for instance, while not providing access to conceptual knowledge which is as richly detailed in terms of their informational characterisation as for instance, lexical concepts encoded by many kinds of noun forms, lexical concepts associated with prepositions do nevertheless provide access sites to relatively complex encyclopaedic knowledge (see Evans 2005b for details; see also Tyler and Evans 2003).

For instance, in previous work Tyler and I argued that the prototypical spatial lexical concept associated with a preposition relates to what we termed a *proto-scene*. The proto-scene associated with the [ABOVE] lexical concept for *over*, is given as figure 1.

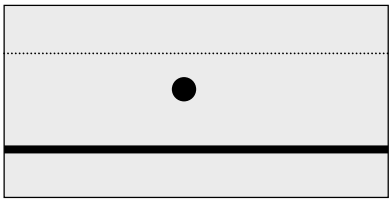

Figure 1: Proto-scene for *over* (After Tyler and Evans 2003)

Utterances sanctioned by this lexical concept include the following:

(42) The picture is over the sofa
(43) The lamp is over the desk

The proto-scene, minimally represented diagrammatically by figure 1--but note the diagram has no psychological status, and does not relate to any claim that proto-scenes are encoded solely in the visual modality--encodes a considerable amount of detail. For instance, it includes information relating to a figure, which is designated by the small black circle. It includes information relating to the ground, which is to say, the reference object that serves to locate the figure. It also includes information

relating to the relative dimensions of the figure and reference object, the spatial relation which holds between them, and that the figure must be proximal to the reference object, as indicated by the dashed line which defines a notional boundary beyond which an entity cannot be 'over' something else. Other information also includes the vantage point, i.e., the scene is being viewed from the side, such that the perceiver is located on the ground, and has an up-down orientation in line with the earth's gravitational pull. Thus the proto-scene contains considerable detail. In present terms, the proto-scene constitutes a primary cognitive model, with respect to which the [ABOVE] lexical concept is relativised.

However, a further point emphasised by Tyler and Evans was that spatial lexical concepts encoded by prepositions also designate a *functional element*. For instance, the [ABOVE] lexical concept for *over* relates to the functional notion of 'influence'. To illustrate consider the following:

(44) The headmaster stood over the naughty pupil

In this example, the use of *over* strongly implicates an interpretation of control and influence. This is a functional consequence of being proximal and above.

Similarly, while examples in which great distance is involved, i.e., in which the figure is potentially not proximal to the reference object, examples are acceptable with an [ABOVE] reading of *over* if the reference object and landmark can be construed as within each others 'sphere of influence'.

(45) There's a plane over the city
(46) ??There are birds somewhere over us

The example in (25) is natural with *over*. Even though the plane might be several miles up in the sky, it is visible and we can hear it. Thus, it is perceptually salient and to a degree 'affects' the experiencer on the ground, particularly those residents who are unfortunate enough to live under an airport's 'flight path', and whose sleep is regularly disrupted. In contrast, stating that 'there are birds over us' is unnatural, although this would be fine with *above* which doesn't have the restriction on spatial proximity (see Tyler and Evans 2003 for details). This follows as the 'birds' and the reference object, 'us', cannot be construed as influencing/affecting one another. Evidence of this sort, indicates that in addition to providing access to a spatial cognitive model, the primary spatial lexical concept for *over* also provides access to a cognitive model relating to perceptual and physical influence. Thus, while interpretation involved in the 'plane over city' example provides salient access via both cognitive models, the interpretation associated with the 'picture over the sofa' requires salient access primarily via the spatial cognitive model.

Access appears to be a phenomenon that applies to the situated interpretation of all the lexical classes under examination in this paper. For instance, we briefly considered above examples relating to *book* (recall discussion of the examples in (35) earlier). We will also consider the phenomenon of access later, when we briefly consider interpretations relating to the phenomenon traditionally identified as metonymy.

While access is a general process of interpretation, lexical concepts associated with particular lexical classes also appear to have more form-specific interpretation processes, which I discuss below. Of course, these more specific processes are a function of the sorts of lexical concepts that happen to be encoded by particular

forms, and the way they are integrated with the range of lexical concepts typically associated with them, rather than being due to the forms themselves.

We begin by examining *perspectivisation*, an interpretation process that affects lexical concepts encoded by noun forms. While access provided an interpretation by providing an access route via a distinct primary cognitive model (or models), perspectivisation takes place by virtue of *highlighting* a distinct aspect, what I will refer to as a *facet*, of a single primary cognitive model. The distinction between access and perspectivisation can best be illustrated by reconsidering examples (35a) and (35b), reproduced below, together with a further example (47):

(35) a. a heavy book
b. a long book
(47) a boring book

The distinction between the examples (35a) and (35b) relates to access as noted earlier. However, the distinction between (35a) and (47) relates not to access but rather perspectivisation. In other words, the conceptions derived from (35a) and (47) are based on a single cognitive model, namely the cognitive model BOOK. A book has part-whole structure which includes its physical structure, and the text which is printed on the pages of the book which depicts a 'story'. That is, these examples perspectivise distinct facets of the BOOK cognitive model, a TOME facet and a TEXT facet respectively.[6] That is, *boring* serves to perspectivise the TEXT facet, which is being evaluated in a negative way. The distinction between the cognitive models involved and the facets they relate to are captured in figure 2.

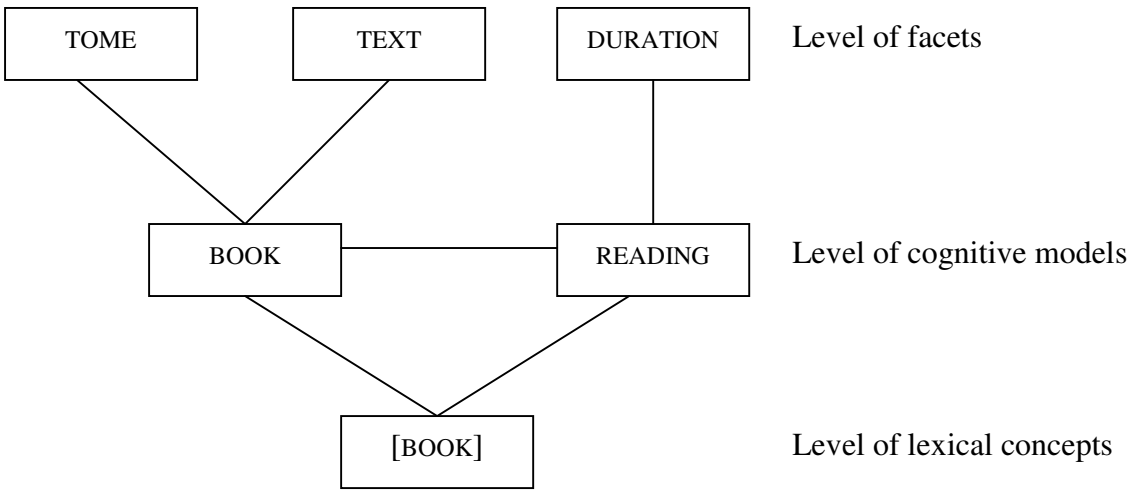

Figure 2: The relationship between lexical concepts, cognitive models and facets

In figure 2, lines between boxes denote conceptual connections. The lexical concept [BOOK] can access either of its distinct primary cognitive models, as evidenced by the examples (35a) and (35b), or a particular facet of a single cognitive

[6] Needless to say, facets can, in turn, potentially serve as cognitive models for other lexical concepts. What counts as a facet or a cognitive model is a matter of contextual relevance, and what is conventionally presupposed by the particular lexical concepts in question.

model can be differentially perspectivised, as illustrated by the distinction between (35a) and (47). Alternatively, the entire primary cognitive models profile (or at least part of it) can be accessed, as illustrated by the following example:

(48) That book is both long and boring

In this example the reading process and the duration required is accessed by the use of *long*, while *boring* perspectivises part of the BOOK cognitive model. Alternatively, two or more facets of a single cognitive model can be simultaneously perspectivised:

(49) That book is heavy and boring

Finally, on the topic of nouns, we consider a special case of access, often identified as 'metonymy'. We saw an example of metonymy above, reproduced below:

(40) France shot down the EU constitution

What is metonymic here is the use of 'France', which refers not to the geographical landmass, the 'literal' interpretation, but rather a portion of the French electorate eligible to vote; namely, those French voters who voted against the EU constitution. The intuition of many native speakers and analysts is that this usage is somehow 'figurative'. From the present perspective, cases of metonymy such as this constitute a special case of access.

However, what makes examples such as this distinct from more regular and less 'figurative' forms of access is that the lexical concept [FRANCE] is providing access not to one of the primary cognitive models that it serves as an access site for, which include at least GEOGRPAHICAL LANDMASS, POLITICAL NATION STATE, HOLIDAY RESORT/DESITINATION, etc. Rather, this lexical concept is providing access to a *secondary cognitive model*. A secondary cognitive model is a cognitive model outside the primary cognitive model profile of the lexical concept, and thus one that is accessed not directly but via a primary cognitive model. In this instance, the cognitive model FRENCH ELECTORATE is accessed via the primary cognitive model POLITICAL ENTITY. Moreover, a facet of the secondary cognitive model is being perspectivised, namely that portion of the voters who voted and more specifically, voted against the EU constitution. Thus, the present approach, involving lexical concepts and cognitive models, provides a unified way of accounting for the semantic contribution of a range of linguistic phenomena affecting nouns, as they contribute to the formation of a conception.

Indeed, metonymy is often held to be a 'special' type of language use which is 'figurative' (as opposed to 'literal') in nature. As we have seen, such 'figurative' uses of language receive a natural treatment in the LCCM approach being presented here. Moreover, the distinction between such 'figurative' versus 'literal' uses of language is not seen as being different in principle. Rather, the distinction is due to the sort of access that that the lexical concept is providing, given the processes of co-selection described earlier. On the present account then, we have a unified treatment of both 'literal' and certain kinds of 'figurative' language. Indeed, the present approach can also account for other kinds of figurative language such as metaphor, without requiring other theoretical machinery. A theory of conceptual projection employing

the constructs of lexical concepts and cognitive models along the lines developed here is presented in Evans and Zinken (2005).

We now turn to a consideration of adjectives, prepositions and verbs. The interpretation process which affects lexical concepts associated with these word classes I refer to as *adjustment*, in order to distinguish the process from that of perspectivisation. The reason for selecting a distinct term is that the process involved appears to be slightly different, a consequence of the relational nature of these lexical concepts. The main difference appears to be that while perspectivisation affects 'what' is being highlighted, e.g., TOME vs. TEXT facet, adjustment affects the quality of, and thus 'how' the entity in question is being highlighted. Consider some examples by way of illustration:

(50) a. a small mouse
b. a small elephant
(51) a. a red pen
b. a red squirrel
(52) a. a good man
b. a good meal
(53) a. the fly in the vase
b. the crack in the vase

With the examples of *small*, and *red* in (50) and (51) the sensory qualities interpreted will depend of the lexical concept with respect to which it is fused. Similarly, the interpretation of *good*, is adjusted depending on the composite lexical-conceptual structure it is involved in. For instance*, a good man* might possess attributes such as physical beauty, honour, providing for his family, and so on, depending upon context, etc. The sorts of qualities associated with *a good meal*, however, are more likely to include the size of the portions, how tasty the food is, that it consists of wholesome ingredients, and so on. Equally, with the example involving *in*, the precise nature of the metric details associated with the spatial relationship is affected by the figure and reference object involved. While the first example relates to the interior volume bounded by the vase boundary, the second example construes the boundary itself as having an interior which can 'contain' a crack.

Now reconsider the lexical concepts encoded by the verb *bake*: the change-of-state/creation 'alternation' discussed above, examples reproduced below:

(12) Fred baked the potato
(13) Fred baked the cake

In these examples the informational characterisation associated with *bake* is adjusted in the light of the informational characterisation accessed by virtue of the other lexical concepts integrated in the composite lexical-conceptual structure. Previous researchers have referred to this process of adjustment by terms such as 'accommodation' (e.g., Talmy 1977) or 'coercion' (e.g. Pustejovsky 1995; Goldberg 1995). However, such scholars have emphasised the role of other aspects of language in 'coercing' the 'meaning' of the preposition or verb. For instance, Goldberg argues that sentence-level verbal argument constructions coerce verbal meanings. The reason for selecting the term adjustment here is that the process I am describing relates not primarily to one-sided coercion by the grammatical construction. Rather, the adjustment is a consequence of a mutually interdependent process of interpretation

in which *bake* provides access to an informational characterisation associated with rich conceptual knowledge, part of which is highlighted in conjunction with and in response to the informational characterisation provided by other lexical concepts in the composite lexical conceptual structure. Thus, perspectivisation and adjustment are processes of interpretation which necessitate accessing cognitive models which lexical concepts provide access sites to, but the nature of the information accessed must be 'calibrated' with respect to the contribution of the other lexical concepts in the composite lexical conceptual structure. Moreover, adjustment is also guided by other 'contextualisation cues' such as speaker communicative intention, extra-linguistic context, and so forth.

4.3. Semanticality

Finally, have provided a programmatic sketch of how the constructs of lexical concepts and cognitive models might relate to a cognitively realistic approach to compositional semantics, conceptions, by definition are semantically coherent. We will see that this is the case by considering cases in which conceptions fail.

The term *semanticality*, introduced into linguistics by Pustejovsky (1995), relates to the semantic well-formedness of an utterance. Semantically well-formed utterances give rise to conceptions. Utterances that fail in this regard are semantically anomalous. However, as with the related notion of grammaticality, semanticality or semantic anomaly is a matter of degree rather than an either/or distinction.

The principle reason for semantic failure appears to be a failure in matching semantic selectional dependencies, discussed earlier. Of course, semantic selection dependencies, or collocational patterns are a consequence of semantic compatibility. Even lexical concepts that are potentially dissonant and can be said to *clash*, need not result in the failure to form a conception. This follows as the informational characterisation (the conceptual knowledge) which lexical concepts provide access sites to is vast and extremely richly detailed, allowing the possibility of novel access routes, perspectivisations and adjustments resulting in a semantically well-formed conception. Indeed, this is the strategy that prevails in so-called 'figurative' language use.

To consider this phenomenon consider some examples involving the verb *began*:

(54) a. He began the book
b. ?He began the dictionary
c. ??He began the rock

While the first example evidences a semantically well-formed utterance, the second example is semantically odd. This follows as dictionaries are not something we 'begin', as their function relates to reference and look-up. Thus, there is a mismatch between the informational characterisations provided by the cognitive model profiles accessed by the lexical concepts.

However, in certain situations extra-linguistic context can help, as pointed out by Pustejovsky (1995). For instance, Malcolm X, the Black American civil rights activist who promoted violent struggle, is famously known to have read a dictionary while in prison 'like a book'. As the only book available to him was a dictionary he began at the letter A and read through to Z. In such a situation, the example in (54b) becomes semantically acceptable.

The example in (54c) is semantically anomalous as a rock is not an entity that has internal structure that is subject to a sequential process that can be construed as having a starting point. Thus, while a dictionary is a book, that can, under certain novel contexts, be construed as an entity that can be read sequentially, (54b) is less semantically anomalous that (54c).

Interestingly, notice that where another form has a somewhat related lexical concept as when two lexical concepts collocate: *start the car*, the lexical concept encoded by *begin* cannot be used: *?begin the car*, unless by 'begin the car', we mean something like 'begin its construction'.

The point then, is that both the lexical profile associated with lexical concepts and the semantic value of lexical concepts, as defined, are necessary for understanding the phenomenon of semanticality and semantically anomalous composition.

5. Conclusion

It is widely assumed that concepts are publicly available via language (e.g., Rey 1983; Peacocke 1992; Fodor 1998; Prinz 2002). People understand each other's words in virtue of associating the same, or nearly the same, concepts with them. The received view of linguistic meaning approaches to semantics has been to assume that words 'match up' to the entities they denote in relatively straightforward and uncomplicated ways. Words encode static meanings which can be 'added together'. The problem with this standard view is that words appear to be semantically indeterminate. Despite the staggering amount of research on different sorts of distinct sense-units, empirical evidence shows that word-'meaning' is protean, and highly context dependent. That is, words can't be defined in the way that is required for the Fregean notion of compositionality to apply. The reason for the indeterminacy of word-'meaning' in part derives from an attempt in on-going communication to solve a variety of 'co-ordination problems'. Language use makes use of stable knowledge in service of novel meaning-construction.

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, don't 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. 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. Lexical concepts are integrated, guided by a number of principles, giving rise to utterance meaning: a conception.

The significance of the theories of lexical representation and meaning-construction I have developed is that we are provided with a distinction between meaning and representation. Moreover, the present approach provides a way of connecting the concerns of lexical and compositional semantics with cognitive approaches to grammar and the conceptual processes which underpin these, as studied, for instance by Fauconnier and Turner (e.g., 2002). Current and future research aims to develop the approach, apply it to a wider array of data, and develop a

lexically-based account of conceptual projection (see Evans and Zinken 2005 for a programmatic overview of just such a research programme).

In this paper I have primarily focused on words restricted to the following lexical classes: noun, verb, adjective and preposition, all taken from a single language, English. The approach needs to be developed both by applying it to other examples from these lexical classes, to other lexical classes, and indeed to other languages. It is to be expected that the repertoire of lexical concepts will vary quite radically between languages, although there may be broad points of similarity (as identified by Croft (2001) in his account of conceptual space and semantic maps based on cross-linguistic typological research).

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). 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.

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