

## Figurative Language Understanding in LCCM Theory

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### *Abstract*

While cognitive linguists have been successful at providing accounts of the stable knowledge structures (conceptual metaphors) that give rise to figurative language, and the conceptual mechanisms that manipulate these knowledge structures (conceptual blending), relatively less effort has been thus far devoted to the nature of the linguistic mechanisms involved in figurative language understanding. This paper presents a theoretical account of figurative language understanding, examining metaphor and metonymy in particular. This account is situated within the Theory of Lexical Concepts and Cognitive Models (LCCM Theory). LCCM Theory (Evans 2006, To appear a) is a cognitively realistic model of lexical representation and semantic compositionality, providing, it is argued, an account of figurative language which complements the ‘backstage cognition’ perspectives of Conceptual Metaphor Theory and Conceptual Blending Theory.

### **1. Introduction**

One of the major successes of cognitive linguistics has been to model the complexity and richness of the human imagination. Until relatively recently in linguistics and in cognitive science more generally, it was assumed either that the human imagination was peripheral to cognition or that it could not be systematically studied—see representative papers in Ortony (1993) which assume exactly this, and references and discussion in Gibbs (1994). The cognitive linguistics enterprise has provided an approach to studying human imagination, and has been influential in arguing that language reveals systematic processes at work. Cognitive linguists have argued that such processes are central to the way we think (e.g., Evans 2004; Fauconnier 1997; Fauconnier and Turner 2002; Lakoff and Johnson 1999; Turner 1996).

One way in which the role of imagination in human thought has been approached, in cognitive linguistics, has been by positing relatively stable knowledge

structures which are held to inhere in long-term memory. These knowledge structures are termed *conceptual metaphors* (Lakoff and Johnson 1980, 1999) and are claimed to have psychological reality.<sup>1</sup> In addition, conceptual metaphors are held to be manipulated by dynamic meaning construction process known as *conceptual blending* (Fauconnier and Turner 1998; 2002; Grady 2005). The way in which these structures and processes have been studied has predominantly been to examine systematicities in figurative language, particularly within the framework of Conceptual Metaphor Theory (Lakoff and Johnson 1980, 1999). George Lakoff and Mark Johnson, the proponents of the study of conceptual metaphor, argue that figurative language is a consequence of the existence of a universal set of pre-linguistic *primary metaphors* (Lakoff and Johnson 1999; see also Grady 1997), and a language-specific set of conceptual metaphors, both of which map structure from more concrete domains of conceptual structure, referred to as *source domains*, onto less easily apprehended aspects of conceptual structure, referred to as *target domains*. Together these knowledge structures are held to give rise both to the productive use of figurative language, as well as to more creative aspects, such as poetic metaphor, for instance (see Lakoff and Turner 1989). More recently, it has been argued that conceptual metaphors have a neural instantiation (see discussion in Feldman 2006; Gallese and Lakoff 2005; Lakoff and Johnson 1999).

While the success of both Conceptual Metaphor Theory and Conceptual Blending Theory provides the backdrop for the discussion in this paper, the analyses presented here are orthogonal to, and, I argue, complement the approaches developed by these theories. For instance, Conceptual Metaphor Theory is not primarily (if at all) a theory *about* metaphor understanding in language. Rather, Conceptual

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<sup>1</sup> For discussion of the psychological reality of conceptual metaphors see, for example, Boroditsky (2000); Casasanto (To appear); Casasanto and Boroditsky (2008); Gentner et al. (2002); and Gibbs (1994).

Metaphor Theory has traditionally been concerned with the nature and the level of the various cognitive representations that serve to structure target domains in terms of sources domains. That is, Conceptual Metaphor Theory is a theory concerned with *backstage cognition*—the role of the non-linguistic conceptual processes that facilitate meaning construction behind the scenes—so to speak.<sup>2</sup> Analogously, Conceptual Blending Theory (Coulson 2000; Fauconnier and Turner 2002) is concerned with the conceptual processes involved in meaning construction, viewing language as impoverished prompts for semantic compositionality. For Fauconnier and Turner, what is really interesting about figurative language phenomena are the conceptual (rather than the linguistic) processes that lie hidden from view, behind the scenes, so to speak.

In addition to the backstage cognition perspectives offered by Conceptual Metaphor Theory and Conceptual Blending Theory, cognitive linguists are in need, I suggest, of a theoretical account that models how language deploys and interfaces with the non-linguistic knowledge structures—the conceptual metaphors—and the conceptual mechanisms of meaning construction—the process of conceptual integration or “blending”—during the process of figurative language understanding. That is, we require a theory that addresses *frontstage cognition*—an account that is concerned with the role of linguistic prompts and linguistic processes of semantic composition in figurative language understanding. Moreover, such an account must remain consonant with what is known about the structures and processes involved in figurative thought, in the light of the research programmes of Lakoff and Johnson, and Fauconnier and Turner, as well as others. That is, such an account of figurative language understanding must be psychologically plausible.

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<sup>2</sup> It was Fauconnier who coined the term ‘backstage cognition’—see Fauconnier (1994, 1997). For discussion of the distinction between frontstage and backstage cognition see Evans (to appear a).

In this paper I argue for a new (or at least a newly nuanced) perspective on the nature of lexical representation and semantic compositionality. I do so by introducing the *Theory of Lexical Concepts and Cognitive Models* (LCCM Theory for short) in order to provide the theoretical context for the account of figurative language understanding that I develop.

The paper is structured as follows. In the next section I introduce the figurative language phenomena that I will be presenting an account of. In section 3, I provide an overview of the theoretical perspective which provides the basis for the analysis: LCCM Theory. In section 4, I present an analysis of the distinction between literal and figurative forms in language understanding. Section 5 addresses the distinction between metaphor and metonymy from the perspective of LCCM Theory. In section 6, I consider expressions which have previously been treated as involving metaphor (and in some cases metonymy). From the language understanding perspective developed in this paper I argue that such cases do not constitute instance of figurative language use. The final section provides a summary and conclusion.

## **2. Phenomena to be accounted for**

In the present paper I am concerned with providing a theoretical account of two related issues. Firstly, I address how we understand figurative language. This entails considering how figurative language is distinct from non-figurative (or literal) language, in terms of language understanding. That is, I am not primarily concerned with the conceptual (i.e., non-linguistic) knowledge structures that underlie figurative versus literal language understanding. Rather, I am concerned with the interaction

between linguistic and non-linguistic structures during language understanding and the compositional processes involved in these two types of language understanding.

Secondly, I am concerned with accounting for the distinction between two of the best studied types of figurative phenomena in cognitive linguistics, metaphor and metonymy. Again, my focus is less on the distinction between metaphor and metonymy as conceptual phenomena<sup>3</sup>, but rather, with the way in which one might account for such figurative phenomena in terms of a theoretical account of language understanding. That is, I am concerned with developing a theoretical account of how language users marshal linguistic and non-linguistic structures and mechanisms in the course of interpreting specific figurative utterances.

In the remainder of this section I elaborate on the nature of literal versus figurative language, and metaphor versus metonymy, the sets of phenomena for which I develop an account.

### *2.1. Literal versus figurative language*

Gibbs (1994) warns against the possibility of making a principled distinction between literal versus figurative language, pointing to the range of often contradictory ways in which linguists, philosophers and cognitive scientists have defined these notions.

Nevertheless, for now I will assume that there are reasonable grounds for assuming that there is some basis for the intuition that there is a distinction between literal and figurative language. I do so while acknowledging that drawing a hard and fast line between the two may not be straightforward. To make this point clear, consider the expression *went up*, and examples of the following kind:

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<sup>3</sup> For a discussion of this distinction see, for example, Barcelona (2000); Croft (1993); Lakoff and Johnson (1980, 1999).

- (1) The rocket *went up* (in the sky)
- (2) The student's grades *went up* (during the course of the semester)

Without a specific utterance context, native speakers of English informally define *went up* as relating to veridical (i.e., actual) motion in an upwards direction along the vertical axis. That is, the expression *went up* is conventionally associated with what I will term a *lexical concept*—elaborated on below—which, given the semantic and encyclopaedic knowledge to which it affords access, might be glossed as [UPWARD VERTICAL MOTION BEFORE NOW].

In (1) the expression in italics, *went up*, relates to an entity which can undergo veridical motion. Hence, the lexical concept *sanctions* an interpretation in which *went up* relates to upward motion on the vertical axis. As the utterance in (1) features an entity, in subject position that can—or can be construed—as capable of undergoing upward vertical motion, the utterance is usually judged as being literal.

In the example in (2), the expression *went up* relates to the student's grades. As *the student's grades* refers to a non-physical entity which is not usually judged as being subject to veridical motion, the expression *went up* would appear not to apply in the same way as it does in (1). In (2) *went up* would typically be judged as referring to an improvement in the student's grades. Given that *went up* is not being used in its spatial sense in this example we might informally describe its usage as being non-literal or figurative in nature. One of the challenges that I take up in this paper is to account for the distinction between literal versus figurative language in terms of the nature of language understanding.

## 2.2. *Metaphor versus metonymy*

Secondly, we need to be able to account for the intuition that metaphor and metonymy, the two forms of figurative language which have received most attention in cognitive linguistics, and cognitive science more generally, are distinct phenomena, with, presumably, distinct sorts of linguistic and perhaps conceptual operations giving rise to them. The second objective of the present paper is to develop an account of the meaning construction processes responsible for the figurative language phenomena often described as constituting metaphor and metonymy. These are exemplified by expressions of the following kind:

### Metaphor

- (3) a. My boss is *a pussycat*  
 b. The student's grades *went up*

### Metonymy

- (4) a. *France* rejected the EU constitution  
 b. The *ham sandwich* has asked for the bill

In contemporary language science, metaphor is often understood as involving the interpretation (or conceptualisation) of one entity in terms of something else, as in *my boss* in terms of a *pussycat*, or an improvement in student's grades in terms of an object in motion. Metonymy on the other hand is often taken to relate to a referent other than the one literally designated. For instance, in (4a), *France* refers to the portion of the French electorate that voted against endorsing a European Union constitution in a 2005 referendum held by the French government. Similarly, given a

restaurant scenario, and two waiting staff talking about a particular customer, *ham sandwich* refers to the customer who ordered the ham sandwich rather than to the sandwich.

Traditionally, metaphor has been thought of as an implicit comparison.<sup>4</sup>

Examples such as those in (3a), which make use of the predicate nominative ('X is a Y') construction, are the kinds of examples that are usually employed to support this perspective. Lakoff and Johnson in their development of the theoretical construct of the conceptual metaphor have subsumed a wider range of examples as relating to metaphor, to include examples of the following sort:

- (5) Things are *going smoothly* in the operating theatre
- (6) He was *in* a state of shock after the election result
- (7) The economy is *going from bad to worse*

As Lakoff and Johnson (1980) first observed, examples such as these are representative of ordinary, everyday ways of talking about events such as medical operations, emotional or psychological states, and changes in the economy. However, each utterance makes use of language that, on the face of it, relates to motion, physical location, or change in location in order to describe non-physical entities. Hence, Lakoff and Johnson use the term metaphor more inclusively than has traditionally been the case. This follows as they argue that linguistic metaphors are surface manifestations of underlying conceptual associations, which presumably inhere in long term memory, relating often diverse bodies or domains of conceptual knowledge. That is, linguistic behaviour that is metaphoric is a consequence of sets

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<sup>4</sup> See Evans and Green (2006) for a review.

of stable cross-domain conceptual mappings—conceptual metaphors—which licence the patterns evident in language use. From this perspective, then, the sorts of linguistic data which Lakoff and Johnson provide in order to evidence the existence of conceptual metaphors, such as the examples in (5) to (7) inclusive, are not claimed to be motivated by comparison.

In contrast to metaphor, metonymy has typically been identified as having a distinct discourse function, which, for a number of scholars reflects a conceptual distinction *vis-à-vis* metaphor.<sup>5</sup> Metonymy is often held to be referential in nature, highlighting a particular referent by virtue of activating a contextually salient entity closely associated with the referent in question (this is sometimes expressed in terms of conceptual contiguity). For instance, in (4b) above, given a restaurant scenario, the food item ordered by a given customer is likely, among waiting staff, to be particularly salient, and thus an effective means of identifying a specific referent, in this instance, a particular customer. As this example demonstrates, linguistic metonymy is referential in nature: it relates to the use of expressions to ‘pinpoint’ entities in order to talk about them. This shows that metonymy functions differently from metaphor. Hence, while we might informally gloss metonymy as the relation in which ‘Y stands for X’, by the same token, metaphor is the relation ‘X understood in terms of Y’.

### **3. LCCM Theory: An Overview**

The account of figurative language understanding presented in this paper draws upon the Theory of Lexical Concepts and Cognitive Models, or LCCM Theory for short (see Evans 2006, 2009, To appear a, To appear b). LCCM Theory constitutes a model

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<sup>5</sup> See the collection of papers in Barcelona (2000) for instance, and Kövecses and Radden (1998).

of lexical representation and semantic composition in language understanding. It represents an attempt to model the nature of the symbolic units in language—and in particular semantic structure—the nature of conceptual representations, and the compositional mechanisms that give rise to the interaction between the two sets of representations—the semantic and the conceptual—in service of linguistically-mediated meaning construction. LCCM Theory derives its name from two theoretical constructs which are central to the model developed: the *lexical concept* and *cognitive model*. In this section I present an overview of LCCM Theory.

### 3.1. *Semantic Representation in LCCM Theory*

The overarching assumption of the theory is that the linguistic system emerged, in evolutionary terms, much later than the earlier conceptual system. The utility of a linguistic system, on this account, is that it provides an executive control mechanism facilitating the deployment of conceptual representations in service of linguistically-mediated meaning construction. Hence, ‘semantic’ representations in the two systems are of a qualitatively distinct kind. I model *semantic structure*—the primary semantic substrate of the linguistic system—in terms of the theoretical construct of the lexical concept. A lexical concept is a component of linguistic knowledge—the semantic pole of a *symbolic unit* (in Langacker’s e.g. 1987 terms)—which encodes a bundle of various types of highly schematic *linguistic content* (see Evans 2006, To appear a). In particular, linguistic content includes information relating to the selectional tendencies associated with a given lexical concept—the range of collocational and collostructional behaviour of a given lexical concept (see Evans 2006).

While lexical concepts encode highly schematic linguistic content, a subset—those associated with open-class forms—are connected, and hence facilitate access, to

the conceptual system. Lexical concepts of this type are termed *open-class lexical concepts*.<sup>6</sup> Such lexical concepts are typically associated with multiple areas in the conceptual system, referred to as *association areas*. The range of association areas to which a given lexical concept facilitates access is termed an *access site*. LCCM Theory assumes that the access site for a given *open-class lexical concept* is unique. As lexical concepts facilitate access to a potentially large number of association areas in the conceptual system, any given open-class lexical concept, in principle, facilitates access to a large *semantic potential*. However, only a small subset of this semantic potential is typically activated in *interpretation* of a given utterance. I identify distinct lexical concepts by providing a gloss in square brackets that relates to salient aspects of a lexical concept's linguistic content, and its *conceptual content*: the conceptual representations that make up its semantic potential.

While the linguistic system evolved in order to harness the representational power of the conceptual system for purposes of communication, the human conceptual system, at least in outline, is not far removed from that of other primates (Barsalou 2005), and shows some similarities with that of other species (Hurford 2007). In contrast to the linguistic system, the conceptual system evolved primarily to facilitate functions such as perception, categorisation, inference, choice and action, rather than communication. In LCCM Theory, *conceptual structure*—the semantic representational substrate of the conceptual system—is modelled by the theoretical construct of the cognitive model. A cognitive model is a coherent body of multimodal knowledge grounded in the brain's modal systems, and derives from the full range of experience types processed by the brain including sensory-motor experience, proprioception and subjective experience including affect.

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<sup>6</sup> See Evans (To appear a) for the rationale for this position.

The conceptual content encoded as cognitive models can become re-activated during a process referred to a *simulation*. Simulation is a general purpose computation performed by the brain in order to implement the range of activities that subserve a fully functional conceptual system. Such activities include conceptualisation, inferencing, choice, categorisation and the formation of ad hoc categories.<sup>7</sup>

In line with recent evidence in the cognitive science literature, LCCM Theory assumes that language can facilitate access to conceptual representations in order to prompt for simulations (see Glenberg and Kaschak 2002; Kaschak and Glenberg 2000; Pulvermüller 2003; and Zwaan 2004. For reviews see Vigliocco *et al.*, 2009; Taylor and Zwaan 2009). As noted above, in LCCM Theory this is effected by a subset of lexical concepts—open-class lexical concepts—facilitating access to the conceptual system via a number of association areas. Each association area corresponds to a cognitive model, as captured in figure 1. A summary of some of the key terms deployed in LCCM Theory is presented in table 1.

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<sup>7</sup> For discussion and findings relating to the multimodal nature of conceptual representations and the role of simulation in drawing on such representations in facilitating conceptual function see, for instance, Barsalou (1999, 2008), Glenberg (1997), Gallese and Lakoff (2005), and references therein.

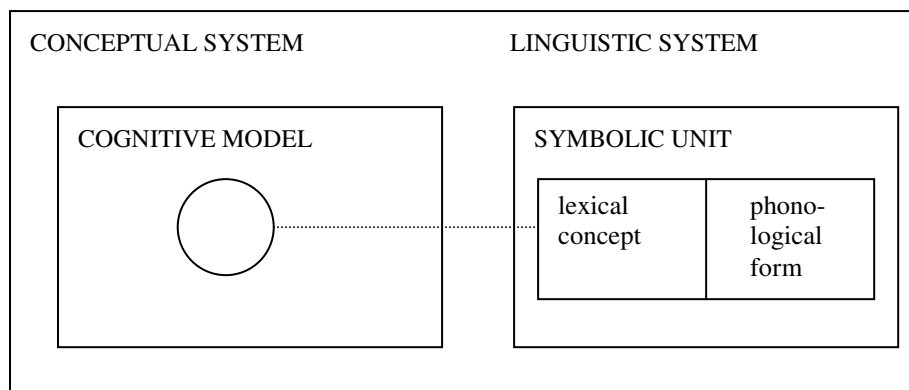


Figure 1. An association between an open-class lexical concept and a cognitive model.

<b>Term</b>	<b>Description</b>
Linguistic system	The collection of symbolic units comprising a language, and the various relationships holding between them
Symbolic unit	A conventional pairing of a phonological form and a semantic element
Lexical concept	The semantic element that is paired with a phonological form in a symbolic unit
Linguistic content	The type of content encoded by a lexical concept. This content is of a highly schematic type that can be directly encoded <i>in</i> language
Conceptual system	The body of non-linguistic knowledge captured from perceptual experience that is made of perceptual states. This knowledge derives from sensory-motor experience, proprioception and subjective experience
Cognitive model	The representational form that knowledge in the conceptual system takes, as modelled in LCCM Theory. Consists of multimodal information captured from brain states, which give rise to a potentially unlimited set of simulations
Conceptual content	The nature of the knowledge encoded by a cognitive model
Semantic structure	That part of semantic representation encoded by the linguistic system. Semantic structure is modelled, in LCCM Theory, by lexical concepts,
Conceptual structure	That part of the semantic representation encoded by the conceptual system. Conceptual structure is modelled, in LCCM Theory, by cognitive models

Table 1. Key terms deployed in LCCM Theory

I now briefly illustrate the distinction between the content encoded in the linguistic system by lexical concepts, and the content encoded in the conceptual

system by cognitive models. To do so, consider the use of the lexical item *red* in the following examples, adapted from Zwaan (2004):

- (8) a. The teacher scrawled in red ink all over the assignment  
 b. The red squirrel is in danger of becoming extinct in the British isles

In the examples in (8), *red* designates two different sorts of sensory experience. That is, while the hue derived from the use of *red* in (8a) is quite a vivid red, the hue prompted for by (8b) is likely to be closer to a dun/browny colour. That is, what I refer to as the semantic potential of *red* is not ‘there’ in the word itself. Whatever *red* designates, we are not dealing with purely linguistic knowledge. Rather, the word *red* provides access to (in this case), perceptual information and knowledge, which can be simulated, which is to re-activated. Put another way, the hue derived is not a function of linguistic knowledge, but relates to what I am referring to as conceptual content. This is not to say that *red* does not provide linguistic knowledge. The form *red* has an associated lexical concept that I gloss as [RED]. This encodes schematic linguistic content, designating that an entity is being referred to, that the entity being referred to is a relation of some kind, and that the relation is specifically an attribute of a thing. In short, while linguistic content includes highly schematic semantic knowledge, conceptual concept concerns richly detailed knowledge grounded in the information captured from multimodal brain states.

### 3.2. *The Cognitive Model Profile*

An important construct in LCCM Theory, and one that is essential to providing an account of figurative language understanding, as we shall see below, is that of the

*cognitive model profile*. As an open-class lexical concept facilitates access to numerous association areas within the conceptual system, it facilitates access to numerous cognitive models. Moreover, the cognitive models to which a lexical concept facilitates access are themselves connected to other cognitive models. The range of cognitive models to which a given lexical concept facilitates direct access, and the range of additional cognitive models to which it therefore facilitates indirect access is termed its *cognitive model profile*. To illustrate, consider the cognitive model profile for the lexical concept which I gloss as [FRANCE] associated with the form *France*. A partial cognitive model profile for [FRANCE] is represented in figure 2.

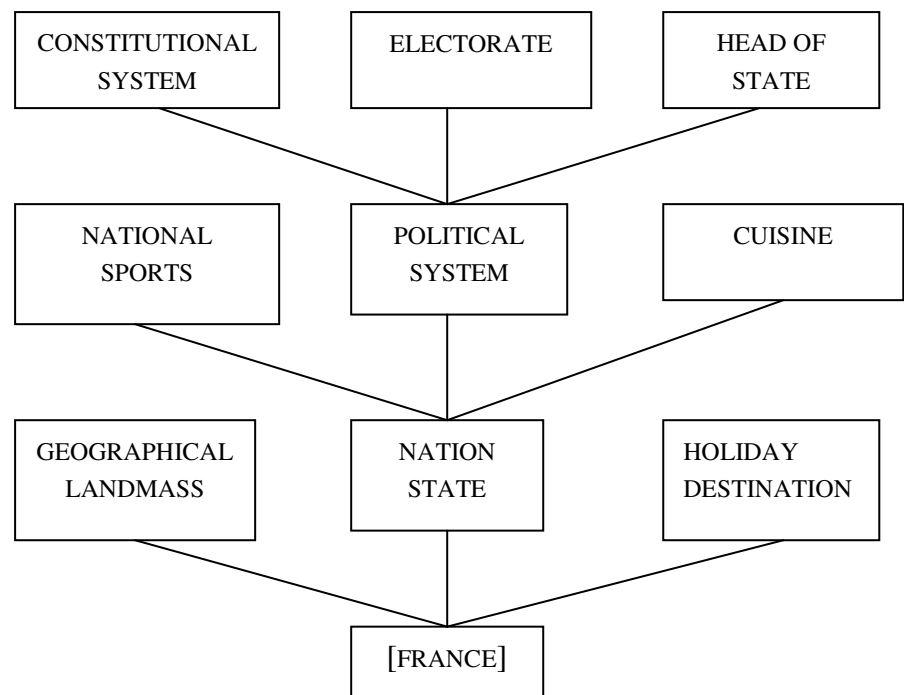


Figure 2. Partial cognitive model profile for [FRANCE]

Figure 2 represents an attempt to capture the sort of knowledge that language users must have access to when speaking and thinking about France. As illustrated by figure 2, the lexical concept [FRANCE] provides access to a potentially large number of cognitive models. As each cognitive model consists of a complex and structured body

of knowledge which provides access to other sorts of knowledge, LCCM Theory distinguishes between cognitive models which are directly accessed via the lexical concept—*primary cognitive models*—and those cognitive models which form sub-structures of those which are directly accessed—*secondary cognitive models*. These secondary cognitive models are indirectly accessed via the lexical concept.

The lexical concept [FRANCE] affords access to a number of primary cognitive models, which make up the *primary cognitive model profile* for [FRANCE]. These include: GEOGRAPHICAL LANDMASS, NATION STATE and HOLIDAY DESTINATION. Each of these cognitive models provides access to further cognitive models. In figure 2 a flavour of this is given by virtue of the various secondary cognitive models which are accessed via the NATION STATE cognitive model: the *secondary cognitive model profile*. These include NATIONAL SPORTS, POLITICAL SYSTEM and CUISINE. For instance, we may know that in France, the French engage in national sports of particular types, for instance, football, rugby, athletics, and so on, rather than others: the French don't typically engage in American football, ice hockey, cricket, and so on. We may also know that as a sporting nation they take part in international sports competitions of various kinds, including the FIFA football world cup, the Six Nations rugby competition, the rugby world cup, the Olympics, and so on. That is, we may have access to a large body of knowledge concerning the sorts of sports French people engage in. We may also have some knowledge of the funding structures and social and economic conditions and constraints that apply to these sports in France, France's international standing with respect to these particular sports, and further knowledge about the sports themselves including the rules that govern their practice, and so on. This knowledge is derived from a large number of sources including direct experience and through cultural transmission.

With respect to the secondary cognitive model of POLITICAL SYSTEM, figure 2 illustrates a sample of further secondary cognitive models which are accessed via this cognitive model. In other words, each secondary cognitive model has further (secondary) cognitive models to which it provides access. For instance, (FRENCH) ELECTORATE is a cognitive model accessed via the cognitive model (FRENCH) POLITICAL SYSTEM. In turn the cognitive model (FRENCH) POLITICAL SYSTEM is accessed via the cognitive model NATION STATE. Accordingly, NATION STATE is a primary cognitive model while ELECTORATE and POLITICAL SYSTEM are secondary cognitive models.

### 3.3. *Semantic Composition in LCCM Theory*

LCCM Theory is motivated, in large part, by the observation that word meanings vary across contexts of use in terms of the conceptualisation that they, in part, give rise to. To illustrate, consider the following examples which relate to the lexical form *France*:

- (9)
- a. France is a country of outstanding natural beauty
  - b. France is one of the leading nations in the European Union
  - c. France beat New Zealand in the 2007 Rugby world cup
  - d. France voted against the EU constitution in the 2005 referendum

In the first example, *France* relates to a specific geographical landmass coincident with the borders of mainland France. In the second example, *France* relates to the political nation state, encompassing its political infrastructure, political and economic influence and its citizens, including those in French overseas territories. In the example in (1c) *France* relates to the team of 15 rugby players, drawn from the

pool of rugby players of French citizenship, who represented the French nation in the 2007 rugby world cup. In the final example, *France* relates to the French electorate, and specifically that part of the electorate which voted against proceeding with ratification of a proposed EU constitution in a national referendum in 2005. These examples illustrate that a word form such as *France* appears to be protean in nature: its meaning is flexible, in part dependent upon the context of its use.

LCCM Theory accounts for variation in word meaning by proposing two compositional mechanisms which integrate information deriving from context with linguistic content and conceptual content. These mechanisms facilitate the integration of words and other grammatical constructions such that an utterance-level simulation is derived. This utterance-level simulation (informally, what we might think of as utterance meaning), is termed a *conception* in LCCM Theory.

The two compositional mechanisms are *lexical concept selection* and *fusion*. The first, lexical concept selection, serves to identify the most appropriate lexical concept associated with a given form, during the processing of an utterance. As the linguistic system consists of symbolic units—conventional pairings between phonological forms and lexical concepts—a form can be potentially associated with a large number of distinct lexical concepts. To illustrate, consider the lexical form *in*, which occurs in the following examples:

- (10) a. The kitten is in the box  
 b. The flag is flapping in the wind  
 c. John is in love

In each of these examples, a distinct lexical concept is selected for. The lexical concepts for *in* selected are [ENCLOSURE] for (10a), [PREVAILING CONDITIONS] for (10b) and [PSYCHO-SOMATIC STATE] for (10c).<sup>8</sup>

Selection relies on a number of constraining factors to determine the appropriate lexical concept: the lexical concept which best fits the conception under construction.<sup>9</sup> Once a lexical concept has been selected, it must be integrated with other selected lexical concepts of the utterance, and, if it is an open-class lexical concept, interpreted in the light of conceptual structure to which it affords access, and the other open-class lexical concept(s) with which it has been integrated. That is, the selected lexical concept undergoes the second compositional process: namely fusion.

Fusion is the integrative process at the heart of semantic composition in LCCM Theory, and the second of the two constituent processes of meaning construction. It results in the construction of a conception. This is achieved by recourse to two sorts of knowledge: linguistic content and conceptual content. Fusion is itself made up of two constituent processes: *lexical concept integration* and *interpretation*. The first relates to the integration of linguistic content, in order to produce, informally, the ‘scaffolding’ for the *activation* of conceptual content. Both sorts of information, and both types of processes, are necessary for the construction of meaning, and thus the formation of a conception.

Lexical concept integration involves the integration of lexical concepts in order to produce a composite unit: a *lexical conceptual unit*. The output of this process is a *semantic value*, a situated semantic attribution associated with a lexical conceptual unit based on integration of linguistic content. Hence, the semantic contribution of the lexical conceptual unit is highly schematic in nature.

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<sup>8</sup> For discussion of the LCCM approach to polysemy see Evans (To appear b).

<sup>9</sup> For further discussion of this issue see Evans (To appear a).

The lexical conceptual unit then undergoes interpretation. That is, open-class lexical concepts within the lexical conceptual unit *activate* part(s) of the conceptual content (the semantic potential) to which they facilitate access. That part of the semantic potential that becomes activated is constrained by the nature of the semantic value for the lexical conceptual unit of which the open-class lexical concept(s) are part, that emerges from integration. That is, interpretation—the activation of conceptual content—is constrained by integration—the *unpacking* of linguistic content. A diagrammatic representation of the processes of semantic composition in LCCM Theory is provided in figure 3.

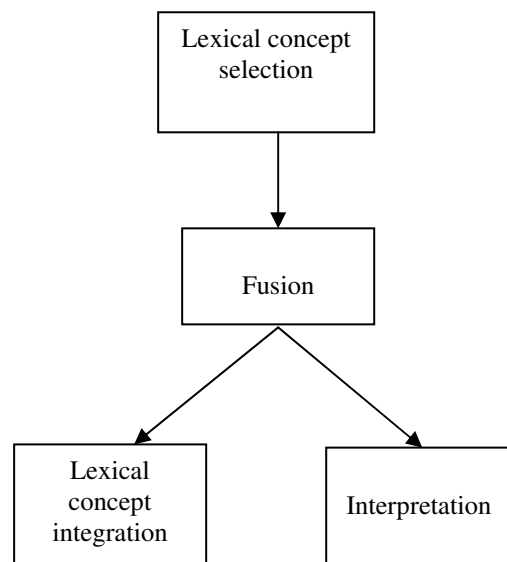


Figure 3. Processes of semantic composition in LCCM Theory

As it is interpretation, the activation of conceptual content guided by unpacked linguistic content, that is the most relevant of the compositional mechanisms for the discussion of figurative language, I focus in the remainder of this section on a more detailed discussion of interpretation.

### 3.4. Interpretation

In a lexical conceptual unit it is only open-class lexical concepts that undergo interpretation. The outcome of interpretation results in the open-class lexical concepts achieving an *informational characterisation*, which is to say a semantic interpretation facilitated by simulation. This takes place by virtue of the relevant part of the semantic potential to which the lexical concepts facilitate access becoming activated.

In the canonical case, when there are two (or more) open-class lexical concepts in the same lexical conceptual unit, these lexical concepts undergo interpretation simultaneously. In such cases, interpretation of the lexical concepts is constrained by a process termed *matching*. The purpose of matching is to ensure that a coherent informational characterisation emerges: one in which coherent parts of the cognitive model profile to which the distinct lexical concepts facilitate access are activated. Hence, interpretation is a constrained process.

To provide an immediate illustration of how interpretation proceeds, consider the expressions in (11) and (12) in the light of the partial primary cognitive model profiles for [FRANCE] in figure 4 (based on figure 2), for [REGION] in figure 5 and for [NATION] in figure 6.

(11) France, the landmass

(12) France, the nation

In each of these examples *France* receives a distinct informational characterisation.

In (11) France relates to a geographical area, while in (12) it relates to a political

entity. My purpose here is to illustrate how it is that each of these instances of *France* receives a distinct interpretation.

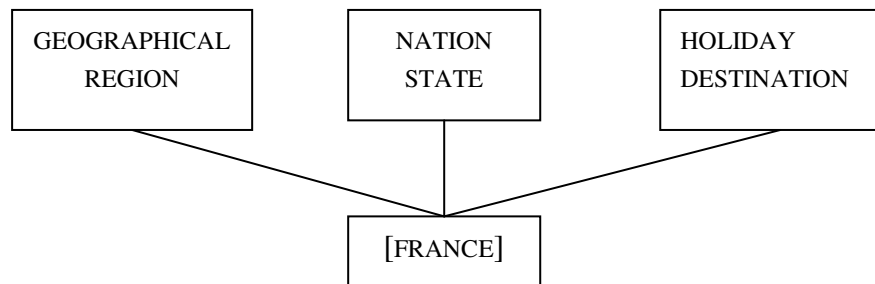


Figure 4. Partial primary cognitive model profile for [FRANCE]

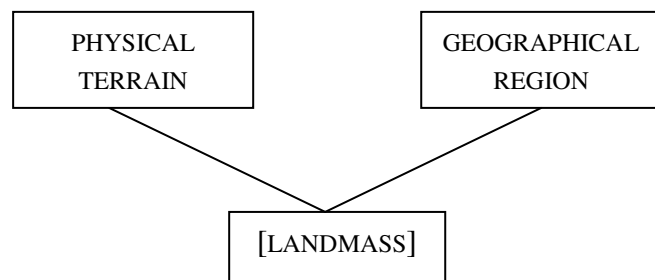


Figure 5. Partial primary cognitive model profile for [LANDMASS]

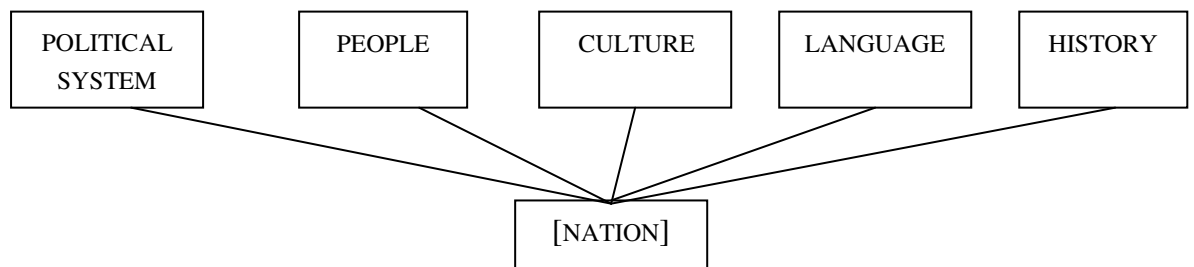


Figure 6. Partial primary cognitive model profile for [NATION]

As we have seen earlier, the lexical concept [FRANCE] affords access to conceptual content relating, at the very least, to France as a geographical region, as a political entity—including knowledge relating to the French political system, the French people and their social customs practices, their history and language and, the

national sports engaged in, and so forth—and to France as a holiday destination, with, perhaps, knowledge relating to the sorts of holiday activities it is possible (or typical) to engage in, in France, such as skiing (in the Alps), seaside holidays (on the Mediterranean coast), and so on.

The lexical concept [LANDMASS]—see figure 5—facilitates access, at the very least, to primary cognitive models that relate to a physical terrain—a landmass can be hilly, mountainous, may consist of plains, woodland, and so on—or to a geographical area.

Figure 6 relates to a very partial primary cognitive model profile for [NATION]. This lexical concept, at the very least, facilitates access to cognitive models having to do with a political entity, a nation-state, and hence a particular political system, a people (with common customs, traditions, cuisine, and so on), and language (and/or languages), and a common (often complex) history. Interpretation works by virtue of the process of matching, which takes place between the cognitive model profiles accessed by the open-class lexical concepts which are subject to matching.

In terms of the examples in (11) and (12), the relevant lexical concepts are [FRANCE], [LANDMASS] and [NATION]. Interpretation involves establishing a *match* between one (or more) cognitive models in the cognitive model profiles associated with the relevant lexical concepts. This process serves to *activate* the matched cognitive models. For instance, in the example in (11), a match is established between the primary cognitive model profile associated with [LANDMASS], and one of the cognitive models to which [FRANCE] affords access. This of course is the cognitive model GEOGRAPHICAL REGION, accessed via the lexical concept [FRANCE], which becomes activated. In the second example, the match takes place between the primary cognitive model profile to which [NATION] affords access and the NATION

STATE cognitive model to which [FRANCE] affords access. Hence, the reason for different readings of [FRANCE] in (11) and (12) is because the lexical concept in each utterance receives a distinct informational characterisation. In (11) interpretation results in an informational characterisation for [FRANCE] relating to France as geographical landmass. In (12) interpretation results in an informational characterisation of a political entity: France the nation-state.

The compositional mechanisms in LCCM Theory, including matching are subject to constraints. These constraints are formalised by a number of principles that govern the operation of semantic composition.<sup>10</sup> The matching operation central to interpretation is constrained by the *Principle of Conceptual Coherence*. This can be stated as follows:

(13) Principle of Conceptual Coherence

Matching occurs between one or more cognitive models belonging to distinct cognitive model profiles, which share schematic coherence in terms of conceptual content.

This principle relies on a second principle, the Principle of Schematic Coherence:

(14) Principle of Schematic Coherence

The conceptual content associated with entities, participants and the relations holding between them must exhibit coherence in fusion operations.

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<sup>10</sup> See Evans (To appear a) for detailed discussion.

What the two principles do, in (13) and (14), is to guarantee that matching takes place only when the cognitive models that undergo the matching process i) belong to different cognitive model profiles—and hence are accessed by different lexical concepts—and ii) exhibit coherence.

To illustrate consider the example in (15) which again employs the lexical concept [FRANCE]:

(15) France is beautiful.

The example in (15) provides what I will term a ‘geographical region’ conception. A common conception arising from (15), without a further specifying linguistic or extra-linguistic context, might relate to an understanding of France as a geographical region which is physically beautiful, for instance in terms of its landscape, and so forth. This takes place by virtue of the lexical concepts [FRANCE] and [BEAUTIFUL] undergoing matching, giving rise to an informational characterisation.

The Principles of Conceptual and Schematic Coherence in (13) and (14) determine how the matching process is constrained and hence how, in general terms, the cognitive models across cognitive model profiles to be matched are selected. To make this clear consider the partial cognitive model profile for the lexical concept [BEAUTIFUL], given in figure 7. The lexical concept [BEAUTIFUL] facilitates access, at the very least, to cognitive models that have to do with multimodal knowledge relating to visual pleasure, non-visual pleasure (such as touch and sexual arousal, for instance), and aesthetic pleasure, relating, for instance, to our experience of pleasure arising from an appreciation of literature, music, language, and so on.

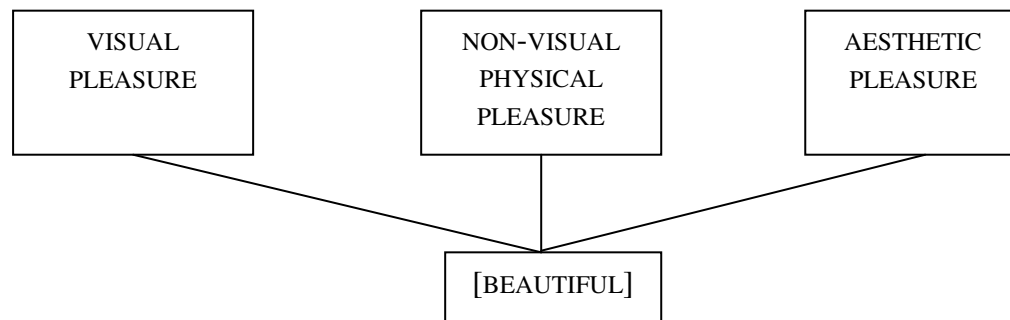


Figure 7. Partial primary cognitive model profile for [BEAUTIFUL]

Matching takes place by conducting what is referred to as a *search* in the primary cognitive model profiles of the two lexical concepts subject to matching, as guided by the principles in (13) and (14). That is, the primary cognitive models accessed by [FRANCE] (figure 3) and [BEAUTIFUL] (figure 7) are searched in order to identify a match at the level of schematic coherence across conceptual content. Put another way, the match relates not to details of similarity, but rather, how schematically coherent the conceptual content is. In terms of the three primary cognitive models given for [FRANCE] in figure 4, only that of GEOGRAPHICAL REGION achieves a match in terms of schematic coherence with one (or more) of the primary cognitive models for [BEAUTIFUL]. After all, the HOLIDAY DESTINATION cognitive model has to do with the nature and types of holiday opportunities that exist in France, while the NATION STATE cognitive model concerns the nature of France as a political entity. In contrast, the GEOGRAPHICAL REGION cognitive model might include knowledge relating to the physical beauty, particularly the visual pleasure, that derives from aspects of France as a geographical region. Hence, a match takes place between at least one of the primary cognitive models accessed via [BEAUTIFUL] and the GEOGRAPHICAL region cognitive model accessed via the [FRANCE] lexical concept. For this reason, a match is established between the primary cognitive model

profile of [BEAUTIFUL] and the GEOGRAPHICAL REGION cognitive model of [FRANCE]. This results in an informational characterisation ‘geographical region’ for [FRANCE].

#### **4. Figurative Language in LCCM Theory**

In this section I am concerned with the distinction between literal versus figurative language understanding from the perspective of LCCM Theory. LCCM Theory assumes that literal and figurative language arise from the same compositional mechanisms. In other words, they can be seen as points lying along a continuum of meaning construction, rather than being due to wholly different mechanisms.

Analogously, metaphor and metonymy, as two particular exemplars of figurative language use can be seen, from this perspective, as arising from similar meaning construction processes, differing in terms of the way meaning construction occurs.

The key assumptions associated with the LCCM approach to figurative language can be summarised as follows:

- i) the meanings associated with figurative utterances are guided by context—both linguistic and extra-linguistic—in the same way as literal utterances
- ii) there is continuity between figurative and literal language
- iii) there is continuity between metaphor and metonymy
- iv) figurative language understanding is a consequence of the nature of semantic representation and semantic composition, which is to say, essentially the same structures and processes as for literal language

##### *4.1. Literal versus figurative language understanding*

The distinction between what I will refer to as a *literal conception*—the meaning associated with a literal utterance—on the one hand, and a *figurative conception*—the

meaning associated with a figurative utterance—on the other, relates to that part of the semantic potential which is activated during the process of interpretation while constructing a conception. While a literal conception canonically results in an interpretation which activates a cognitive model, or cognitive models, within the primary, which is to say default, cognitive model profile, a figurative conception arises when a *clash* arises in the primary cognitive model profiles subject to matching. This is resolved by one of the cognitive model profiles achieving a match in its secondary cognitive model profile. A figurative conception arises, therefore, when a match is achieved in the secondary cognitive model profile of one of the lexical concepts undergoing matching.

To illustrate, consider the following examples, again relating to the lexical concept [FRANCE]:

Literal conception

(16) France has a beautiful landscape

Figurative conception

(17) France rejected the EU constitution

A literal conception arises from the utterance in (16) while a figurative conception arises for the utterance in (17).

A literal conception arises for the first example by virtue of a match occurring between the informational characterisation of [BEAUTIFUL LANDSCAPE] and the primary cognitive model profile to which [FRANCE] affords access, these being the only elements in this utterance which are associated with conceptual content. A search takes place in the primary cognitive model profile associated with [FRANCE],

The Principles of Conceptual Coherence and Schematic Coherence ensure a match for (16) in the primary cognitive model profile of [FRANCE].

In terms of activation of cognitive models for [FRANCE] in (16), the Principle of Conceptual Coherence ensures that the GEOGRAPHICAL LANDMASS cognitive model for [FRANCE] is activated (recall the cognitive model profile for [FRANCE] presented in figure 2). That is, it is this cognitive model which matches the informational characterisation associated with [BEAUTIFUL LANDSCAPE]. Hence, the conception which arises for (16) is a literal, as activation occurs solely in the primary cognitive model profile.

In contrast to (16), the example in (17) is usually judged as being figurative in nature. While *France* in (16) refers to a specific geographical region—that identified by the term *France*, in (17) *France* refers to that portion of the French electorate who voted against implementing an EU constitution in a 2005 referendum.

This figurative conception arises due to a clash arising between the primary cognitive model profile of [FRANCE], as represented by figure 4, and the informational characterisation associated with ‘EU constitution’. That is, a none of the primary cognitive models to which [FRANCE] facilitates access can be matched with the information characterisation associated with ‘EU constitution’, due to application of the Principles of Conceptual and Schematic Coherence given in (13) and (14).

The failure of matching in the primary cognitive model profile for [FRANCE] requires establishing a wider *search domain*, namely matching in the secondary cognitive model and hence cognitive models to which the lexical concept [FRANCE] provides only indirect access. This process of *clash resolution* is constrained by the Principle of Ordered Search which is given in (18):

(18) Principle of Ordered Search

If matching is unsuccessful in the default search domain, which is to say, a clash occurs, then a new search domain is established in the secondary cognitive model profile. The search proceeds in an ordered fashion, proceeding on the basis of secondary cognitive models that are conceptually more coherent with respect to the primary cognitive models (and hence modelled as being 'closer' in the cognitive model profile) prior to searching cognitive models that exhibit successively less conceptual coherence.

In essence, the Principle of Ordered Search ensures the following. When there is a clash in the primary cognitive model profiles of the lexical concepts or informational characterisation(s) in question, as in (17), a larger search region is established which includes cognitive models in relevant secondary cognitive model profile(s). This principle thus serves to facilitate clash resolution by virtue of facilitating a search region beyond the default search region.

With respect to the example in (17), due to application of the Principle of Ordered Search, a secondary cognitive model is identified which achieves schematic coherence thereby avoiding a clash, and thus achieving a match. The cognitive model which achieves this, and thereby achieves activation, is the ELECTORATE cognitive model (see figure 2). Hence, in (17), the process of interpretation results in an informational characterisation for [FRANCE] which is that of 'electorate'. As the ELECTORATE cognitive model is a secondary cognitive model (recall the discussion relating to figure 2 above), this means that the conception is figurative in nature.

In order to summarise the main distinction between the construction of literal versus figurative conceptions, based on the mechanisms proposed by LCCM Theory, consider figure 7.

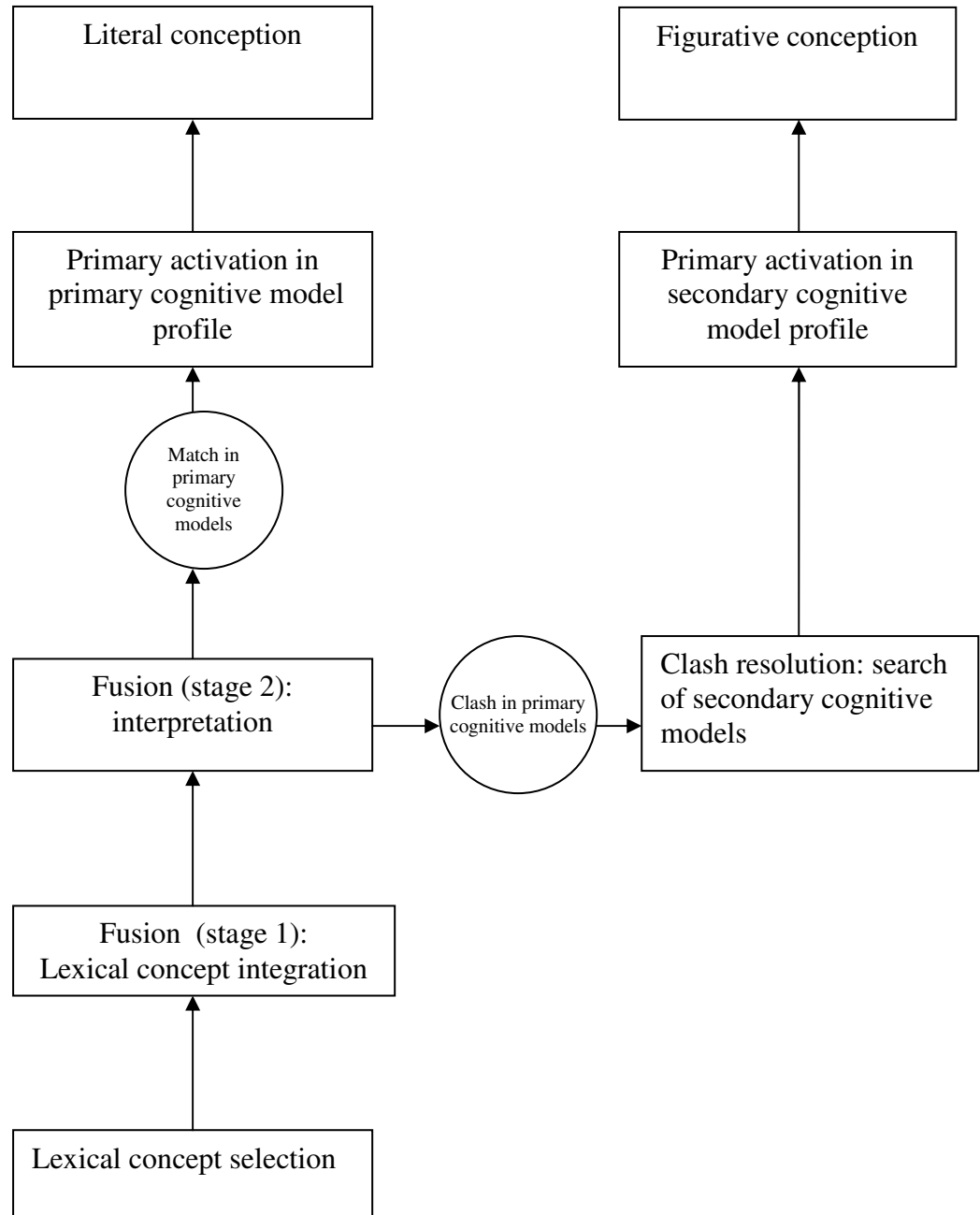


Figure 7. Meaning construction processes in LCCM Theory leading to literal versus figurative conceptions

Figure 7 illustrates the following. At interpretation, the primary cognitive model profiles for lexical concepts which afford access to conceptual content undergo matching. The Principle of Conceptual Coherence requires that a clash in the cognitive model profiles of the two (or more) lexical concepts undergoing interpretation is avoided. The Principle of Ordered Search ensures that if there is no match in the primary cognitive models of the lexical concepts subject to matching then a clash resolution is required. In order to achieve this, a search is initiated in the secondary cognitive model profile. The secondary cognitive model profile of a lexical concept relates to knowledge that is not directly associated with a given lexical concept, as it does not form part of a lexical concept's access site. As such, the secondary cognitive model profile constitutes a very large semantic potential available for search. The Principle of Ordered Search serves to ensure that the search in the secondary cognitive model profile proceeds in a coherent way. That is, the secondary cognitive models are searched to facilitate a match based on their conceptual coherence with the primary cognitive models which form part of the lexical concept's access site. Put another way, this principle also ensures that secondary cognitive models are searched in the order of their relative 'distance' from the point of lexical access. Hence, secondary activation continues 'upwards' through the secondary cognitive model profile until a match is achieved, giving rise to primary activation of one or more secondary cognitive models. The consequence of this is that activation of a secondary cognitive model that is relatively further removed, in conceptual terms, from a secondary cognitive model that is relatively less removed from the default search region, is likely to be judged as being more figurative in nature.

In sum, the defining feature of a literal conception is that matching occurs in the primary cognitive model profiles of the relevant lexical concepts. The defining

feature of a figurative conception is a clash in the primary cognitive model profiles of the relevant lexical concepts necessitating clash avoidance, and hence primary activation in the secondary cognitive model profile of one (or more) of the relevant lexical concepts. Moreover, the further the conceptual distance required in the secondary cognitive model to achieve clash resolution by virtue of a successful match, the greater the *access route length* in the cognitive model profile, and hence the greater the figurativity of the expression.

## 5. Metaphor and Metonymy

In the light of the foregoing discussion, in this section I consider the nature of two specific types of figurative conceptions: those associated with metaphor and metonymy in language understanding.

### 5.1. Metaphor

Having just illustrated the distinction between literal and figurative conceptions, I now provide a sketch of the meaning construction processes that give rise to metaphoric conceptions. I first of all consider metaphoric conceptions employing the predicate nominative (i.e., ‘X is a Y’) construction. This has traditionally been the kind of linguistic form *par excellence* that has been studied under the heading of metaphor. Examples of this kind are illustrated in (3a) reproduced below. I will also examine how LCCM Theory accounts for the sort of metaphoric conceptions that Conceptual Metaphor Theory has been concerned with, as exemplified in the example in (3b) also reproduced below:

- (3) a. My boss is a pussycat

b. The student's grades went up

MY BOSS IS A PUSSYCAT

What is strikingly figurative about the example in (3a) is that the entity designated by *my boss* is not normally taken as being a member of the class of pussycats. However, the predicate nominative construction is normally taken as having a class-inclusion function associated with it:

(19) My boss is a pianist

This expression exemplified by the utterance in (19) involves the copular or 'linking' verb *be* which combines with a nominal, e.g., 'a pianist'. The nominal functions as the essential part of the clausal predicate: 'is a pianist'. The function of the lexical concept conventionally paired with 'be' in this symbolic unit is to signal a stative relation (Langacker 1991a): namely, 'my boss is a member of the class of pianists', a situation which persists through time.

The same cannot hold for the example in (3a) as, in the normal course of events, someone's boss cannot literally be a pussycat. That is, the person designated by the expression *my boss* is not normally taken to be a member of the class of pussycats. The metaphoric conception which this utterance gives rise to is derived from a property which is usually associated with pussycats, namely that they are extremely docile and often affectionate, and thus not frightening or intimidating in any way. In this utterance, we are being asked to understand the boss not in terms of being a pussycat, but in terms of exhibiting some of the properties and behaviours often associated with pussycats as manifested towards their human owners, such as

being docile, extremely friendly and thus non-forbidding and perhaps easy to manipulate. Such a conception might be contrasted with the conception which might derive from an utterance such as (20):

(20) My boss is an ogre

The metaphoric conception derived from (20) involves understanding the boss in terms of extreme ferocity, a property associated with the mythical creature referred to as an ogre.

Yet how does the metaphoric conception associated with (3a) arise? The LCCM approach to figurative meaning construction allows us to see the similarities and differences between metaphor and the literal predicate nominative examples such as (19). An important point of similarity relates to the process of fusion crucial for meaning construction, involving interpretation in particular. As noted in the previous section, figurative language, of which metaphor is a sub-type, diverges from literal language use in terms of the sorts of *access routes* it provides, and specifically activation in the secondary cognitive model profile of the lexical concept which is undergoing clash resolution.

In an utterance such as 'My boss is a pianist', the two relevant lexical concepts for interpretation are [BOSS] and [PIANIST]. This follows as these are the only two lexical concepts in the utterance which have access sites and thus provide direct access to conceptual content. Interpretation proceeds by attempting to match cognitive models in the primary cognitive model profiles associated with each of these lexical concepts as guided by the Principle of Conceptual Coherence and application of the Principle of Ordered Search. A match is achieved in the primary

cognitive model profiles of each lexical concept. That is, it is semantically acceptable to state that *My boss is a pianist* because the referent of *my boss* is a human and humans can be pianists. The reason, then, why the conception associated with (19) intuitively feels literal is, on this account, that the access route is relatively short, limited to the primary cognitive model profiles to which both [BOSS] and [PIANIST] afford access.

Now let's consider how the metaphoric conception arises. In the example in (3a), the process of interpretation leads to a clash in the primary cognitive model profiles of [BOSS] and [PUSSYCAT]. This is where metaphor differs from literal class-inclusion statements. A partial primary cognitive model profile for [BOSS] is provided in figure 8.

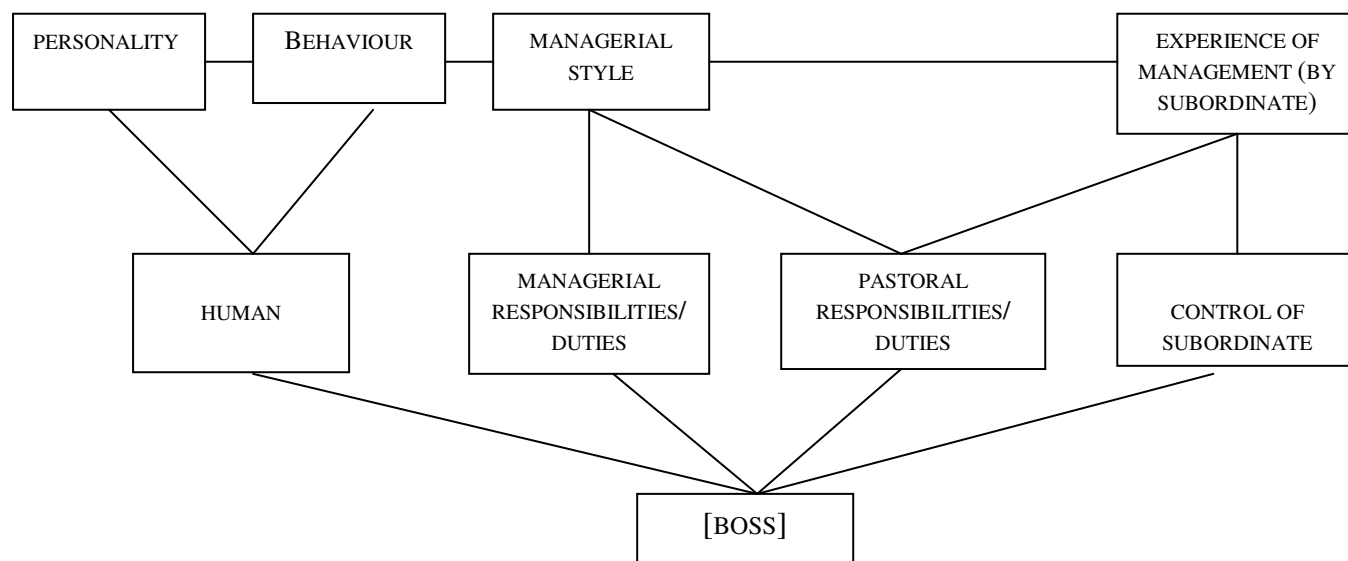


Figure 8. Partial cognitive model profile for [BOSS]

The primary cognitive model profile for [BOSS] includes, at the very least, cognitive models relating to the fact that a boss is, typically, a human being, and the complex body of knowledge we each possess concerning what is involved in being a

human being, that a boss has particular pastoral responsibilities with respect to those for whom he or she is line-manager, as well as managerial responsibilities and duties, both with respect to those the boss manages, the subordinate(s), and the particular company or organisation for whom the 'boss' works. In addition, there are an extremely large number of secondary cognitive models associated with each of these, only a few of which are represented in figure 8. In particular, by virtue of being a human being, a boss has a particular personality and exhibits behaviour of various sorts, in part a function of his/her personality, in various contexts and situations. In addition, each boss exhibits a particular managerial style, which includes interpersonal strategies and behaviours with respect to those the boss manages. The boss can, for instance, be aggressive or docile with respect to the subordinate. Moreover, there is a clichéd cultural model of a ferocious and aggressive boss, who seeks to keep employees 'on their toes' by virtue of aggressive and bullying interpersonal behaviour. By contrast, a boss who is relatively placid and can thus be treated as colleague rather than a superior may be somewhat salient with respect to the stereotype.<sup>11</sup>

Just as the lexical concept for [BOSS] has a sophisticated cognitive model profile to which the lexical concept potentially affords access, so too the [PUSSYCAT] lexical concept provides access to a wide range of knowledge structures. A very partial cognitive model profile is provided in figure 9.

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<sup>11</sup> See Lakoff's (1987) discussion of the way in which what he refers to as idealised cognitive models (ICMs), can metonymically give rise to prototype effects, by serving as 'cognitive reference points'.

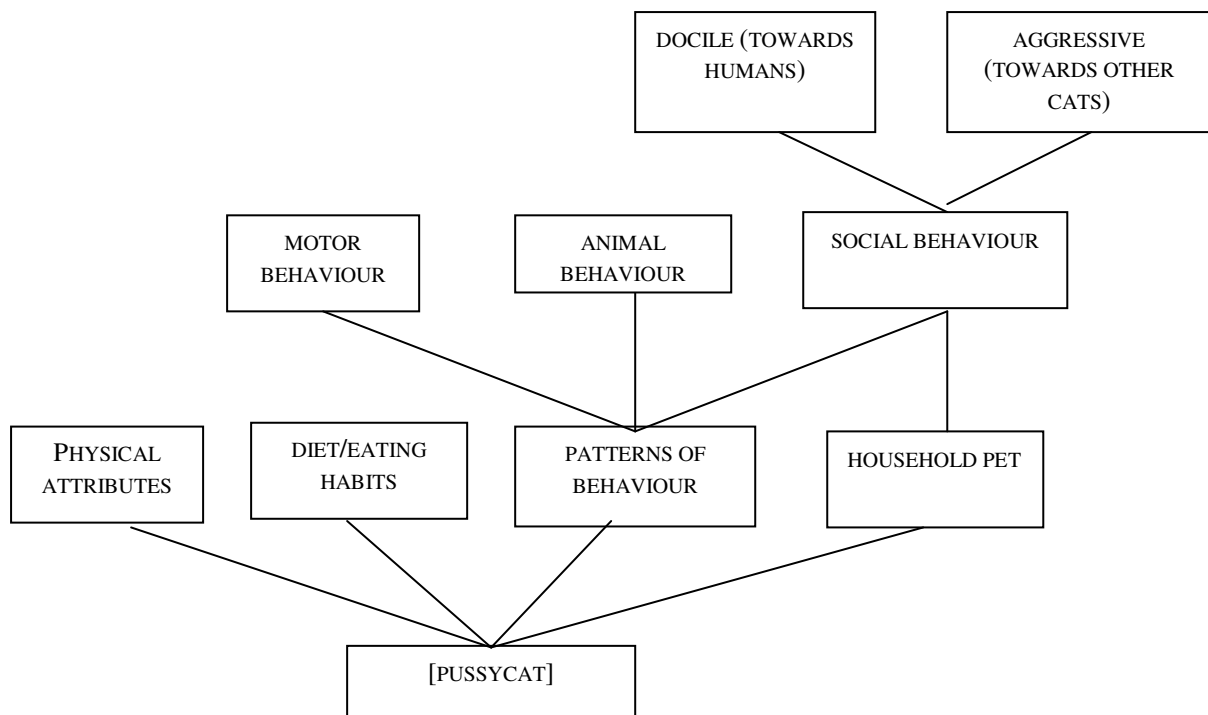


Figure 9. Partial cognitive model profile for [PUSSYCAT]

The lexical concept [PUSSYCAT] relates to cognitive models having to do with, at least, knowledge concerning physical attributes, including body shape and size, diet and eating habits, patterns of behaviour, and a pussycat's status, in western culture, as the household pet of choice for many people. In terms of secondary cognitive models, there are a number that relate to our knowledge associated with the sorts of behaviours pussycats exhibit. For instance, pussycats exhibit motor behaviour of certain kinds including the particular manner of motion pussycats engage in. Pussycats also exhibit animal behaviours of certain kinds including hunting, reproduction and so forth. Finally, pussycats also exhibit social behaviour, including behaviour towards other conspecifics, and behaviour towards humans. Hence, social behaviour is a cognitive model related to at least two primary cognitive models: those of PATTERNS OF BEHAVIOUR and HOUSEHOLD PET.

In the example in (3a), a figurative conception arises due to a failure to establish a match in the primary cognitive model profiles associated with [BOSS] and [PUSSYCAT], the two lexical concepts relevant for interpretation. Hence, a clash occurs leading to a search in a secondary cognitive model profile. In LCCM Theory, the particular lexical concept selected for clash resolution, and hence, for activation in the secondary cognitive model profile, is contextually determined. This is formalised as the *Principle of Context-induced Clash Resolution*. This can be stated as follows:

(20) Principle of Context-induced Clash Resolution

In cases where clash resolution is required, the lexical concept whose secondary cognitive model profile is searched to resolve the clash is determined by context. This is achieved by establishing a *figurative target* and a *figurative vehicle*, on the basis of context. The lexical concept that is established as the figurative vehicle is subject to clash resolution.

In the utterance in (3a), I am assuming a discourse context in which the speaker has been discussing their boss. In such a context, the figurative target (or *target* for short) is the boss, as this is the topic or theme of the utterance. Informally, the point of the utterance is to say something ‘about’ the boss. From this it follows that the figurative vehicle (or *vehicle* for short), is the pussycat. Crucially, it is the secondary cognitive model profile of the vehicle, here [PUSSYCAT], rather than the target, which undergoes search in order to facilitate clash resolution. In other words, the principle in (20) serves to determine which of the lexical concepts’ secondary cognitive model profiles is subject to search.

Before concluding the discussion of the example in (3a), consider a context in which the speaker, in making the utterance provided in (3a) is actually talking about their pussycat and bemoaning the fact that, due to an extremely fussy and awkward pet, the speaker's life is, in certain respects, constrained by the 'demands' of their cat for food, affection, attention and so on. In such a scenario, the cat owner might say: *My boss is a pussycat*. This interpretation, which I refer to as the 'bossy cat' interpretation is also accounted for by the Principle of Context-induced Clash Resolution. In this case, it is the [BOSS] rather than the [PUSSYCAT] lexical concept which becomes the figurative vehicle, and hence whose secondary cognitive model profile is subject to search and hence clash resolution. Moreover, the [PUSSYCAT] lexical concept becomes the figurative target as the interpretation represents an attempt to ascribe some quality *to* the 'pussycat'.

The interpretation arises as follows. There is a clash between the primary cognitive model profiles associated with [BOSS] and [PUSSYCAT] as in the canonical interpretation described earlier. With the 'bossy cat' interpretation, the difference arises due to context: the speaker is describing their pet. Hence, the utterance is 'about' their pet rather than their boss. The principle given in (20) ensures that the [BOSS] lexical concept is treated as the figurative vehicle. That is, [BOSS] receives an informational characterisation that relates not to an adult human in a workplace scenario, but rather any organism that exhibits behaviour that serves to constrain and thus restrict a given human's freedom in certain respects. This is achieved by conducting a search in the secondary cognitive model profile for [BOSS] in order to provide activation of a cognitive model relating to restrictive behaviour and practice.

## THE STUDENT'S GRADES WENT UP

Now let's consider the kind of metaphoric conception associated with the intransitive motion construction: *The student's grades went up*. The metaphoric conception typically associated with this utterance relates to an improvement in the student's grades. As with the 'pussycat' example, interpretation involves matching which is guided by application of the Principle of Conceptual Coherence to ensure a match is achieved. The Principle of Ordered Search ensures that attempts are made to match in the primary cognitive model profiles before proceeding to the secondary cognitive model profiles. Due to the Principle of Context-induced Clash Resolution, given that the communicative intention is to ascribe some quality to the student's grades, it is the lexical concept [WENT UP] which is designated as the figurative vehicle in the meaning construction process, and hence which undergoes the search operation in its secondary cognitive model profile. A partial cognitive model profile for *went up* is provided below in figure 10.

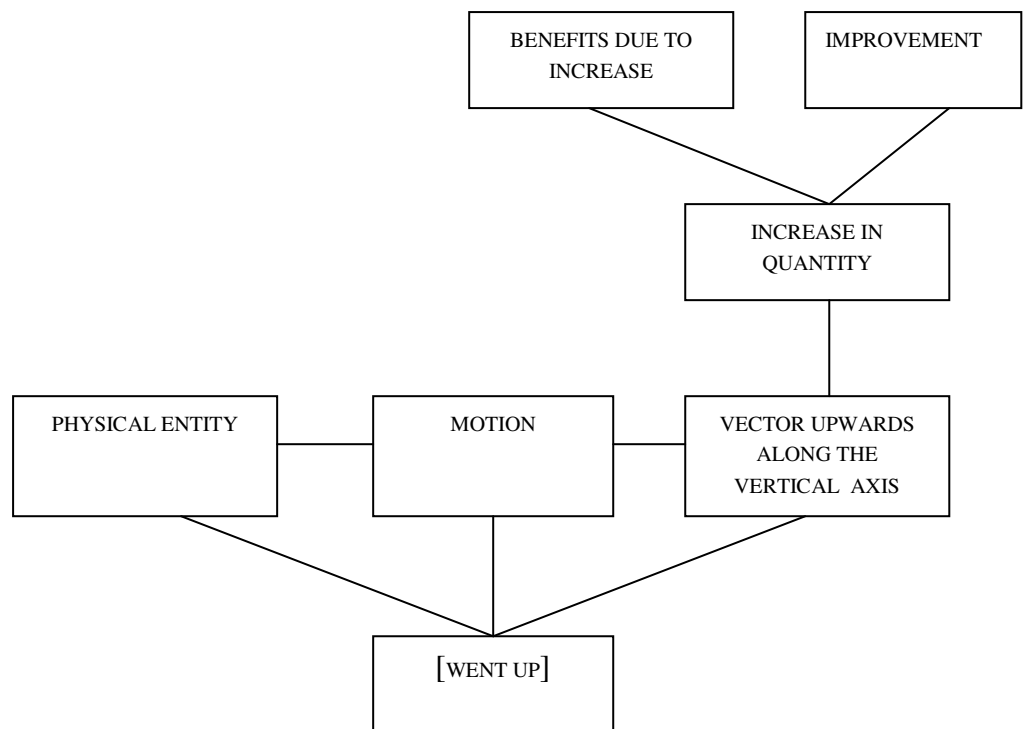


Figure 10. Partial cognitive model profile for [WENT UP]

As we see, [WENT UP] affords access to knowledge relating to a physical entity that is capable of motion, and the motion is directed against gravity on the vertical axis. These represent at least three of the primary cognitive models to which [WENT UP] affords access. There are, additionally, a small number of secondary cognitive models illustrated in figure 10. The first relates to INCREASE IN QUANTITY. In many cases in everyday interaction with our environment, being located further up on the vertical axis correlates with an increase in quantity—for instance, the higher the level of water in a glass, the more there is. A further secondary cognitive model concerns the benefits that naturally accrue by virtue of greater quantity. For instance, a higher pile of oranges correlates with more oranges, which correlates with more food and

thus greater opportunity for nourishment. The greater the amount of liquid in a glass relates to greater ability to receive refreshment, and so forth. In addition, there is also a secondary cognitive model of IMPROVEMENT which derives from an increase in quantity. Improvement relates to a change evaluated as positive, in this instance an increase in amount, over time, i.e., an amount at one point in time measured against an increased amount at a later point.

Clash resolution is achieved by virtue of the secondary cognitive model of IMPROVEMENT achieving activation. This provides a match between the informational characterisation associated with [STUDENT'S GRADES] and the secondary cognitive profile to which [WENT UP] affords access. This example provides a figurative conception, as it involves clash resolution in a secondary cognitive model profile.

## 5.2. Metonymy

I now turn, briefly, to the LCCM account of *metonymic conceptions*. Earlier in this paper I presented the following examples as instances of metonymy:

- (4) a. *France* rejected the EU constitution
- b. The *ham sandwich* has asked for the bill

I provided an LCCM analysis of the example in (4a) earlier in order to illustrate the distinction between the meaning construction processes involved in deriving literal and figurative conceptions associated with utterances. In this section I will consider the example in (4b): *The ham sandwich has asked for the bill*, in order to illustrate the way metonymic conceptions are derived.

As we saw with the earlier analysis of the example in (4a) and the analysis of metaphoric conceptions, what is common to both metaphor and metonymy in the LCCM account is that language understanding involves activation of cognitive models in the secondary cognitive model profile of a particular lexical concept. Hence, clash resolution is required, which is the distinguishing feature of figurative as opposed to literal meaning construction. In order to illustrate the distinction between a metonymic conception, and the metaphoric conceptions discussed earlier, let's consider the example in (4b).

THE HAM SANDWICH HAS ASKED FOR THE BILL

In this utterance the lexical concept [HAM SANDWICH] undergoes interpretation the lexical concept [HAM SANDWICH] undergoes interpretation in conjunction with the informational characterisation 'asked for the bill'. However, there is a clash between the informational characterisation, and the primary cognitive model profile of [HAM SANDWICH]. After all, a ham sandwich is not, normally, conceived of as an animate entity that can ask for the bill.

Due to the Principle of Context-induced Clash Resolution, the customer who ordered the ham sandwich is identified as the figurative target, and the ham sandwich is identified as the figurative vehicle. Accordingly, it is the cognitive model profile associated with the lexical concept [HAM SANDWICH] which becomes the site for clash resolution. Following the Principle of Ordered Search, the search region for clash resolution is expanded to take in secondary cognitive models associated with [HAM SANDWICH]. A partial cognitive model profile for [HAM SANDWICH] is provided in figure 11.

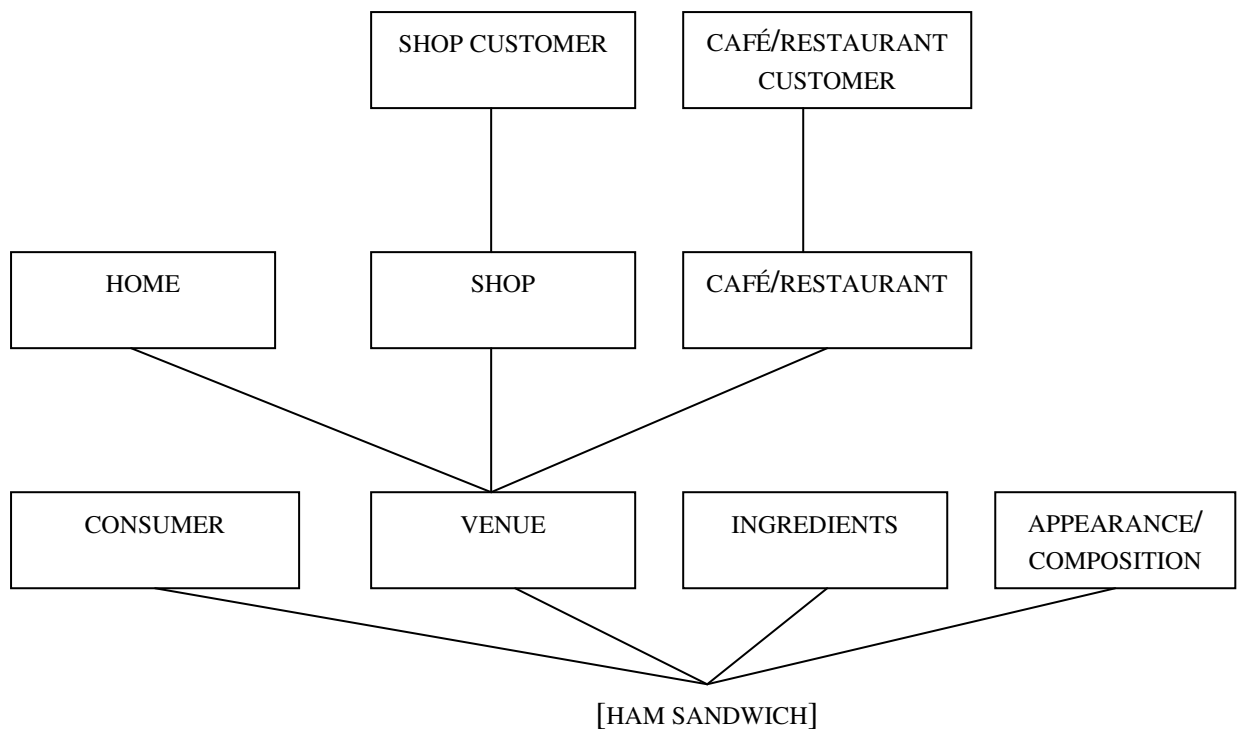


Figure 11. Partial cognitive model profile for [HAM SANDWICH]

In this example, clash resolution is achieved by virtue of a search occurring in the secondary cognitive model profile of [HAM SANDWICH]. The cognitive model which achieves activation is that of RESTAURANT CUSTOMER.

### 5.3. Metaphor versus metonymy

As observed earlier, it has often been pointed out that metonymy, but not metaphor, has a referential function—one entity serves to stand for, or identify, another, as in a ‘ham sandwich’ serving to identify the particular customer who ordered the ham sandwich. In contrast, previous scholars have variously argued that metaphor serves to frame a particular target in terms of a novel categories, e.g., *My job is a jail* (e.g., Glucksberg and Keysar 1990; Carston 2002), or analogy, e.g., *Juliet is the sun* (e.g.,

Gentner *et al.*, 2001). That is, metaphor has what we might *very* loosely refer to as a *predicative function*.<sup>12</sup>

From the perspective of LCCM Theory the distinction between metaphor and metonymy relates to whether the figurative target and figurative vehicle exhibit *alignment*, and hence whether the *clash resolution site* corresponds to the figurative target. To illustrate, let's reconsider the canonical metaphoric 'docile boss' interpretation of *My boss is a pussycat*. In this example the figurative target is the lexical concept [BOSS] and the figurative vehicle is [PUSSYCAT]. Following the Principle of Context-induced Clash Resolution, the cognitive model profile for [PUSSYCAT], the figurative vehicle, is the clash resolution site: activation of a secondary cognitive model takes place here.

This situation differs with respect to metonymy. In the 'ham sandwich' example, the 'customer' corresponds to the figurative target, as determined by the Principle of Context-induced Clash Resolution, and the figurative vehicle corresponds to the 'ham sandwich'. However, both contextually salient elements are accessed via the cognitive model profile associated with a single lexical concept: [HAM SANDWICH]. In other words, there is alignment, in a single cognitive model profile, of the figurative target and vehicle. Hence, the site of clash resolution corresponds to the *access route* for the figurative target: 'customer'.

In sum, LCCM Theory reveals a divergence in metaphor and metonymy, which emerges as an outcome of the application of regular meaning construction

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<sup>12</sup> Note that the class of cross-domain mappings ('conceptual metaphors'), of the type studied by Lakoff and Johnson, as exemplified by the examples in (3b) and (5) to (7) appear to be of a different kind than those studied by scholars such as Carston, Glucksberg, and Gentner.

mechanisms. Figurative conceptions which are labelled as ‘metonymic’ arise due to the figurative vehicle facilitating direct access to the figurative target due to alignment of the figurative vehicle and target in the same lexical concept and cognitive model profile. In contrast, ‘metaphoric’ conceptions arise due to a divergence between figurative vehicles and targets across two distinct lexical concepts.

Based on this discussion, we see that the ‘bossy pussycat’ interpretation of *My boss is a pussycat* discussed earlier is metaphor-like, in the sense that there is non-alignment of the figurative target and vehicle. After all, in that interpretation, the lexical concept [BOSS] is the figurative vehicle and hence the site of clash resolution, while [PUSSYCAT] is the figurative target. Yet, the ‘bossy pussycat’ interpretation doesn’t intuitively feel metaphoric. While this interpretation does constitute a figurative conception, given the way figurativity is operationalised in LCCM Theory, involving, as it does, primary activation of a secondary cognitive model in one of the cognitive model profiles undergoing matching, the interpretation is somewhat atypical, from the perspective of the canonical discourse function associated with metaphor. As we have seen, metaphor normally has a predicative function: it says something ‘about’ a Subject or Theme. Yet, in the ‘bossy pussycat’ interpretation, the predicative interpretation is at odds with the organisation of the linguistic content as it emerges following integration. That is, while at the level of linguistic content lexical concept integration leads to the [BOSS] lexical concept having the semantic value of Subject, interpretation leads to a conception in which the utterance serves to attribute the quality of bossiness to the ‘pussycat’, the figurative target in this interpretation, rather than the ‘boss’. For this reason, there is what we might think of as a *mismatch* between the output of lexical concept integration on one hand, and interpretation on

the other. The net result is that such an interpretation is unlikely to feel metaphoric, although the utterance *is* figurative, in present terms.

In the final analysis, metaphor and metonymy, rather than being neatly identifiable types of figurative language types, are terms that have been applied by different scholars to a range of overlapping and sometimes complementary figurative language phenomena. What emerges from the LCCM account is that the intuitions that lie behind the use of these terms to data of particular kinds is a function of small set of compositional mechanisms that are guided by various sorts of constraints (the principles identified in this paper). Moreover, the application of these mechanisms and principles gives rise to a range of figurative conceptions which, in terms of discourse functions, are continuous in nature. That is, from the perspective of language understanding, while there are, what might be thought of as, symptoms of metaphor and metonymy, there is not always a neat distinction that can be made that serves to identify where metaphor ends and metonymy begins.

## 6. What is not figurative language

In some accounts of figurative language phenomena,<sup>13</sup> examples such as the italicised lexical items in each of the following examples are taken to be metaphoric in nature:

- (21) a. That is a *loud* shirt  
 b. They have a *close* relationship  
 c. She is *in* love

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<sup>13</sup> For instance Lakoff and Johnson (1980, 1999). See also the metaphor identification criteria as developed by the Pragglejaz Group (2007) which would classify these examples as being instances of metaphor.

d. That took a *long* time

In these examples, the use of *loud* refers to a brightly coloured shirt, *close* relates to emotional ‘closeness’, *in* relates to an emotional state while *long* relates to extended duration.

From the perspective of LCCM Theory, such usages relate to distinct lexical concepts rather than being due to figurative language conceptions. For instance, *long* has at least two conventionally established lexical concepts associated with the form *long*: [EXTENDED IN HORIZONTAL SPACE], and [EXTENDED DURATION]. During lexical concept selection the [EXTENDED DURATION] lexical concept is selected, thereby avoiding a clash in the primary cognitive model profiles associated with [EXTENDED DURATION] and [TIME]

Evidence that *long* has (at least) two distinct lexical concepts conventionally associated with it comes from examples such as the following:

- (22) a. A long kiss  
 b. A long book

‘Long’ in ‘long kiss’ relates to extended duration, not to physical length—a kiss cannot, obviously, be extended in space. Similarly in (22b), we are not, or at least not typically, dealing with an oversize book, but rather with an extended reading time.

Understanding the form *long* as relating to [EXTENDED DURATION] relates to the process of lexical concept selection. During language understanding we select the [EXTENDED DURATION] lexical concept in conjunction with the lexical concept [BOOK] as facilitating provision of most coherent conception, as guided by context. Of

course, we are helped by the frequency with which these two forms collocate and are associated with this very conception. Collocations of this kind which provide a pre-assembled conception I refer to as *concept collocations*. In the same way, *long time* represents a concept collocation.

In view of the LCCM Theory account, concept collocations such as ‘long time’ are not, then, appropriately thought of as involving ‘metaphor’, in the sense that they do not result from the on-line process of clash resolution, as described above. This view of highly conventional ‘lexical metaphors’ is consonant with the approach developed in the *Career of Metaphor Hypothesis* (Bowdle and Gentner 2005), which builds on the *Structure Mapping Approach* to metaphor developed by Dedre Gentner (e.g., 1988; Gentner *et al.* 2001). In that approach, highly conventionalised ‘metaphors’ are treated as being polysemous sense-units which are conventionally associated with the ‘base’ term, here, *long*, and which are accessed via a ‘lexical look-up’ process, rather than by establishing structural alignments and inference projections (mappings) between a base and target. This aspect of the LCCM perspective is also consonant with the work of Rachel Giora (2003). In her work, Giora demonstrates that certain examples of ‘figurative’ meanings associated with lexical items appear to be stored in memory and can be more salient than so-called ‘literal’ meanings.

From the LCCM perspective, the interesting question in such cases is how an [EXTENDED DURATION] lexical concept became conventionally associated with the form *long*. Recent work on semantic change pioneered by Elizabeth Closs Traugott (e.g., Traugott and Dasher 2004) has argued that situated implicatures (or invited inferences) can become ‘detached’ from their contexts of use and reanalysed as being distinct sense-units—lexical concepts in present terms—which are associated with a

given vehicle. Intuitions by some scholars that these examples are figurative are based, I suggest, on *interference* of contextually irrelevant lexical concepts, in the case of our example the lexical concept [EXTENDED IN HORIZONTAL SPACE]. I assume that such interference can occur when the temporal restrictions on language processing are relaxed, as is the case in the theoretical practice of language scientists who often appear to analyse such expressions without taking (any) account of their usage context(s).<sup>14</sup> In actual conversation, I would argue, talk of a ‘long time’ is hardly ever felt to be figurative.<sup>15</sup>

The [EXTENDED DURATION] lexical concept associated with *long* might be historically derived from contexts of communication in which reference to length can be understood as reference to duration without harming expression of the communicative intention, as in communication about ‘long journeys’. Through repeated use of this form, with the inferred meaning, in such *bridging contexts* (Evans and Wilkins 2000), it is plausible that *long* developed an [EXTENDED DURATION] lexical concept by virtue of *decontextualisation* (Langacker 1987).

## 7. Conclusion

This paper has been concerned with an LCCM account of figurative language understanding. This account relates to the role of language in figurative language understanding and the way in which it interfaces with non-linguistic knowledge. Hence, this account complements research in the tradition of Conceptual Metaphor

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<sup>14</sup> See Leezenberg (2001) and Stern (2000) for discussion of the importance of context in metaphor understanding.

<sup>15</sup> See Bowdle and Gentner (2005) for a related perspective (cf. the Graded Salience Hypothesis of Giora, e.g., 1997).

Theory, which is not an account of figurative language understanding. A goal for future research is to determine the way in which conceptual metaphors structure the cognitive model profiles which are activated during the compositional mechanisms described by LCCM Theory.

In specific terms, in this paper I have addressed the distinction between a literal conception—the meaning associated with a literal utterance—on one hand, and a figurative conception—the meaning associated with a figurative utterance—on the other. While a literal conception canonically results in an interpretation which activates a cognitive model, or cognitive models, within the default, which is to say primary, cognitive model profile, a figurative conception arises when cognitive models are activated in the secondary cognitive model profile. This takes place when there is clash in one of the primary cognitive models involved in interpretation. A clash results in enlargement of the search domain, such that matching takes place in the secondary cognitive model profile associated with one of the relevant lexical concepts. In some cases, context serves to determine which lexical concept is the site for clash resolution, captured by the Principle of Context-induced Clash Resolution. A further distinction made was the distinction in discourse function associated with figurative conceptions referred to as metaphor and metonymy. It was argued that the distinction is due to a whether there is alignment or not between what was referred to as figurative target and figurative vehicle. While the hallmark of metaphor is that there is divergence between the two, the symptom of metonymy is that there is alignment. In general terms, LCCM Theory predicts that the same set of compositional mechanisms are responsible for literal and figurative language understanding. Hence, figurative language does not involve a distinct module or set of processes. Rather, it is continuous with literal language understanding.

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