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The Cognitive Linguistic Approach to English Verb-Particle Constructions

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To my parents

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Yukiyo Takimoto

The cognitive linguistic approach to the semantics of English verb-particle constructions (VPCs)

This thesis addresses the lexico-semantic networks of verb-particle constructions (VPCs) within the framework of the Theory of Lexical Concepts and Cognitive Models (LCCM Theory) developed by Evans (2009).

The semantics of VPCs have received much attention from many scholars over the last four decades (e.g., Lindner 1981; Morgan 1997). Although each researcher has contributed to a better characterisation of the semantics of VPCs, the following question has remained unsolved: How is each distinct interpretation associated with an identical VPC originally formed in the mind? Therefore, the aim of this study is to suggest a better model of the mechanism whereby each distinct interpretation associated with a given VPC is originally formed in the mind by focusing on *pick up* within LCCM theory.

LCCM theory is designed to characterise the protean nature of word meaning and assumes a bifurcation between the linguistic and conceptual systems. According to the theory, utterance-level meanings (conceptions) are produced due to the interaction of the information in the linguistic system (lexical concepts) with the corresponding one in the conceptual system (cognitive models).

Based on the key assumption of LCCM theory, I argue that the interpretation of a given VPC is produced as a result of the lexical concepts associated with a verb and a particle, respectively, affording access to the corresponding cognitive models. In order to predict the process more accurately, building upon the detailed historical analysis of *up*, I offer its semantic network, employing the methodology to distinguish distinct lexical concepts proposed by Evans (2009). Secondly, I identify the semantic network of *pick up*, as well as that of *pick*. Thirdly, drawing upon work on the human conceptual system (e.g., Barsalou 1999), I predict the types of cognitive models that are accessed/produced during the process of interpretation.

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Chapter 1 Introduction

In general, verb-particle constructions (VPCs) are known as single units in which verbs and particles are inseparable in their interpretations. To illustrate, let us consider the following examples:

(1) a. He *put on* the coat b. He *put* the coat
(2) a. The plane *took off* on time b. *The plane *took* on time
(3) a. She *gave up* her dream b. ??She *gave* her dream
(4) a. They *closed down* the theatre b. They *closed* the theatre
(5) a. I *turned in* my homework paper b. *I *turned* my homework paper
(6) a. John *picked out* the most difficult book b. John *picked* the most difficult book

The combinations of verbs with spatial particles exemplified from (1a) to (6a) are all regarded as VPCs. In the examples, each combination is associated with the "to clothe oneself with", "to rise into the air or begin flight", "to cease to do or perform", "to cease or cause to cease operations", "to hand in" or "to choose or select" meanings. In each example, a given VPC is ungrammatical without its particle, as exemplified in (2b), (3b) and (5b), or its meaning is changed, as shown in (1b), (4b) and (6b).

Due to their versatile nature, VPCs have attracted the attention of a significant number of linguists in the past century (e.g., Curme 1914; van Dongen 1919; Kennedy 1920; Roberts 1936; Jowett 1951; Wood 1955; Konishi 1958; Taha 1960; Fairclough 1965; Fraser 1965, 1974; Live 1965; Potter 1965; Legum 1968; Bolinger 1971; Lipka 1972; Sroka 1972; Declerck 1976; Lindner 1981, 1982; Boers 1996; Morgan 1997; Hampe 2000; Rudzka-Ostyn 2003; Tyler & Evans 2003). Starting from a purely syntactic and/or historical analysis, many researchers have paid much attention to various aspects of VPCs from a wide variety of perspectives. I will provide an overview of the main previous studies in the following chapter.

The aims of this chapter are as follows: The first is to introduce the problems that I address in this thesis and to clarify why the present study is important. The second is to take a brief overview of work on VPCs before Lindner (1981).[1] The third objective is to introduce the background to the theoretical framework within which the present study is conducted and to elucidate why the framework is appropriate for the present study.

[1] As will be seen in Chapter 2, Lindner (1981) is the first influential study to focus on the semantics of VPCs in the field of cognitive linguistics.

This chapter consists of four sections: Section 1.1 introduces the problems that I address in this thesis and offers possible solutions to them. Section 1.2 addresses the treatment of VPCs before Lindner's (1981) work. Section 1.3 focuses on the background to The Theory of Lexical Concepts and Cognitive models (LCCM Theory) within which the present study is conducted. Section 1.4 explains the sources of the data I use in this thesis. Section 1.5 presents an overview of the remainder of the thesis. Section 1.6 provides a brief summary.

1.1. Problems that I address in the thesis

The main problem that I address in the thesis is the following: How do we account for the distinct interpretations associated with an identical VPC? To illustrate this, let us consider the following examples by focusing on *pick up*:

(1) The dog *picked up* the bone in its mouth
(2) Sales *picked up* last fall
(3) I *picked up* French quickly
(4) Did the microphone *pick up* that sound?
(5) She just *picked up* and left

It is widely known that VPCs such as *pick up* are often associated with a number of distinct uses. In the above examples, the use of *pick up* is associated with the 'to take up (something) with a hand or other body part' meaning in (1), the 'to improve in condition or activity' meaning in (2), the 'to acquire (knowledge) by learning or experience' meaning in (3), the 'to detect' meaning in (4), and the 'to prepare a sudden departure' meaning in (5). In previous studies, there has been no consensus regarding which types of information associated with an identical VPC distinguish one usage from another. Therefore, the aim of this study is to investigate which types of information associated with a verb and a spatial particle within VPCs affect the creation of the semantics of VPCs. To do so, we will need to identify the kinds of information with which a verb and particle are associated precisely. As will be shown in Chapter 3, based on Evans (2009), I assume that there are two types of representational systems in the mind, namely the linguistic and conceptual systems. The former system consists of schematic information specific for language, while the latter system consists of non-linguistic information. The main argument in the thesis is that the semantics of VPCs are produced due to the interaction of the linguistic information with the conceptual information associated with a verb and a particle within VPCs. Therefore, in order to predict the linguistic information associated with the spatial particle *up*, I will first examine the historical development of *up*. The reason

that I assume historical analysis is beneficial here is that it is plausible to consider that the historical derivational tendency partly reflects the tendency in the mind of a contemporary language user (e.g., Cuyckens 1999). Since the spatial particle *up* had developed its senses via two types of grammatical roles, Chapter 4 will address the historical development of *up* within VPCs and Chapter 5 consider the historical development of the adjectival *up*. Secondly, building on the detailed observation of the historical development of *up*, Chapter 6 will offer the semantic network of *up* in the mind of a contemporary language user, employing the methodology to distinguish distinct senses associated with a polysemous lexical item proposed by Evans (2009). Thirdly, employing the predicted derivational processes of the distinct senses associated with *up*, Chapter 7 will provide the semantic network of the VPC *pick up*, as well as that of the verb *pick*. At the same time, drawing upon work on the human conceptual system (e.g., Barsalou 1999), how each distinct sense associated with *pick up* is originally formed will be investigated.

1.2. The treatment of VPCs before Lindner (1981)

There has also been a significant amount of research on VPCs before Lindner (1981). Of these, Fraser's (1974) work, which addresses the semantics of VPCs more than do the other studies, will be discussed here.

1.2.1 Fraser's (1974) syntactic approach to VPCs[2]

Fraser (1974) attempts to analyse VPCs from the perspective of transformational linguistics.[3] With regard to the semantics of VPCs, he identifies two types, namely systematic and figurative combinations. Systematic combinations are those VPCs to which the spatial particles contribute semantically in a consistent way, as in (1):

(1) a. drink down, gulp down, swallow down
b. hang up, nail up, paste up, tuck up (from Fraser 1974)

Figurative combinations are all VPCs other than the systematic ones, as in (2):

(2) figure out, look up, auction off (from Fraser 1974)

According to Fraser, there are several types of systematic combination. The first is VPCs in which the spatial particles retain an adverbial force, as in (1). For example, if we *hang up* a

[2] Fraser (1965) called VPCs verb-particle combinations.
[3] For a broader audience, Fraser attempts to avoid the notation of transformational linguistics.

picture, the picture is *up*. The second type is VPCs in which the spatial particles add a completive sense to the meaning of the verb, as in (3):

(3) a. beat up, mix up, shake up, stir up
b. coil up, curl up, wind up
c. die out, fade out, broaden out, lengthen out, spread out (from Fraser 1974)

For example, if music has *faded*, we can still hear it. However, if the music *faded out*, we cannot hear it at all. The third type is VPCs in which the co-occurrence restrictions are exactly the same to those of verbs, as in (4):

(4) a. Drink your milk / Drink your milk down (from Fraser 1974)

The fourth type is VPCs in which the co-occurrence restrictions are not identical to those of verbs, as in (5):

(5) a. Will you please hand over the secret folders
b. *Will you please hand the secret folder (from Fraser 1974)

Fraser claims that these systematic combinations occupy only a small part of VPCs in English and that figurative combinations are much more predominant. More examples of the figurative cases are summarised in (6):

(6) a. answer back, cut back, play back
b. play down, gobble down, simmer down
c. drown out, fake out, knock out, reach out
d. carry off, show off, work off (from Fraser 1974)

Fraser observes that these combinations have the same co-occurrence restrictions as do the verb alone, but that there is no apparent way of predicting the functions of the spatial particles within the VPCs.

1.2.2. Problems

Before the appearance of work on VPCs in the field of cognitive linguistics, there was no reasonable, coherent way of analysing the semantics of VPCs. While Fraser attempts to provide a systematic characterisation of the semantics of VPCs, he fails to do so due to the lack of an appropriate methodology.

1.3. The background to The Theory of Lexical Concepts and Cognitive Models (LCCM Theory)

As a theoretical framework suited to the present study, I will adopt the LCCM Theory. Before moving on to a detailed description, I will provide a background to LCCM Theory.

1.3.1. Problems with the traditional view

Word meaning has long been accounted for under the view called literalism (Recanati 2004). Here, I will provide a brief overview of literalism based on Evans (2009). Many scholars have taken literalism to offer an account of word meaning (e.g., Katz & Fodor 1963; Jackendoff 1990; Wierzbicka 1996). One of its main assumptions is the clear distinction between semantics and pragmatics. That is, literalism distinguishes a meaning that is independent of the context from the one dependent on the context, resulting three types of meanings, namely word meaning, sentence meaning and speaker meaning.[4] This view postulates that sentence meaning is produced as a result of the addition of smaller components of meaning, usually exhibited by words, along with the grammatical array in which they occur; that is, the rules governing the combination of word meanings. This follows because the importance of an account reflecting the observational accuracy of these fragments of meaning and rules has been highlighted under this view. According to literalism, word meaning is considered to be comparatively fixed and stable; as a result, it is identifiable independent of contexts. The same is true of the sentence meaning produced by the combination of word meanings. By contrast, the speaker' meaning is related closely to the context(s) in which it is embedded. By way of illustration, let us consider the following example:

(1) Bangor is 184 miles north of Cardiff
(2) A: Do you think we can make it to Bangor without filling up?
B: Bangor is 184 miles north of Cardiff

According to the literalist view, the example in (1) is assumed to carry a sentence meaning because the proposition that Brighton is 50 miles south of London reflects a fixed and stable fact independent of any contexts; thus this proposition is always true in any context. On the other hand, despite (1) and (2B) being the same sentence, some additional meanings can be assigned to the latter sentence due to the context in which it occurs; that is, a speaker meaning. An answering such as (2B) to the question expressed by (2A) means that, in addition to the sentence meaning carried by it, it involves the additional speaker meaning that they need to fill up the car with petrol in order to reach Brighton with no accidents. To put this another way, literalism classifies word meaning and sentence meaning within the scope of semantics on one hand, and speaker meaning within the scope of pragmatics on the other.

[4] Sentence meaning can be paraphrased as a proposition. It has been considered under literalism that sentence meaning, or a proposition, can be assessed whether it is true or not in relation to the state of affairs that exists in the world.

Moreover, in this view, it is understood that there is a clear distinction between literal and figurative language. That is, literalism holds that while literal language is grouped into the scope of semantics, figurative language is included within the scope of pragmatics based on the assumption that figurative language is created as a result of literal language being interpreted dependent on the context in which it occurs.

Thus far, we have seen what literalism looks like. Whereas literalism has been predominant in the field of semantics, as Evans (2009) argued, it is problematic in some respects.

The first problem involves the clear distinction between the meaning independent of contexts, namely word meaning and sentence meaning, and the meaning dependent on contexts, which is speaker meaning. To clarify this point, let us consider the following examples:

(3) a. John opened the window
b. John opened the mouth
c. The surgeon opened the wound
d. The discussant opened the conversation
e. John opened a bank account
f. He opened his mind to a new way of thinking (from Evans 2009)

On the basis of Searle's (1983) observation, Evans (2009) points out that it is difficult to provide a cognitively plausible characterisation for the meaning of *open* without taking any contexts into account. This follows because the different meanings of *open* exhibited by (3) are produced as a consequence of the use of our encyclopaedic knowledge, or of any kinds of knowledge or experiences relating to the act of *open*. For example, the difference between *opens* in (3a) and (3b) cannot be explained without providing access to knowledge concerning the actual difference between opening a window and opening a mouth. The necessity of context seems more remarkable when considering the more figurative meanings expressed in the sentences from (3d) to (3f) inclusive. For example, it is impossible to describe the differences between *opens* in (3e) and (3f) without drawing upon our knowledge of the different ways in which a bank account and one's mind can be opened. In light of these observations, it is obvious that the clear distinction between semantics and pragmatics posited by literalism is unwarranted. Moreover, it is apparent that the stability of word meaning is unjustified because, as evidenced in the examples in (3), a word's meaning is variable depending on the context in which it is embedded.

According to Evans (2009), the second problem relates to the clear distinction between literal and figurative language. Whereas literalism maintains that the use of figurative language is produced as a consequence of utilising the context-dependent construal of literal language,

Evans argues that there is evidence to prove that this is not the case. For example, literalism predicts that a literal sentence can be processed faster than can a figurative one in the minds of language users based on the assumption that, in order to interpret a figurative expression, the processing of the literal version is necessary first. However, a number of studies concerning psycholinguistic processing show that this is a false prediction; that is to say, it seems apparent from the results of the research that both a literal and a figurative expression can be processed with equal efficiency (e.g., Gibbs 1994; Glucksberg 2001, 2003; Giora 1997, 2003).

1.3.2. Other previous approaches to word meaning

In contrast to the view of word meaning advocated by literalism, some researchers have proposed other approaches to word meaning. I will now provide a brief overview of these previous approaches based on Evans' (2009) discussion and will present the problems that motivate LCCM Theory.

The first type of approach adopted by many scholars is represented by Brugman and Lakoff (1988).[5] The key characteristic of this approach is the assumption that a huge number of distinct senses associated with a lexical item are stored in the long-term memory of language users. Brugman and Lakoff (1988) provide a highly detailed characterisation of the semantics of the English preposition *over*. While this type of approach was prevalent in the 1980s, it has received considerable criticism to date (e.g., Pustejovsky 1995; Sandra 1998; Tyler & Evans 2003). According to Pustejovsky (1995), the fatal problem with this approach entails the failure to predict the range of senses associated with a lexical item. Since the sense exhibited by a lexical form varies depending on the context in which it appears, if it is assumed that the mental lexicon includes all such context-dependent interpretations as its members, this type of approach would allow for unlimited polysemy.

The second type of approach is represented by Pustejovsky (1995). This perspective postulates that comparatively abstract underlying semantic entries give rise to the surface interpretations of a lexical form via the cognitive operations made by language users or the linguistic contexts accompanying it. According to Pustejovsky (1995), there are relatively abstract lexical meta-entries in the mental lexicon, each of which is assumed to be associated with qualia roles. It is assumed that the value of the qualia roles is underspecified and that it can be filled via the cognitive operations or the linguistic contexts as described above. The fatal problem with this approach arises from the uncertainty of psychological reality. Whereas

[5] Lindner's work (1981), which I will review in Chapter 2, is also classified as this type of analysis.

Pustejovsky attempts to capture the dynamic, not static, nature of word meaning, he fails to provide evidence to prove whether his analysis reflects the psychological reality of language users or not.

The third type of approach is represented by Herskovits (1986). This perspective holds that the semantic representations associated with a lexical item, which are relatively stable and fixed, combine with pragmatic principles to produce the context-dependent interpretations of the lexical form. In her study of English prepositions, Herskovits (1986) claims that, in order to provide a valid characterisation of lexical items such as prepositions, it is necessary to consider not only the simple spatial relationships between entities, but also the pragmatic knowledge conventionally utilised by language users. However, subsequent studies (e.g., Tyler & Evans 2003; Vandeloise 1994) imply that the semantic representations associated with prepositions are not limited to the simple spatial relations as Herskovits claims, but include the so-called functional meanings produced due to the pragmatic inferences made by language users. As a result, Herskovits' analysis becomes indefensible in that positing pragmatic principles independent of the semantic representations associated with a lexical item is redundant.

1.3.3. Recent developments in cognitive linguistics

I will now address the recent developments in cognitive linguistics upon which many theories, including LCCM Theory, have been constructed.

Embodied cognition

Embodied cognition is one of the most fundamental theses posited within the field of cognitive linguistics (Evans 2004; Evans & Green 2006; Gibbs 2005; Johnson 1987, 2007; Lakoff 1987; Tyler & Evans 2003) and has also been central in the field of cognitive psychology (Barsalou 1999; Barsalou et al. 1993; Glenberg 1997; Ackerman 2016). This hypothesis reflects the close relationship between human cognition and the nature of the bodies we have. That is, this thesis assumes that human cognition, particularly knowledge representation, is created via the perceptual and subjective experiences resulting from the nature of the bodies we have as humans. As humans, we receive every kind of stimuli via our sensory systems (vision, audition, olfaction, haptics and gustation) and motor information via proprioception on a daily basis. The advocates of embodied cognition claim that this wide variety of information gives rise to a tremendous number of knowledge representations that populate the conceptual system. LCCM Theory also adopts this thesis.

Lexical representation

There are three main findings pertaining to lexical representation within cognitive linguistics. The first finding concerns the conceptual nature of polysemy. As will be mentioned in Chapter 2, cognitive linguistics posits that many lexical forms exhibit significant diversity in their meanings, partly because they are conventionally associated with distinct conceptual representations in the mental lexicon. This phenomenon is referred to broadly as conceptual polysemy. For the sake of illustration, many studies on conceptual polysemy have assumed that these distinct conceptual representations form a radiating lattice structure with the prototypical sense (Lakoff 1987) in the central position. The principled polysemy approach proposed by Tyler and Evans (2003) and revised by Evans (2009) within LCCM Theory adopts this position.

The second finding relates to the selectional tendencies associated with words. Any word has a limitation in terms of the kinds of semantic arguments with which it can appear or the grammatical configurations in which it can be embedded. Such information is technically called selectional tendencies. In the fields of cognitive lexical semantics (e.g., Dabrowska 2009) and corpus linguistics (e.g., Gries & Divjak 2009), selectional tendencies are regarded as part of the linguistic knowledge associated with a lexical form. Based on this finding, Evans (2009) proposes a methodology to identify the distinct semantic properties carried by one lexical form. I will present this methodology in more detail in Chapter 3.

The third finding has a close relationship with the semantic basis of grammatical categories. The generative tradition holds that the distinctions amongst lexical classes such as nouns and verbs can be attributed to information relating to syntax; for example, information about distribution or morphology. In contrast to this position, some cognitive linguists have claimed that it is the semantic properties carried by words that distinguish lexical classes, not syntactic or morphological ones, and that the formal properties that appear to distinguish them arise from semantic categories. For example, Langacker (1987) mentions the semantic properties that distinguish nouns and verbs. According to Langacker, nouns can be characterised by virtue of a region in some domain.[6] For example, the lexical item *book* is held to designate or profile (conceptually highlight) a region of physical artefact in the domain of physical space. On the other hand, verbs are held to profile a relationship encoding an entity that holds over time. For

[6] With regarding to Langacker's view of domains, see Chapter 2.

example, the lexical item *run* profiles an action that changes over time. LCCM Theory also draws upon this finding.

Encyclopaedic semantics

Work on theories in encyclopaedic semantics (e.g., Langacker 1987; Fillmore 1982, 1985) suggests that word meaning is produced as a consequence of providing access to a vast amount of encyclopaedic knowledge created due to various kinds of information from the world outside. For example, Langacker (1987) characterises this phenomenon in terms of profile/base organization. By way of illustration, let us consider the lexical form *finger*. The reason that the word *finger* is easily understandable is that it is conventionally understood that the finger is part of hand. To put this another way, this follows because the meaning of the word *finger* cannot receive any interpretation without affording access to the background knowledge. According to Langacker, word meaning comprises a profile: what is designated by the word itself, and a base that constitutes the background information necessary to understand the profile. While LCCM Theory adopts the encyclopaedic perspective, the version posited by the theory differs from the one described above. That is, LCCM Theory holds that there is a relatively clear boundary between the linguistic system, which is amodal and unique to language, and the conceptual system, which is multimodal and includes any kind of information we receive from the world outside. Whereas the traditional view of encyclopaedic semantics defines linguistic information and conceptual information by virtue of the so-called part-whole relationship, the perspective taken by LCCM Theory distinguishes both types of information clearly due to the difference in their qualities. Recent work in cognitive psychology underpins this position (e.g., Barsalou 1999). I will discuss this in detail later.

The symbolic nature of grammar

As mentioned above, positions such as literalism have assumed that semantic composition occurs as a result of adding the semantic elements associated with each word, along with the rules governing how these semantic elements combine. By contrast, cognitive linguistics maintains that the lexicon and grammar form a continuum, technically known as the lexicon-grammar continuum (Croft 2002; Langacker 1987; Goldberg 1995). This view postulates that both lexicon and grammar consist of bipolar symbolic units, namely a phonological pole and a semantic pole, and that all linguistic units ranging from words to idioms to grammatical constructions constitute their own symbolic units. According to this perspective, this follows

because semantic composition occurs as a result of unifying the semantic properties carried by each symbolic unit. LCCM Theory also adopts this position.

The functional nature of spatial semantics

In the field of cognitive linguistics (e.g., Vandeloise 1991, 1994), it has been assumed that, in order to characterise the semantics of spatial particles in a more precise way, it is necessary to consider their functional nature. In other words, we need to allow not only for the spatio-topological relations exhibited by spatial particles, but also the non-spatial concepts that arise from the functional consequence of humans interacting with such spatio-topological relationships in the world. LCCM Theory adopts this position.

1.3.4. Other theoretical frameworks relevant to LCCM Theory

As will be mentioned in Chapter 2, LCCM Theory is related closely to the other theoretical frameworks upon which LCCM Theory is partially based, particularly in the field of cognitive linguistics. I will now present how LCCM Theory has developed in relation to these theoretical frameworks.

LCCM Theory is a linguistic theory that offers an account for both lexical representation and semantic compositionality. To put this another way, LCCM Theory comprises a theory of language and a cognitive semantic theory which encompasses interests ranging from linguistic knowledge to figurative language to the relationship between semantic structure and conceptual structure to meaning-construction processes. One of the main purposes of LCCM Theory is to unify the seemingly irrelevant and sometimes overlapping theoretical frameworks proposed mainly by cognitive linguists into a more integrated theory whereby a wide variety of linguistic phenomena can be explained in a more systematic way. I will now discuss the phenomena that LCCM Theory can address in relation to each relevant theoretical framework in turn.

With regard to lexical representation, LCCM Theory draws upon the principled polysemy approach originally proposed by Tyler and Evans (2003) and developed by Evans (2004). The early version (Tyler & Evans 2003) provides a methodology to distinguish the senses stored in the long-term memory of language users from the context-dependent interpretations produced on-line in an attempt to resolve the long-standing problems concerning methodology identified in many previous studies (e.g., Lindner 1981; Brugman & Lakoff 1988). However, as pointed out by Evans (2004), the early version is inadequate on the grounds that it is in fact impossible to isolate context-independent meanings because any meaning is produced due to the context in which it appears. The later version of principled polysemy (Evans 2004, 2005) is revised

accordingly, and LCCM Theory is based on this version. I will explain the latest version of principled polysemy later.

As far as figurative expressions are concerned, LCCM Theory incorporates the Conceptual Metaphor Theory originally proposed by Lakoff and Johnson (1980) and developed by many other scholars (e.g., Grady 1997; Lakoff & Johnson 1999). As will be mentioned in Chapter 2, Conceptual Metaphor Theory is a cognitive semantic theory developed to model the systematicity of the complicated human imagination in terms of knowledge representations called conceptual metaphors, which are assumed to be stored in the long-term memory, and their psychological reality has been demonstrated by other empirical studies (e.g. Boroditsky 2000; Casasanto & Boroditsky 2008). Lakoff and Johnson (1999) claims that figurative language is produced due to both a universal set of pre-linguistic primary metaphors and a language-specific set of compound metaphors. While Conceptual Metaphor Theory is worthwhile to the extent that it succeeds in offering an account of knowledge representations concerning the systematicity of the human imagination, as Evans (2009) pointed out, it underplays the role of language in understanding figurative language. Evans argues that the account of figurative language in LCCM Theory emphasises the relationship between figurative language (semantic structure) and conceptual metaphors (conceptual structure), and does not consider conceptual metaphors alone.

With regard to meaning-construction processes, LCCM Theory is based on two influential theories, namely Mental Spaces Theory (Fauconnier 1994, 1997) and Conceptual Blending Theory (Fauconnier & Turner 2002). Mental Spaces Theory is a cognitive semantic theory to model the dynamic interactions between interlocutors; that is, discourse, by virtue of mental spaces that are conceptual in nature and increase as people think and talk. Conceptual Blending Theory is also a cognitive semantic theory based on Mental Spaces Theory, the purpose of which is to model the creative nature of meaning-construction processes and the use of language in these processes. Whereas these theories are useful in the sense that they provide a valid characterisation of meaning-construction processes at the conceptual level, as in the case of Conceptual Metaphor Theory, they fail to offer an appropriate explanation for these processes at the linguistic level. Evans (2009) claims the necessity of characterising meaning-construction processes in terms of the role of the words participating in such processes. An account of meaning-construction processes posited by LCCM Theory focuses on the role played by the semantic representations associated with a lexical form in meaning-construction processes.

Furthermore, since LCCM Theory also includes a theory of language, it relates to other cognitive approaches to grammar, particularly Cognitive Grammar (e.g., Langacker 2008) and Cognitive Construction Grammar (Goldberg 1995, 2006). Cognitive Grammar is one of the most influential linguistic theories that emerged as a response to the problems with the formal approach in the late 1970s and has formed the basis of cognitive linguistics ever since. Cognitive Construction Grammar is also amongst the most ground-breaking linguistic theories, and provides an account of grammatical constructions based on the assumption that constructions are meaningful in their own right. Notwithstanding the common characteristics amongst them, LCCM Theory differs from other theories in an important way.

Firstly, as will be mentioned later, LCCM Theory assumes that there is a relatively clear distinction between semantic structure and conceptual structure, which differs from Langacker's (1982) assumption that semantic structure is conventionalised conceptual structure; that is, semantic structure constitutes a part of a conceptual structure that is arranged for purposes of linguistic encoding. As will become evident later, Evans' (2009) argument regarding the relationship between semantic structure and conceptual structure is deeply rooted in the latest research results in the field of psychology, and this underpins the analysis of any kind of linguistic phenomenon made within LCCM Theory.

Secondly, while LCCM Theory adopts the construction approach in the same way as does Cognitive Construction Grammar, they differ to the extent that LCCM Theory focuses on the semantic aspects of constructions, whereas cognitive construction grammar is concerned with the formal aspects of these. LCCM Theory assumes that any linguistic unit ranging from grammatical markers such as spatial particles to idioms such as *kick a bucket* to constructions such as ditransitive construction is associated with its own semantic representation and can be fused with other ones in situated language use to give rise to more complex semantic representations.

1.4. Data

The data cited in this study were extracted from the Oxford English Dictionary (OED), Lindner (1981), the British National Corpus and free Internet dictionaries (The Free Dictionary and Merriam-Webster Dictionary).

1.5. Overview of the rest of the thesis

The remainder of the thesis consists of seven chapters. Chapter 2 provides an overview of the main previous studies in the field of cognitive linguistics, historical linguistics and child

language acquisition. Chapter 3 introduces the theoretical framework of LCCM Theory, as well as other relevant theories. Chapter 4 discusses the historical development of the semantics of *up* within VPCs. Chapter 5 addresses the historical development of the semantics of the adjectival *up*. Chapter 6 focuses on the semantic network of *up* in the mind of a contemporary language user. Chapter 7 investigates the motivations for the distinct senses associated with the VPC *pick up*. Chapter 8 provides a conclusion.

1.6. Summary

In this chapter, I introduced the problems that I will address in this thesis and clarified why this study should be conducted. I then provided a brief overview of the treatment of VPCs prior to Lindner's (1981) work. I then demonstrated the background to LCCM Theory, upon which the present study relies.

In the following chapter, I will review the previous studies in the field of cognitive linguistics, historical linguistics and child language acquisition, and will identify the problems to be addressed.

Chapter 2 Previous analyses of English verb-particle constructions (VPCs)

This chapter provides an overview of the prior major studies of English verb-particle constructions (VPCs), identifying the problems that have to be considered, and setting up the research questions that will be addressed in the following chapters.

In the first section, I introduce the three major previous studies in the field of cognitive linguistics. The reason why I address these studies is that they can be considered to be representative work on the semantics of VPCs in terms of methodology. The first influential study was conducted by Lindner (1981), which attempts to demonstrate employing the theoretical framework of Space Grammar, the precursor to Cognitive Grammar, that not only are the meanings of constructions such as VPCs not compositional, but grammatical markers such as spatial particles also form their own rich semantic networks. Although Lindner does not mention it clearly, she relies on metonymy to explain the meaning extension of VPCs. It has been substantiated that metonymy is one of the crucial factors to account for the meaning extension of a polysemous item (e.g., Brinton 1988; Evans 2009; Taylor 2002; Tyler & Evans 2003).

Furthermore, based on the work of Lindner (1981), Morgan (1997) attempts to provide a more systematic characterisation of the semantics of VPCs from the perspective of Conceptual Metaphor Theory. It has also been considered that conceptual metaphors are one of the crucial factors to explain the meaning extension of a polysemous item (e.g., Taylor 2002). In addition, Goldberg (2012) attempts to account for VPCs from the perspective of Construction Grammar. Although these analyses seem beneficial in that they provide a useful insight into the semantic systematicity of VPCs that has been ignored in the generative view, there appear to be some problems that have to be addressed in their analyses. Therefore, an alternative approach is needed for a better characterisation of the semantics of VPCs.

Next, the main studies in the field of historical linguistics will be reviewed. The reason why

the historical studies of VPCs need to be addressed is that, as I will argue later, a detailed examination of the historical development of VPCs could help us to predict the meaning extension of VPCs in the mind of a contemporary language user more accurately.

Hiltunen (1983) examines the historical development of English VPCs extensively. Using a wide variety of historical resources, he attempts to clarify how the inseparable prefixes in Old and Early Middle English had been replaced by other expressions such as phrasal and prepositional adverbs, leading to the rise of phrasal verbs. Based on *The Paston Letters*, Tanabe (1999) shed light on the process and degree of the idiomatisation of VPCs in fifteenth-century English. Akimoto (1999) investigates collocational and idiomatic aspects of VPCs in eighteenth- and nineteenth-century English. Some of the most recent research on the historical development of English VPCs was conducted by Thim (2012). By comparing English with the other Germanic languages, he argues that English phrasal verbs are by-products of the change of word order from O(bject)V(erb) in Proto-Germanic to VO in Modern English. Although each analysis contributes to a better understanding of the historical development of VPCs, there has been one intriguing question that remains unfocused, namely: What kinds of senses associated with a VPC have been derived historically in what way to form the semantic network in present-day English? In order to answer this question, a new approach is necessary.

Finally, previous studies in the field of child language acquisition will be addressed. The reason why work on the acquisition of VPCs by children should be the focus here is that the consideration of child language acquisition could help us to identify the mechanism whereby a language user derives a new usage from old ones, or from a relevant physical scene.

Based on longitudinal data obtained by observing his daughter, Tomasello (1992) examines the development of VPCs in the first two years of her life. He identifies three basic developmental patterns and attempts to categorise VPCs, including all spatial particles, into these patterns systematically. Employing the data pertaining to one English-speaking girl, Naima, from the CHILDES database, Riguel (2014) attempts to show how Naima acquired

VPCs during her first three years and to identify the correlation of the kinds of VPCs she acquired with those of VPCs produced by her mother. While each study contributes to a better understanding of how and the order in which children learn various kinds of VPCs, there has also been one intriguing question that remains unaddressed: How is each usage associated with a given VPC derived? In order to answer this question, a new approach is necessary.

This chapter consists of six sections: Section 2.1 addresses Lindner's (1981) semantic network approach, which contributes greatly to the illumination of the semantic structure of VPCs, particularly of the spatial particles *up* and *out*, Morgan's (1997) metaphorical approach, which attempts to supplement Lindner's (1981) approach in terms of various kinds of conceptual metaphors, including the new ones recognised by Morgan during the course of her study, and Goldberg's (2012) constructional approach. Section 2.2 provides an overview of the historical studies of VPCs. Section 2.3 introduces work on child language acquisition. Section 2.4 suggests the possibility of an alternative approach to VPCs in the light of the latest research. Section 2.5 sets out the research questions for a better characterisation of the semantics of VPCs. Section 2.6 provides a brief summary.

2.1. Previous studies in the field of cognitive linguistics

2.1.1. Semantic network approach ~Lindner (1981)

In this section, I provide an overview of Lindner's (1981) work. This study is the most influential one that addresses the semantic structures of VPCs within the field of cognitive linguistics. Subsection 2.1.1.1 introduces the theoretical framework of space grammar employed in her study. Subsection 2.1.1.2 focuses on how Lindner offers her explanation of the semantic structures of VPCs. Subsection 2.1.1.3 identifies the problems with her approach.

2.1.1.1. Theoretical orientation~ Space Grammar

In order to provide a better characterisation of the semantic architecture of VPCs, Lindner (1981) draws upon the theoretical framework of Space Grammar, which is the precursor to Cognitive Grammar, first applied by Langacker (1978) and developed in his 1982 study. Space Grammar emerged in response to the descriptive inadequacy of the long-standing generative approach and assumes various theses. Only the relevant ones are introduced here.

The first thesis pertains to economy. Space Grammar states that psychological reality rather than economy should be emphasised, and postulates that specific meanings associated with a lexical item and the generalisations, or 'schemas,' extracted from them, co-exist and are interrelated with each other in the mental lexicon. To put this another way, many lexical items are considered to show polysemy to a greater or lesser extent.

The second thesis is that semantic structure is conventionalised conceptual structure. It is assumed in Space Grammar that a semantic representation associated with a lexical item, which Langacker (1982) refers to as 'predicate,' is characterised in terms of one or more cognitive domains, which are basic or abstract. According to Langacker (1982), a basic domain is defined by virtue of its cognitive basicness, assumed to include, for example, time, physical space, sensory domains such as colour, taste and pitch, and emotive domains. It is also assumed that most domains constitute abstract ones and that they are created by cognitive processing from the elements closely related to basic domains. Moreover, Langacker introduces the notion of functional assembly, which comprises a vast amount of knowledge-structure built up as a consequence of interacting with the world outside, and claims that any functional assembly can function as an abstract domain. Here, 'predicate' and 'domain' correspond to semantic structure and conceptual structure, respectively, and Space Grammar holds that a predicate can be represented in a domain employing the theoretical concepts of Trajector (TR) and Landmark (LM). TR is the most salient, highlighted entity in a scene and LM is the background needed

to highlight the existence of TR. In Space Grammar, it is postulated that the relationship between TR and LM enables us to capture a semantic structure associated with a lexical item, or a 'predicate,' within the conceptual structure, or a 'domain.' The thesis that semantic structure is conventionalised conceptual structure means that semantic structure constitutes a part of conceptual structure that is arranged for purposes of linguistic encapsulation.

The third thesis pertains to the meaningfulness of closed-class elements. Space Grammar posits that most grammatical elements have their own semantic structures and their semantics contribute greatly to the overall expressions in which they appear.

The fourth thesis is that lexicon and grammar constitute a continuum. In his theory, Langacker (1982) maintains that both lexicon and grammar comprise bipolar symbolic units consisting of semantic and phonological poles, and that they form a continuum.

2.1.1.2. Lindner's (1981) approach to VPCs

It has been impossible to address the semantics of VPCs under the received view. To illustrate, consider the following examples:

(1) a. The cat climbed *up* the tree
b. Prices shot/went *up*
c. I picked *up* some French on my trip
d. He made/came *up* with a story
e. This project will take *up* three hours (from Lindner 1981)

The examples from (1a) to (1e) inclusive appear to be related to different senses of *up* as follows: In (1a), the sense associated with *up* combines with the one associated with *climb* to give rise to a physically upward motion. On the other hand, in (1b), *prices* do not *shoot up* physically; they are seen to *shoot up* along the vertical scale metaphorically. The sense of *up* encoded in (1c) refers to the acquisition of *some French* and the one included in (1d) concerns the creation of a *story*. The last example also seems to involve a different kind of sense, namely

the consumption of time: *three hours*.

It has been long considered in the generative tradition that grammatical markers such as *up* are meaningless and that they make no semantic contribution to constructions such as VPCs in which they occur; as a result, it has been quite difficult to provide a proper explanation for the seemingly different senses designated by each *up* in (1). In order to offer a better characterisation of the phenomena described in (1), Lindner attempts to demonstrate, drawing upon the thesis of Space Grammar explained in the previous subsection, that spatial particles such as *out* and *up* in VPCs have rich internal structures on their own and that their semantics contribute to the overall constructions significantly.

Firstly, let us consider the analysis of the semantic structure of the spatial particle *out*. On the basis of the first thesis described in Subsection 2.1.1.1 in which the specific meanings associated with a lexical item and the generalisations, or 'schemas', extracted from them, co-exist and are interrelated to each other in the mental lexicon, Lindner extracts three subschemas, OUT-1, Reflexive OUT (OUT-2) and OUT-3, and identified the specific meanings associated with each subschema depending on four main aspects:

(i) The kind of TR,

(ii) the kind of LM,

(iii) the relationship between the TR and the LM, and

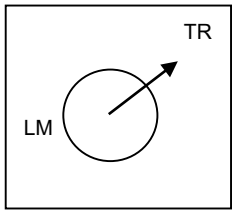
(iv) the domain in which both the TR and the LM are defined.

To illustrate, let us have a brief look at each subschema and its specific meanings.

[Subschema 1: OUT-1]

Lindner (1981) regards OUT-1 as the prototypical subschema and presents various kinds of specific meanings associated with it. To illustrate, consider the following examples:

(2) She went out (spatial domain)
(3) The news leaked out; someone leaked it out (non-spatial domain)



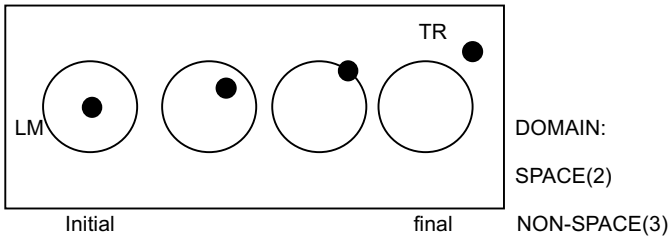


Figure 2.1A Figure 2.1B (from Lindner 1982)

Examples (2) and (3) exemplify a wide variety of specific meanings associated with OUT-1 and each meaning is characterised in the spatial and in the non-spatial domain, respectively. OUT-1 is diagrammed in Figures 2.1A and 2.1B. In (2) *she* is regarded as the TR and the place in which she is located, that is, her room, is seen as the LM. On the other hand, while in (3) *the news* is considered to be the TR, the LM designates a region of which the state is private, hidden, invisible, inaudible, unknown or potential. Lindner claims that OUT-1 encodes a path out of the LM as shown by an arrow in Figure 2.1A and by the successive points in Figure 2.1B.

[Subschema 2: Reflexive OUT: OUT-2]

According to Lindner (1981), OUT-2 can be characterised as encoding the change of the size of the TR from the initial boundary interpreted as the LM to the final one that is greater than the initial form. To capture the notion of this subschema, consider the following examples:

(4) Roll out the cookie dough (spatial domain)
(5) The company branched out (non-spatial domain)

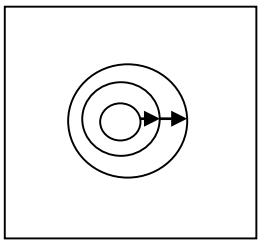


Figure 2.2A

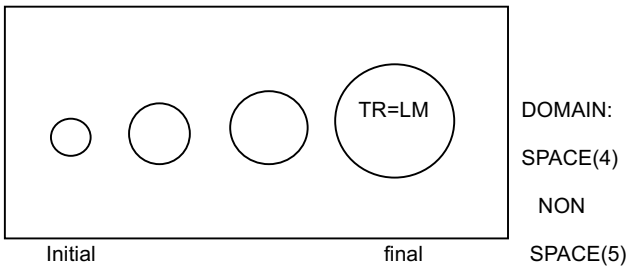


Figure 2.2B (from Lindner 1982)

Examples (4) and (5) represent some of the examples of specific meanings associated with OUT-2 and each meaning is defined in terms of the spatial and non-spatial domains, respectively. OUT-2 is diagrammed in Figures 2.2A and 2.2B. Here, the TR and the LM are considered to be the same object; thus, in (4), *the cookie dough* that serves as both the TR and the LM expands beyond its initial boundary, while (5) encodes the metaphorical expansion of *the company*.

[Subschema 3: OUT-3]

Lindner (1981) defines OUT-3 as the subschema indicating the movement of the TR away from an LM interpreted as an origin, a centre or a source. To have a brief look at this subschema, consider the following examples:

(6) They set out/started out for Alaska (spatial domain)
(7) The bells rang out (non-spatial domain)

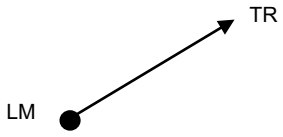


Figure 2.3

In (6), it is suggested that the TR, *they*, moves away from the LM, the origin; that is, the place considered to be the starting point, towards the destination, Alaska. On the other hand, in (7), it is implied that the TR, the sound of the bells, moves away from the LM, the source, which is

the bells themselves. Although the movement of the sound of the bells is invisible, it is considered that they occur in a metaphorical way.[1]

In the same way, Lindner attempts to demonstrate that the semantics of *up* are also organised systematically. As with *out*, she posits two subschemas for *up*: Vertical UP (UP-1) and Goal-Oriented UP (UP-2). To illustrate, let us have a brief look at each subschema and its specific meanings.

[Subschema 1: Vertical UP (UP-1)]

This subschema is regarded as the prototypical one defined by virtue of the oriented physical or non-physical space. To illustrate, consider the following examples:

(8) The rocket shot (straight) up (spatial domain)
(9) Don't bring up that topic anymore (non-spatial domain)

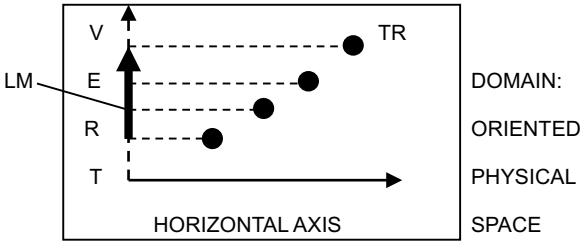


Figure 2.4

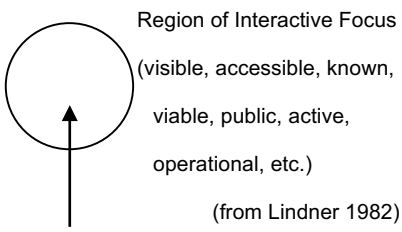


Figure 2.5

Some of the examples of specific meanings associated with UP-1 are illustrated in (8) and (9), which correspond to Figures 2.4 and 2.5, respectively. In (8), the TR, *the rocket*, is seen as occupying a continuous series of points in the upward direction, as shown in Figure 2.4. The LM here is considered to be the projection of the path traced by the TR along the vertical axis, as shown by a bold arrow in Figure 2.4. The specific meaning referred to by (9) is defined in terms of 'region of interactive focus,' the inside of which serves as indicating a state of being

[1] As Morgan (1997) noted, from the perspective of physics, it is also possible to assume that these movements actually occur on the microscopic level, such as photons.

visible, accessible, known, viable, public, active or operational, as illustrated in Figure 2.5. In (9), the TR, *that topic*, is viewed as entering this region and, as a result, it becomes accessible to the viewer; in this case, the interlocutor.

[Subschema 2: Goal-Oriented UP (UP-2)]

This subschema is considered to include more heterogeneous variants than are the other subschemas discussed thus far. Unlike UP-1, UP-2 is characterised in respect of the non-oriented physical or non-physical space. To grasp the notion of Goal-Oriented UP, consider the following examples:

(10) He walked up and said hello (spatial domain)
(11) He bent up/doubled up in pain (spatial domain: reflexive version)
(12) He ate the sandwich up (non-spatial domain: completive version)

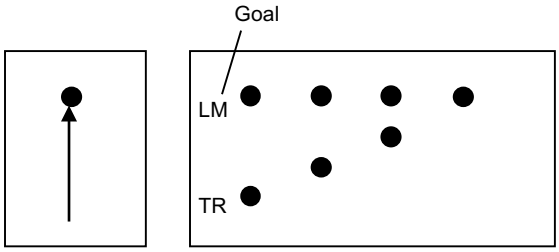


Figure 2.6

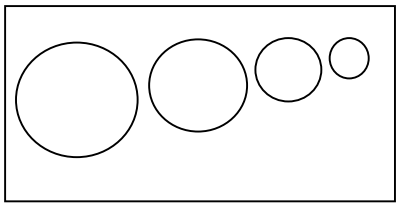


Figure 2.7

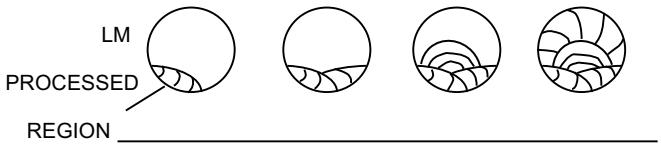


Figure 2.8

The sentences from (10) to (12) inclusive are characteristic examples associated with UP-2. Each example is diagrammed in Figures 2.6, 2.7 and 2.8, respectively. In (10), the TR, *he*, is considered to occupy a continuous series of points in order to connect finally with the LM (possibly a friend in this case), as illustrated in Figure 2.6. In this example, the movement is

not limited to the upward motion. In (11), as in the case of Reflexive OUT, the TR and LM are seen as the same object, and their final compacted form (shown in Figure 2.7) is analogous to the final relationship between two people diagrammed in Figure 2.6. In (12), an abstract object called the 'processed region' is assumed, which is occupying the realm designated by the LM little by little, and is continuing to occupy it until the region and the LM overlap completely with each other. This process can be seen as goal-oriented, and therefore subsumed under Goal-Oriented UP.

2.1.1.3. Problems

While Lindner's (1981) analysis is worthwhile in the sense that it contributes to a deeper understanding of the complex mechanisms of VPCs, particularly of the important roles played by spatial particles, and provides an elegant way of accounting for the semantics of VPCs in much more detail than previously, three main problems need to be discussed.

Firstly, it is not certain whether her analysis reflects the psychological reality of language users. While the explanation seems to be plausible, there is no clear evidence to validate its plausibility. For example, with regard to the spatial particle *out*, Lindner proposes that, in addition to the super-schema subsuming everything, there are three subschemas and a considerable number of instantiations. Although she acknowledges that the specification may vary depending on individuals, Lindner provides no evidence to support that this is the case in the mind of language users. As Sandra and Rice (1995) pointed out, it is more likely that Lindner's analysis is based on introspections, not just intuitions; thus, at least part of her analysis seems subjective, leading to the proliferation of the senses residing in the semantic networks against the psychological reality of the minds of language users. Let us take another example. While theoretical constructs such as the processed region employed to account for completive UP and the region of interactive focus utilised to characterise Vertical UP in the nonspatial domain seem useful and apparently function as tools to offer elegant explanations

for each specific meaning, there is no evidence to prove whether such accounts reflect the psychological reality of language users. It is possible to consider that such constructs may simply be artefacts created from Lindner's introspection.

Secondly, there appear to be some limitations to the framework on which Linder based her work. While Space Grammar is beneficial to the extent that its assumptions enable us to cover a wide variety of linguistic phenomena that have failed to have been addressed within the generative tradition, it has limitations in some respects.

The first limitation is due to the lack of reference to the latest research results of psychology. For example, while it is assumed in Space Grammar that semantic structure is conventionalised conceptual structure, this may not be the case according to the latest research results in psychology. Recently, the mechanisms that are actually functioning in the mind when producing and interpreting language have been increasingly revealed, and there appears to be a clearer distinction than expected between the linguistic system, which is amodal and unique to language, and the conceptual system, which is multimodal (for example, visual, auditory, olfactory, gustatory and somatosensory) and includes everything concerning cognition (e.g., Barsalou et al. 2008). In the light of these latest research results, for example, Langacker's (1982) assumption regarding domains may be misleading in the sense that they do not reflect the reality in the mind.

The second limitation entails the lack of methodology to validate the schemas and the specific meanings identified by the researcher. While Space Grammar states that the semantics of many lexical items can be characterised in terms of deploying specific meanings and the schemas extracted from them, it fails to offer any criteria regarding which specific meaning and which schema should be stored in the minds of language users. To put this another way, there is no way to prove whether it is plausible to posit two subschemas for *up* under the theoretical framework of Space Grammar, for example. As a result, it is difficult to judge whether the semantic network models proposed by Lindner (1981) are valid or not.

Thirdly, Lindner's (1981) analysis is insufficient in terms of making the distinction between the information designated by spatial particles and the one provided by other sources such as verbs, sentential contexts or background knowledge. It seems that the information that is able to be supplemented by the other contexts also influences the semantics of VPCs. To illustrate, consider the following examples:

(13) a. The diver came up for air
b. The fire flare up
c. Stand up
d. My foot swelled up

Lindner classifies Vertical UP defined in terms of the spatial domain into a number of specific meanings. The sentences from (13a) to (13d) inclusive are all examples of these meanings. While Lindner regards each sense associated with *up* in (13) as belonging to a different group, it is possible to assume that the senses associated with *up* are the same and that the seemingly different meanings occur due to the semantics of the verbs with which *up* co-occurs. Let us consider another example. Whereas Lindner argues that Reflexive OUT (OUT-2) is defined in respect of the change of size of the TR over time, it seems more natural to assume that the change over time is ascribed to the verbs with which *out* co-occurs. Such interpretations are the most prominent in examples such as *Lengthen out your stride* or *The road widened out ahead of us*, because verbs such as *lengthen* or *widen* already include the meanings that Lindner believes are attributed to *out*; that is to say, the change of size of the TR over time.

Overall, the characterisation of the semantics of spatial particles provided by Lindner is based on this kind of analysis, failing to separate the semantic properties of spatial particles from those of other sources such as verbs. The reason why this kind of inappropriate analysis is made seems to be the lack of perspective of the constructional approach; that is, Lindner places too much emphasis on the semantic properties of spatial particles, thus failing to take into account the semantic aspects of the other elements needed to interpret the overall meanings

of VPCs. As far as the semantics of constructions such as VPCs are concerned, it is essential to deal with the semantic properties of all the elements relating to such constructions equally. In addition, it is necessary to consider that the semantic properties of all these elements are not always simply added to produce the overall meaning; in some cases, these semantic properties interact with each other to give rise to meanings that are not expected from each; in other cases, they interact not only with each other, but also with other sources such as a sentential, discourse or cultural context to produce meanings that are entirely new. With regard to the semantic analysis of constructions such as VPCs, it is important to clarify which semantic aspect can be ascribed to which element in such constructions, and when it is difficult to do so, how such meanings are produced, and which factors affect the processes. Although Lindner's analysis seems plausible, she fails to provide this kind of clarification, thus creating her insufficient semantic network models.

2.1.2. Metaphorical approach ~Morgan (1997)

In this section, I provide an overview of Morgan's (1997) work. Employing Lindner's (1981) analysis as her starting point, Morgan attempts to offer a more systematic explanation for the semantics of VPCs by focusing on non-literal ones with the spatial particle *out* in relation to both widely known and newly recognised conceptual metaphors. Subsection 2.1.2.1 provides a brief examination of the theoretical framework of Conceptual Metaphor Theory. Subsection 2.1.2.2 focuses on Morgan's metaphorical approach. Subsection 2.1.2.3 identifies the problems with her approach.

2.1.2.1. Theoretical orientation~ Conceptual Metaphor Theory

In order to enhance the semantic systematicity of Lindner's (1981) characterisation, Morgan (1997) draws upon the theoretical framework of Conceptual Metaphor Theory, originally proposed by Lakoff and Johnson (1980a) and developed by many other scholars (e.g., Grady

1997). Conceptual Metaphor Theory is one of the most ground-breaking theories within the field of cognitive linguistics and has had a tremendous influence on the analyses of a wide variety of linguistic phenomena since its genesis. I will now provide a brief overview of this theory.

Firstly, this theory maintains that metaphor is a useful tool for a better understanding of not only poetic or rhetorical language, but also of everyday language. Secondly, this theory holds that our language takes on metaphorical properties because of the metaphorical nature of the conceptual system. In general, conceptual metaphors are employed when it is necessary to characterise abstract entities such as *love* or *ideas*. Conceptual Metaphor Theory assumes that, while it is difficult to capture the concepts of such abstract entities in isolation, this becomes possible by positing more concrete entities such as *journeys* or *commodities*. To illustrate, consider the following examples:

(1) Metaphor: LOVE IS A JOURNEY[2]

(2) a. Look how far we've come
b. We're at a crossroads
c. We'll just have to go separate ways
d. We can't turn back now
e. I don't think this relationship is going anywhere
f. Where are we?
g. We're stuck
h. It's been a long, bumpy street
j. This relationship is a dead-end street
k. We're just spinning our wheels
l. Our marriage is on the rocks
m. This relationship is foundering (Lakoff & Johnson 1980)

[2] The reason why small capitals are used here is because metaphors are conceptual in nature. In the field of cognitive linguistics, it is common practice for entities residing in the conceptual system to be indicated by small capitals.

Table 2.1. LOVE IS A JOURNEY

SOURCE (journey)	TARGET (love)
travellers	lovers
vehicle	love relationship
journey	events in the relationship
distance covered	progress made
obstacles encountered	difficulties experienced
decisions about direction	choices about what to do
destination of the journey	goals of the relationship

According to Lakoff and Johnson, it is possible to characterise abstract entities such as *love* by virtue of more concrete entities such as *a journey*, as exemplified in (2). The metaphor applied here is LOVE IS A JOURNEY, in which the entity on the left-hand side, LOVE in this example, serves as the target domain (TD) and the one on the right-hand side, here A JOURNEY, functions as a source domain (SD). Conceptual Metaphor Theory holds that the TD is the conceptual domain that we attempt to characterise and the SD is the conceptual domain from which we elicit metaphors. As is also assumed that conceptual metaphors are grounded experientially, the SD is posited to consist of structures that are sensorimotor in nature. The mechanism assumed in Conceptual Metaphor Theory for this metaphor is as follows: The more concrete entity A JOURNEY, here defined as the SD, can be considered to include a number of attributes, as shown in Table 2.1; for example, *travellers*, *vehicle*, *distance covered* and so forth. In order to characterise the more abstract entity *love*, here interpreted as the TD. For example, the attribute *travellers* in the SD is mapped onto the corresponding one *lovers* in the TD; furthermore, the attribute *distance covered* in the SD is mapped onto the corresponding one *progress made* in the TD. As a result, these mappings make the understanding of sentences such as (2a) possible. Conceptual Metaphor Theory maintains that, as this type of

correspondence is stored in the long-term memory, it is stable in nature. In addition, it holds that the existence of closely related metaphors, as evidenced in (2), implies that many metaphors employ a SD in a coherent and systematic way.

2.1.2.2. Morgan's (1997) approach to VPCs

Using Lindner's (1981) approach as her starting point, Morgan offers an alternative explanation for the semantics of VPCs including *out* employing various kinds of conceptual metaphors. While Lindner's (1981) analysis is useful, it fails to make a clear distinction between the literal and the non-literal meanings associated with VPCs. To illustrate, consider the following examples:

(3) a. This tape will pick up the lint
b. My radio picked up the signal
c. I picked up some French on my trip
d. The car picked up speed
e. Mary will pick John up at 8:00 (from Lindner 1981)

According to Lindner, the *ups* in all the examples illustrated from (3a) to (3e) inclusive are classified as having the same specific meaning to which she refers as Path to Level of Activity or Storage, the implication of which is that the picking up of something from its resting place leads to the object entering a region near an LM such as *Mary* in (3e); that is, under the direct influence of the LM. While all the meanings exemplified in (3) seem to share this specific meaning, it is possible to interpret (3a) and (3e) literally, whereas (3b)-(3d) can be interpreted non-literally. That is to say, what is picked up in (3a) and (3e) is a physical object such as *the lint* or a person such as *John*; on the other hand, in (3b)-(3d), the things picked up by the LMs are not physical objects: *the signal*, *some French* and *speed*. Picking up a physical object seems to be completely different from picking up an abstract one. It is possible to consider that, when picking up an abstract object, some additional mechanism might be in operation. In order to

clarify such a mechanism, Morgan attempts to demonstrate that conceptual metaphors enable us to make a clear distinction between the literal and the non-literal meanings associated with VPCs.

Let us now move on to Morgan's analysis of VPCs. The first example, *pick out*, is the VPC classified as an extension of OUT-1 in the nonspatial domain in Lindner's analysis. While Lindner provides a characterisation for this kind of VPC with regard to a TR's displacement from the LM considered as a set of the same kinds of objects or persons (here, the TR is *the radio signal* and the LM is a set of radio signals), Morgan's analysis suggests that a metaphor called CHOOSING IS GRASPING AND TAKING (M_v)[3] is entailed in the verb *pick* and a metaphor called A "SET" IS A CONTAINER (M_p)[4] is carried by the particle *out*; as a result, both metaphors M_v and M_p are inherited by the overall VPC *pick out*, giving rise to the conventional interpretation associated with that VPC. Concerning the mapping that took place in this VPC, see Table 2.2.

For the VPC *pick out*, it is assumed that some elements in the source domain of the verb *pick* (SD_v)[5] such as *manipulated objects*, *similar objects* and *act of plucking an object out of a group* are mapped onto the corresponding ones in the target domain (TD_v),[6] such as *chosen objects*, *similar objects* and *act of choosing*. As a result of these mappings, the further entailments in the SD_v such as (i) and (iii) can be mapped onto the corresponding ones in the TD_v, such as (ii) and (iv), respectively. Here, the collection of similar objects from which an object is singled out is considered to be a container due to the metaphor carried by the particle *out*. Thus, it becomes possible to understand a sentence such as (4a). According to Conceptual Metaphor Theory, conceptual metaphors are grounded experientially; therefore, it can be said

[3] M_v stands for the metaphor entailed in a verb.

[4] M_p stands for the metaphor carried by a particle.

[5] SD_v stands for the source domain of a verb.

[6] TD_v stands for the target domain of a verb.

that all the elements in the SD as diagrammed in Table 2.2 are produced via the direct, recurring experiences of language users in the world outside, and that all the corresponding ones in the TD are always characterised in respect of these embodied attributes. Moreover, as mentioned in the previous subsection, it is assumed that such correspondences are stored in the long-term memory.

(4) a. Can you pick out the radio signal?
b. Metaphorical extension of verb: CHOOSING IS GRASPING AND TAKING
c. Metaphorical extension of particle: A "SET" IS A CONTAINER

Table 2.2. *pick out*

SOURCE (object manipulation)	TARGET (choice)
manipulated object	chosen object
similar objects	similar objects
act of plucking an object out of a group	act of choosing
(i) Some items are regularly found co-located with a collection of similar objects (a set).	(ii) When one chooses, one is often choosing from amongst a collection of similar objects.
(iii)The act of physically grasping and removing an object causes it to be singled out from this collection	(iv) When something is chosen, it is singled out from this collection.

The second example *make out* is the VPC characterised as a variant of OUT-1, Change from Hiddenness to Accessibility in Lindner's analysis. While Lindner offers an explanation for this type of VPC with regard to a TR's path out of the LM designating a region of which state is hidden (here, the TR is considered to be a proposition *who is standing over there*), it is seen in Morgan's (1997) analysis that a metaphor named REASONING IS CONSTRUCTION (M_v) is involved in the verb *make* and a metaphor called A FIELD OF VIEW IS A CONTAINER

(M_p) is included in the particle *out*; as a result, the overall VPC *make out* inherits both metaphors M_v and M_p to create a new metaphor called REASONING IS VISIBILITY (M_{vpc})[7], giving rise to the conventional meaning associated with that VPC, as diagrammed in Figure 2.9. With regard to the mapping occurring in this VPC, see Table 2.3.

(5) a. Can you make out who is standing over there?
b. Metaphorical extension of verb: REASONING IS CONSTRUCTION
c. Metaphorical extension of particle: A FIELD OF VIEW IS A CONTAINER
d. SD knowledge: something that is inside a container is prototypically hidden, and something that is hidden is not visible.

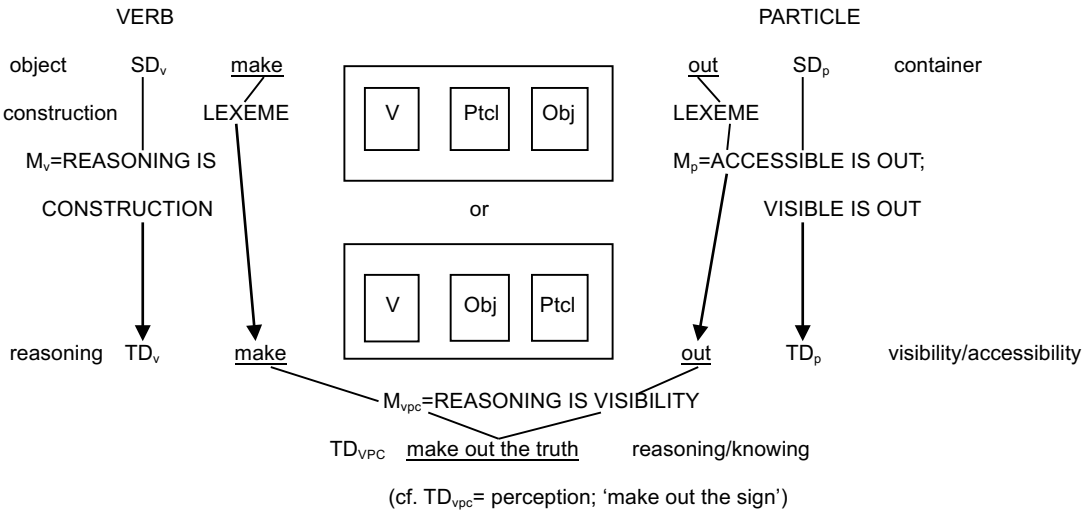


Figure 2.9. make out the truth[8]

[7] M_{vpc} stands for the metaphor created in a VPC due to the conflation of two metaphors inherited from the verb and the particle.

[8] The abbreviations used in this figure are as follows: SD_v=source domain of a verb, TD_v=target domain of a verb, SD_p=source domain of a particle, TD_p=target domain of a particle, TD_{vpc}=target domain of a VPC, M_v=metaphor of a verb, M_p=metaphor of a particle, M_{vpc}=metaphor of a VPC, V=verb, Ptcl=particle, Obj=object. Concerning the squares in the middle of this figure, they represent that both orders (Verb+Particle+Object, Verb+Object+Particle) are possible for *make out*.

Table 2.3. make out

SOURCE (object manipulation)	TARGET (perception)
constructed object	percept
parts of the constructed object	parts of the percept
act of constructing an object	act of perception
container	field of vision
boundary of container	virtual boundary of the field of vision
(i) One way to acquire or possess an object is to make it (assembling it from disparate pieces).	(ii) The parts of a percept may be perceived, as well as the percept in its entirety. Sometimes, in order to perceive something, we must look for its pieces consciously, and make inferences from what we can perceive.

For the VPC *make out,* it is postulated that some attributes such as *constructed objects*, *parts of the constructed object* and *act of constructing an object* in the source domain of the verb *make* (SD_v) are mapped onto the corresponding ones such as *percept*, *parts of the percept* and *act of perception* in the corresponding target domain (TD_v), respectively. Furthermore, some elements such as *container* and *boundary of container* in the source domain of the particle *out* (SD_p) are mapped onto the corresponding ones such as *field of vision* and *virtual boundary of the field of vision* in the corresponding target domain (TD_p), respectively. As a result of these mappings, the further entailment in the SD_v such as (i) can be mapped onto the corresponding one in the TD_v such as (ii), respectively. With the knowledge implied in the SD_p shown in (5d), in addition to the mappings mentioned above, it becomes possible to understand a sentence such as (5a).

The third example *lengthen out* is the VPC classified as Reflexive OUT (OUT-2) in Lindner's analysis. While Lindner characterises this type of VPC in terms of the change of size of the TR (*your stride*) from the initial boundary interpreted as the LM (here, *your stride*, the same object as the TR) to the final one greater than the initial form, Morgan's (1997) analysis posits that, while there is no metaphor in the verb *lengthen*, a metaphor called A PREVIOUS BOUNDARY IS A CONTAINER (M_p) is carried by the particle *out*; as a result, the overall VPC *lengthen out* inherits M_p to produce the conventional interpretation associated with that VPC, as diagrammed in Figure 2.10. Concerning the mapping carried out in this VPC, see Table 2.4.

(6) a. Lengthen out your stride

b. Metaphorical extension of particle: A PREVIOUS BOUNDARY IS A CONTAINER

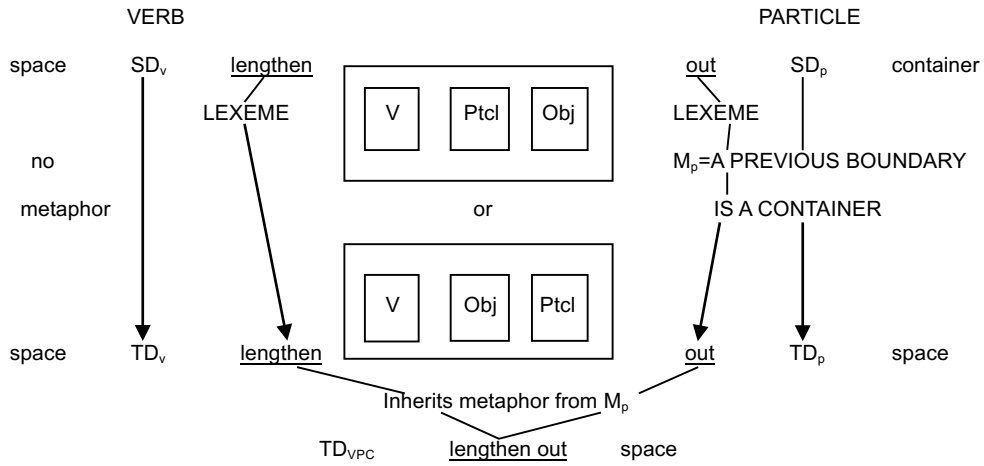


Figure 2.10. lengthen out

Table 2.4. Mapping of a PREVIOUS BOUNDARY IS A CONTAINER

SOURCE	TARGET
container	prior location/extent
boundary of container	virtual boundary
successive containers	successive locations/extents

For the VPC *lengthen out*, it is assumed that some attributes such as *container*, *boundary of container* and *successive containers* in the source domain of the particle *out* (SD_p) are mapped onto corresponding ones such as *prior location/extent*, *virtual boundary* and *successive locations/extents* in the corresponding target domain (TD_p); as a result, it becomes possible to understand a sentence such as (6a).

The fourth example, *give out*, is the VPC exemplifying a subschema called OUT-3 in Lindner's analysis. While Lindner explains this type of VPC by virtue of a TR's movement away from an LM interpreted as a source (here, the TR is *lots of light* and the LM is *that candle*), it is understood in Morgan's analysis that a metaphor called PROPERTIES ARE OBJECTS (M_v) is carried by the verb *give* and a metaphor called A SOURCE IS A CONTAINER(M_p) is entailed in the particle *out*; thus, both metaphors M_v and M_p are inherited by the overall VPC *give out*, producing the conventional meaning associated with that VPC. With regard to the mapping, see Table 2.5.

For the VPC *give out*, it is understood that some elements such as *object* (thing contained) and *act of moving an object* in the source domain of the verb *give* (SD_v) are mapped onto the corresponding ones such as *effect* (emitted from source) and *act of production* in the corresponding target domain (TD_v); furthermore, an attribute such as *container* in the source domain for the particle *out* (SD_p) is mapped onto the corresponding one such as *source* in the corresponding target domain (TD_p). As a result of these mappings, further entailments such as (i) and (ii) in the SD can be mapped onto the corresponding ones such as (iii) and (iv) in the TD; thus, it becomes possible to understand a sentence such as (7a).

(7) a. That candle gives out lots of light
b. Metaphorical extension via the verb: PROPERTIES ARE OBJECTS (POSSESSIONS)
c. Metaphorical extension of particle: A SOURCE IS A CONTAINER

Table 2.5. give out

SOURCE (object manipulation)	TARGET (production)
object (thing contained)	"effect" (emitted from source)
container	source
act of moving an object	act of production
(i.e., the production of the "effect" is the movement of the "object" from inside the container/source to outside).	
Entailments:	
(i) Something that is inside a container is prototypically not accessible or visible.	(iii) Something which has not yet been produced is not visible or otherwise accessible to our perception or knowledge.
(ii) The act of moving an object from inside a container to outside makes it accessible or visible and therefore also potentially useful	(iv) The act of producing something makes it accessible or visible and therefore also potentially useful

2.1.2.3. Problems

Whereas Morgan's (1997) analysis seems helpful to the extent that it attempts to supplement Lindner's (1981) study in terms of shedding light on the conceptual metaphors associated with verbs and particles in VPCs, there are some problems to be addressed.

One of the main problems is that it seems difficult to provide a valid characterisation for the meaning extensions of polysemous items solely from the perspective of Conceptual Metaphor Theory. While many researchers, including Morgan (1997), rely on metaphors in order to characterise the meaning extensions of polysemous items such as verbs and spatial

particles, it has been revealed in the field of historical linguistics (e.g., Brinton 1988) that it is metonymy rather than metaphor that plays an important role in their meaning extensions, although metaphor is still one of the crucial factors. According to Morgan, the overall meaning of a given VPC is produced due to the inheritance of metaphors from the verb and particle of which the VPC consists: In some cases, VPCs inherit only one metaphor from either the verbs or particles; in other cases, they inherit two metaphors from both the verbs and particles, sometimes giving rise to new metaphors that are created due to the conflation of those two metaphors. That is to say, Morgan's analysis assumes that each verb and particle has its own metaphor, respectively, and that, if necessary, each metaphor is applied to each verb and/or particle to derive an abstract meaning before the verb and particle combine to produce the overall VPC. However, work on grammaticalisation has revealed that this might not be the case. For example, based on historical evidence, Hopper and Traugott (2003) claims that grammaticalisation, that is, meaning extension, does not occur via only one lexical item. That is, in order for a meaning change to occur, it is necessary for a given lexical item to interact with the other lexical item(s) with which it co-occurs. In addition, the researchers also argue that such meaning extensions are more likely to occur in a highly specific local context.

To illustrate, let us have a brief look at the process of grammaticalisation using the example of the auxiliary *be going to*. According to Hopper and Traugott, the first step in which the change occurs is seen in a highly local context; here, a purposive directional construction with a non-finite complement such as *I am going to marry Bill*, meaning *I am leaving/travelling in order to marry Bill*. In this case, it is possible to infer futurity from purposive intent. To put it another way, leaving/travelling in order to marry Bill means that the marriage will occur in the future. In the next step, a reanalysis occurs from [I am going [to marry Bill]] to [I [am going to] marry Bill] to make the shift from purposive to auxiliary possible and, at the same time, from progressive to immediate future. The reanalysis is identified only when a verb incompatible with a purposive meaning is found behind *be going to*, such as *I am going to go*

to London. From the above observations, Hopper and Traugott conclude that the future meaning of *be going to* was derived from the semanticisation of the dual inferences made by both the later time designated by *go* and the purposive *to*. Concerning the development of the auxiliary *be going to*, see Figure 2.11:

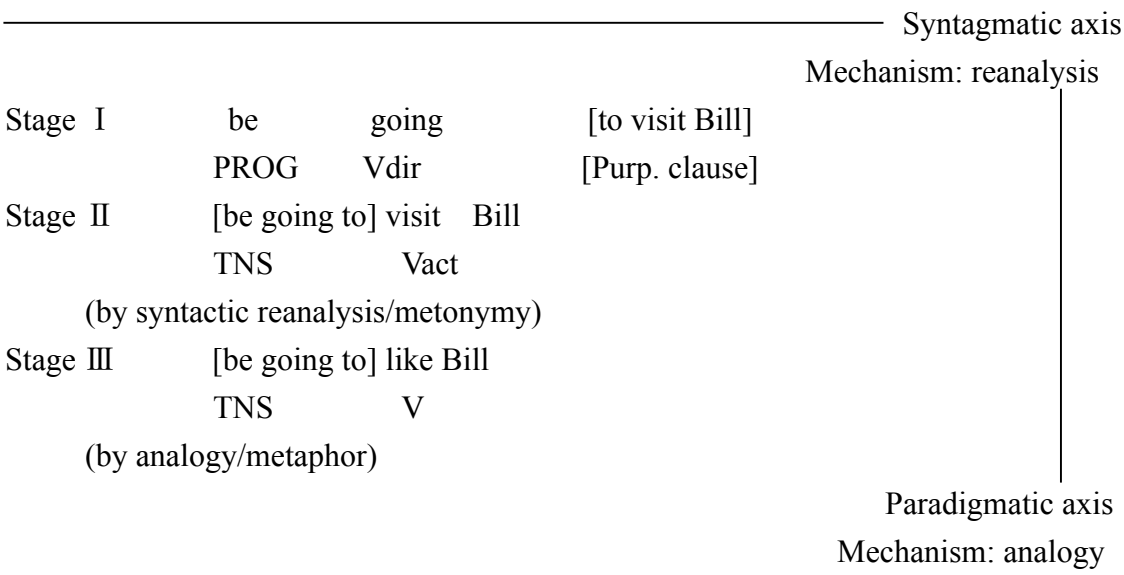


Figure 2.11. The development of the auxiliary *be going to*[9]

(from Hopper & Traugott 2003)

In Figure 2.11, the development of the auxiliary *be going to* is presented in three different stages, as mentioned above. What should be emphasised here is the mechanisms that affect the changes occurring at each stage. The studies of grammaticalisation reveal that, while a change along the syntagmatic axis, that is, a syntactic reanalysis, is defined in terms of metonymy, a change along the paradigmatic axis, which requires some kind of analogy, is characterised by virtue of metaphor. In other words, meaning extensions occur at the interaction of metaphor with metonymy, employing a highly specific local context as the starting point.

Taking the results of work on grammaticalisation into account, Morgan's (1997) analysis is

[9] The abbreviations used in this figure are as follows: PROG=progressive, Vdir=directional verb, Purp=purposive, TNS=tense, Vact=action verb and V=verb.

inaccurate in some respects. Firstly, it seems implausible to assume that an abstract meaning is derived from a concrete one via a metaphor within one lexical item. Historical studies have suggested that meaning extensions do not occur within one lexical item and, considering that verbs and particles are found in constructions such as VPCs, it is more natural to think that their original meanings interact with each other to give rise to the new meanings associated with the overall VPCs. There is also a possibility that the other elements inhabiting the same sentences affect the overall meanings of the VPCs. Secondly, whereas Morgan posits metaphors to explain the meaning extensions of verbs and particles, she does not provide a detailed explanation of the process whereby an abstract meaning is derived from a concrete one. According to the studies on grammaticalisation, such meaning extensions should begin from a very specific local context and continue with the aids of both metaphor and metonymy (see also Hiltunen 1983). In Morgan's analysis, it seems that an abstract meaning appears suddenly through a metaphor; as a result, how the gradual change that is assumed to be made when an abstract meaning is derived from a concrete one occurs, as suggested in the process of grammaticalisation, remains unclear. Although Morgan admits that metonymy affects the meaning extensions of verbs, she fails to offer an adequate explanation for the semantics of VPCs in this regard.

Another problem is that there is a possibility that, when the meaning extension occurs in the mind of a language user, the conceptual metaphors that are assumed to affect it do not exist as yet. According to work on child language acquisition (e.g., Tomasello 1992, Riguel 2014), some VPCs with non-literal meanings begin to be produced at very early stage. For example, Riguel (2014) shows that a monolingual English-speaking girl named Naima produced the VPC *find out* for the first time when she was 1; 7, 25 and *figure out* when she was 2; 11, 14. Since it has been revealed by some experiments (e.g., Caselli et al. 1995) that comprehension always precedes production, it is plausible to assume that children understand the meaning of a lexical item/unit much earlier than they can produce it. To put this another way, it is likely

that Naima began to understand the meanings of the VPCs *find out* or *figure out* much earlier than she produced them. Furthermore, according to work on the acquisition of conceptual metaphors (e.g., Siqueira & Gibbs 2007), many conceptual metaphors are not yet acquired by children when they are 3-4 years of age. In this regard, Johnson (1997) proposes the conflation hypothesis whereby, in the mind of a language user who has not yet acquired conceptual metaphors, two kinds of notions that can serve as a source and as a target domain in the future are conflated because, when children experience a situation for the first time, it is often connected to more than one adult sense. For example, let us consider the conceptual metaphor VISIBLE IS OUT. When children encounter a situation in which someone takes a physical object out of a box, they witness two kinds of sub-situations: The object is taken out and the object becomes visible. According to Johnson, these sub-situations are undifferentiated or conflated until they are completely differentiated and come to serve as a source and as a target domain. Taking these observations into consideration, it is more conceivable that at least earlier meaning extensions occur not through conceptual metaphors but through the correlation between two adjacent sub-situations.

2.1.3. Construction approach ~ Goldberg (2012)

Finally, let us take a brief view of Goldberg's construction approach to VPCs.

2.1.3.1. Theoretical orientation ~ Construction grammar

Goldberg analyses VPCs from the perspective of Construction Grammar (Goldberg 1995; 2006). Construction grammar was proposed by Goldberg (1995) and has been developed by a significant number of scholars since then. Its main argument is that constructions have meanings on their own. To make this point clear, let us consider the following example and diagram:

(1) Chris baked Mary a cake (Goldberg 1995)

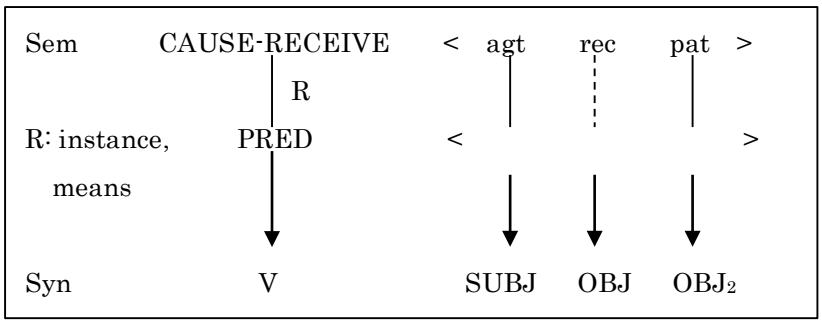


Figure 2.12. Ditransitive Construction (from Goldberg 1995)[10]

According to Goldberg, the ditransitive construction is associated with the semantics X CAUSE Y to RECEIVE Z, which is represented as CAUSE-RECEIVE <agt rec pat> in Figure 2.12. The semantics of the construction are indicated by virtue of a list of roles such as agent, recipient or patient. PRED is a variable that is filled by the verb when a particular verb is integrated into the construction. The syntax is expressed in terms of grammatical relations such as SUBJ, OBJ or OBJ_2. Let us consider how this works by inserting example (1) into the above diagram. The participant roles of the verb *bake* are baker (a person to bake), bakee (a person to receive a baked food) and baked (a food to be baked). When example (1) is applied to the ditransitive construction, these three participant roles are fused with the argument roles of the ditransitive construction; agent, recipient and patient, producing the semantics in (1).

2.1.3.2. Goldberg's approach to VPCs

Goldberg argues that a significant number of VPCs are stored individually in the mental lexicon due to their not-strictly compositional nature. To make this point clear, let us consider the following examples and diagram:

[10] The abbreviations used in this figure are as follows: Sem=Semantics, agt=agent, rec=recipient, pat=patient, PRED=PREDICATE, Syn=Syntax, V=Verb, SUB=SUBJECT, OBJ=OBJECT.

(2) a. He washed off the sand
b. I've scrubbed off the dirt
c. I wiped off the blood and mucus
d. He picked himself off the ground, brushed off the dirt
(3) a. Hall shrugged off the criticism
b. The pirates had laughed off the threat
c. He shook off the thought
d. You just put off the decision (Goldberg 2012)

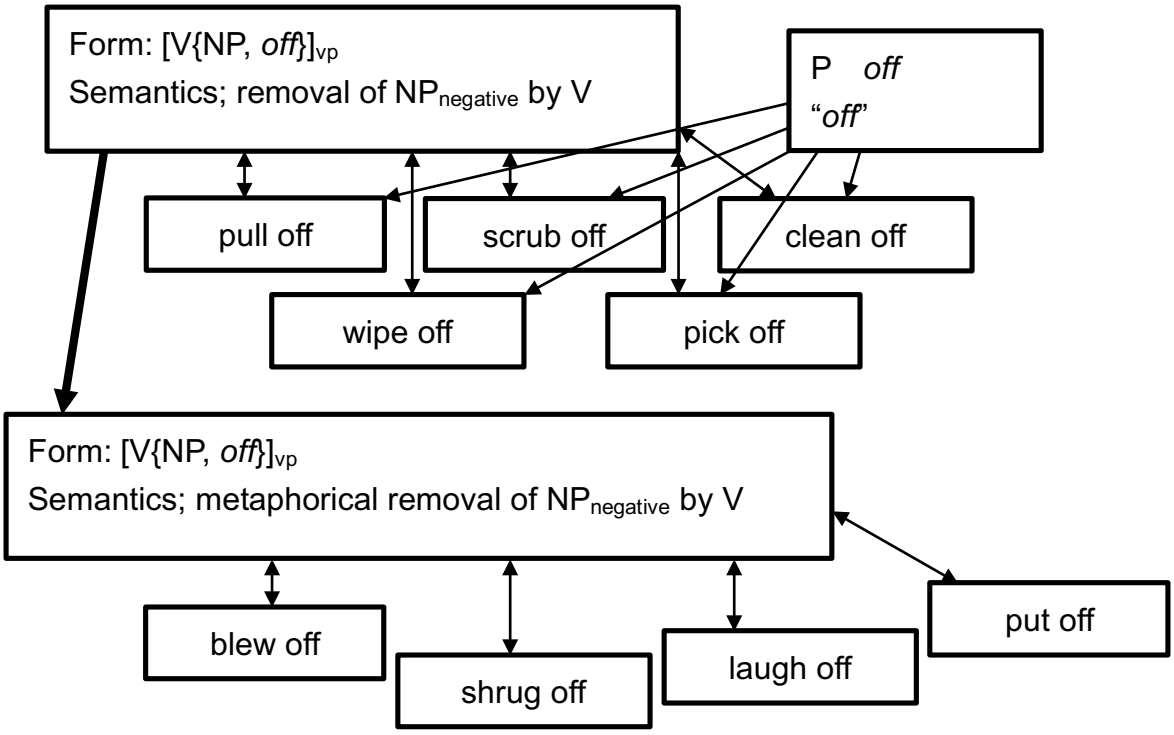


Figure 2.13. The V{NP, off} family of constructions (from Goldberg 2012)

According to Goldberg, VPCs with *off* are represented in the mental lexicon as in Figure 2.13; there are two types of constructions, literal and metaphorical, and each VPC is stored individually and connected to either of these constructions depending on whether its meaning is literal or metaphorical. Her main argument is that the verb-particle construction inherits from the caused-motion construction <V {NP, PP}> as illustrated in the example: *She sneezed the foam off the cappuccino*. Therefore, she assumes that the default word order of the verb-particle

construction is <V NP P>.[11] Furthermore, she attempts to show how different senses associated with a verb, a particle and an entire VPC are connected to each other in the mental lexicon. Let us consider the following examples and diagram:

(4) a. She fixed a sandwich for herself. ("prepare")
b. She fixed a sandwich up for herself.
(5) a. Buy and fix this old house. ("repair")
b. Buy and fix up this old house.
(6) a. # a friend of hers tried to fix her with one of her exes. (intended, "match-make")
b. a friend of hers tried to fix her up with one of her exes.

(Goldberg 2012)

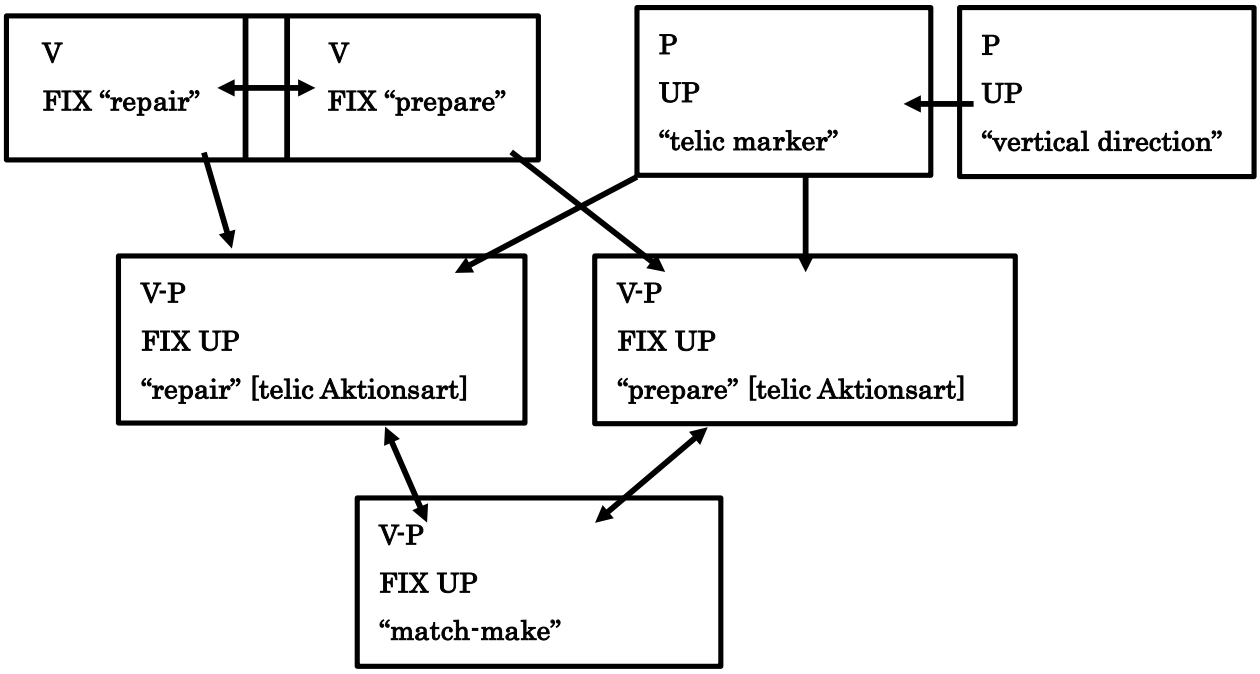


Figure 2.14. A partial network relating *fix up*'s three senses to each other, to the simple verb *fix* and to the particle *up* (from Goldberg 2012)

According to Goldberg, three senses associated with *fix up* are connected to each other, as shown in Figure 2.14. Arrows indicate default inheritance. For example, the VPC FIX UP with

[11] The abbreviations used here are as follows: V=Verb, NP=Noun Phrase, P=Particle, PP=Prepositional Phrase.

the meaning of *repair* [telic Aktionsart][12] inherits from the simple verb FIX with the meaning of *repair* and the spatial particle as a telic marker. On the other hand, bidirectional arrows indicate that two forms mutually motivate each other. In Figure 2.14, the three senses of *fix up* mutually motivate each other.

2.1.3.3. Problems

It seems reasonable to consider that each VPC sharing the same spatial particle is stored in relation to either of the literal or metaphorical constructions. However, Goldberg's approach fails to capture the relationships amongst the multiple senses associated with a given VPC. To put this another way, how each sense is connected to the others is unclear. The same holds for the multiple senses associated with a verb and a spatial particle.

2.2. Previous studies in the field of historical linguistics

2.2.1. Treatment of VPCs in historical linguistics

VPCs have also received significant attention from many historical linguists for decades. In the field of historical linguistics, VPCs have been investigated from a wide variety of perspectives, including relationships with other verbal structures such as complex verbs, illustrated in *have a drink*, VPCs as idioms and collocations,[13] the processes involved in the development of

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[12] The phrase refers to a naturally perfective action.

[13] According to Brinton and Akimoto (1999), idioms can be defined in terms of the following respects: non-compositionality (that is, no constituent of an idiom carries an independent meaning), transformational deficiencies and the lack of substitutability. This follows because the semantics of idioms cannot be inferred from the meanings of their constituents. Like idioms, collocations are groups of lexical items that co-occur repeatedly but, unlike idioms, their meanings can usually be inferred from the meanings of their constituents. Collocations are predictable to a greater or lesser degree. Based on the fact that many idioms are not entirely unanalysable or opaque semantically, Brinton and Akimoto claim that idiomaticity must be recognized as a graded concept. Therefore, it seems reasonable to assume that some VPCs are more idiomatic, and that others are more collocational.

VPCs such as grammaticalisation and idiomatisation, and the historical developments of VPCs. The latter two will be addressed here.

2.2.2. The processes involved in the development of VPCs

As mentioned earlier, a given VPC is associated with a number of meanings in many cases, and it is acknowledged that three types of processes are related to its meaning extension (e.g., Brinton & Akimoto 1999; Ishizaki 2012). The first process is grammaticalisation, whereby a lexical item becomes a fully grammatical item. Concerning VPCs, some scholars (e.g., Brinton 1988; Thim 2012) argue that the spatial particles within VPCs, such as *up* and *out*, came to be associated with aspectual meanings via this process. The second process is lexicalisation, whereby material that could previously only be described via a sentence or phrase develops into lexical items. With regard to VPCs, Hiltunen (1983) claims that lexicalisation is achieved when combinations with metaphorical meanings become part of the vocabulary of the language. The third process is idiomatisation, which identifies the pattern and assigns a new meaning to it that cannot be deduced from the constituents. In general, it is understood as a process of semantic change from a literal to a figurative or metaphorical meaning. This process is also called *metaphorisation* or *solidification* (Nuccorini 1990). As far as VPCs are concerned, it seems plausible to assume that both grammaticalisation and lexicalisation can be specific examples of idiomatisation (Ishizaki 2012).

2.2.3. The historical development of VPCs

Some scholars have focused on the historical development of the structural and semantic aspects of VPCs. In the following sections, I will provide a brief overview of what VPCs looked like in each period.

2.2.3.1. VPCs in Old and Early Middle English

As mentioned earlier, Hiltunen (1983) investigates a wide variety of texts from the Old and Early Middle English periods to clarify how the prefix system fell out of use and phrasal verbs began to become predominant.[14] According to Hiltunen, phrasal verbs in the Old English (OE) period consist of collocations of a verb and phrasal or prepositional adverbs. The collocations of a verb and a phrasal adverb correspond to VPCs.

Phrasal adverbs are those that indicate location or direction (or both), and do not normally appear as prepositions. They include *adun* 'down,' *aweg* 'away,' *forð* 'forth,' *niðer* 'down,' *up*, *ut* 'out' and so on. In OE, the phrasal adverbs occupy four different positions with regard to the verb. They either precede or follow it, with or without intervening elements.

On the other hand, prepositional adverbs (prep. adverb) such as *beforan* 'before' and *æfter* 'after' had both adverbial and prepositional functions in OE. The use of each prep. adverb is different depending on whether its function is adverbial or prepositional. Up(p) has the highest frequency of all the phrasal or prep. adverbs in the material examined by Hiltunen. It is systematically adverbial in OE, except for a few instances of possible prepositional use.

In addition, in OE, many phrasal and prep. adverbs can be used as separable or inseparable verbal prefixes. This follows because the boundaries between phrasal/prep. adverbs and verbal prefixes were blurred in this period. They are summarised in Figure 2.15:

[14] Hiltunen calls VPCs phrasal verbs.

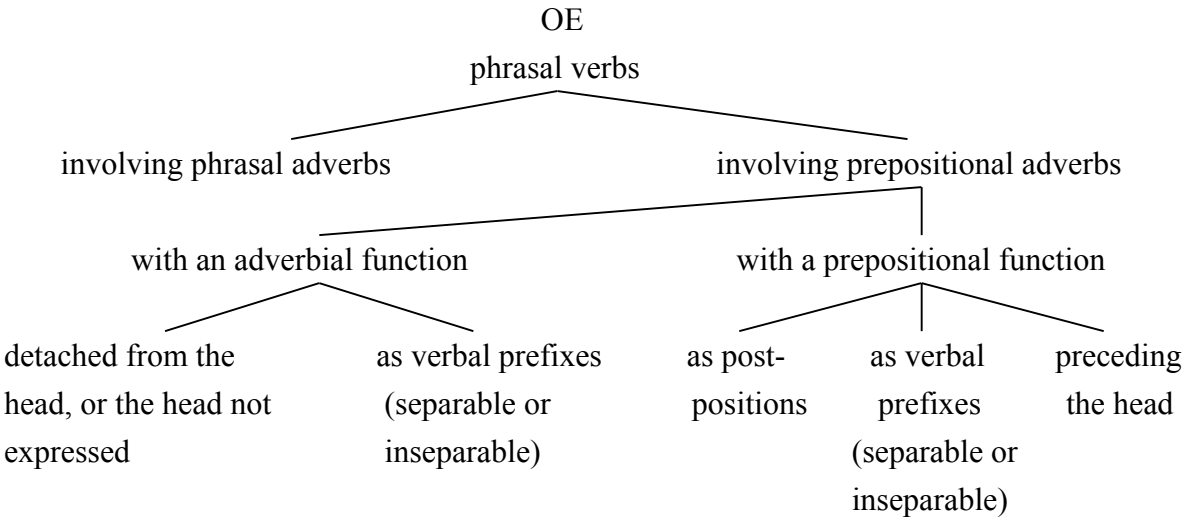

Figure 2.15. Phrasal and prepositional adverbs in OE (from Hiltunen 1983)

As for the semantics of phrasal verbs, Hiltunen claims that there are three types of meanings: literal, metaphorical and idiomatic. In OE and Early Middle English (eME), only the first two are found. According to Hiltunen, literal meanings refer to the combinations in which the members of the group appear in their basic meanings, as in the example *the boy rose up*. On the other hand, metaphorical meanings are closely related to the content that is somehow removed from the literal denotation, but in which the literal meaning is still transparent, as in the example *the sea rose up*. He argues that it is possible to address these two types of meanings from the meaning of the elements separately. In addition, idiomatic meanings have to do with combinations in which the meaning is no longer inferred from the literal meanings of the constituents, as in the example *they put me up*. He claims that this type of meaning needs to be addressed from the construction as a whole.

Furthermore, Hiltunen (1983) argues that the most important of the non-locative meanings is the resultative (or completive) one, which he regards as one of the metaphorical meanings associated with phrasal verbs. In his Early Old English (eOE) material, no example of this meaning being achieved unambiguously via a phrasal adverb was found. In Late Old English

(lOE), a resultative connotation was present.

From his observations, Hiltunen (1983) concludes that the development of the resultative meaning was geared to the syntactic evolution from a (…) V to V (…) a.[15] According to him, when the V (…) a pattern became the standard one, the resultative function of phrasal advs. was also extended. He argues that this is in accordance with the syntactic/semantic growth of the phrasal verbs in eME.

In addition, Hiltunen (1983) points out the possibility that one and the same combination could be used with both literal and metaphorical meanings depending on the context. He claims that it is possible to identify whether the combination is metaphorical by examining the quality of the subject or object. If abstract, the meaning of the phrasal verb is likely to be metaphorical. However, this criterion no longer applies once the combination has established itself as a group with a special content (lexicalisation). Hiltunen attempts to identify the point of lexicalisation of VPCs with metaphorical meanings. He defines the point as the time at which they became part of the vocabulary of the language, or idioms. For example, the phrasal verb *giefan up* 'give up' was examined. According to Hiltunen, this phrasal verb was found six times in total in the last few entries of the Peterborough book (1121-1155), suggesting that it became a lexicalised unit around 1150. A further indication of the establishment of the group is provided by instances in which the head is an abstract noun.

Hiltunen (1983) observes that literal meanings are predominant in both the OE and the eME material, but that there is a tendency towards metaphorical meanings in lOE and an expansion in this direction in eME. He suggests that many examples on either of the directional-resultative or the literal-metaphorical continuums can be found. The differences between OE and eME are summarised in Table 2.6.

[15] According to Hiltunen, 'a' stands for a phrasal adverb and 'V' for a verb.

Table 2.6. The comparison of inseparable prefixes, phrasal adverbs and prepositional adverbs (from Hiltunen 1983)

		OE	eME
Inseparable prefixes	Morphology	prefix + verb	reduction and loss (of some)
	Semantic variants	from literal to opaque	
	Functions	transitivisation effective value intensification descriptive effect	reduction of functions
Phrasal adverbs	Syntax	predominantly a (…) V	predominantly V (…) a
	Semantic variants	literal; sporadically metaphorical	literal; growth of metaphorical meanings
	Function	predominantly adverbial	predominantly adverbial
Prepositional adverbs	1. Function	adverbial	adverbial
	Syntax (and semantic variants)	a. predominantly preverbal	predominantly post verbal
		1. prefix + verb (from literal to opaque)	
		2. pa (…) V (literal)	V (…) pa (literal)
	2. Function	prepositional	prepositional
	Syntax (and semantic variants)	a. preverbal	reduction
		1. prefix + verb (from literal to opaque)	
		2. Type (A) (him (…) to (…) come)(literal)	
		b. post verbal Type (B) (come (…) him (…) to) and (C) (him (…) come (…) to) (literal)	reduction

2.2.3.2. VPCs in fifteenth-century English

Brinton (1988) argues that the post verbal particles such as *up* and *out* are best understood as contributing the notion of 'goal' - in more accurate terminology 'marker of telic Aktionsart' - to an otherwise unbounded activity. According to her, numerous cases in which the particles have both directional and telic meanings exist. She observes that, during the Middle English period, more cases in which the particles have overlapping directional and telic Aktionsart meanings and purely telic meanings appear with a wider variety of verbs. She claims that this situation led to the burgeoning of the idiomatic senses of phrasal verbs.

2.2.3.3. VPCs in eighteenth- and nineteenth-century English

Hiltunen (1999) argues that, by the Early Modern English, the positional variation had been regularised in favour of postposition.

2.2.3.4. The historical development of VPCs

Hiltunen (1983) illustrates the historical development of phrasal verbs, as shown in Figure 2.16:

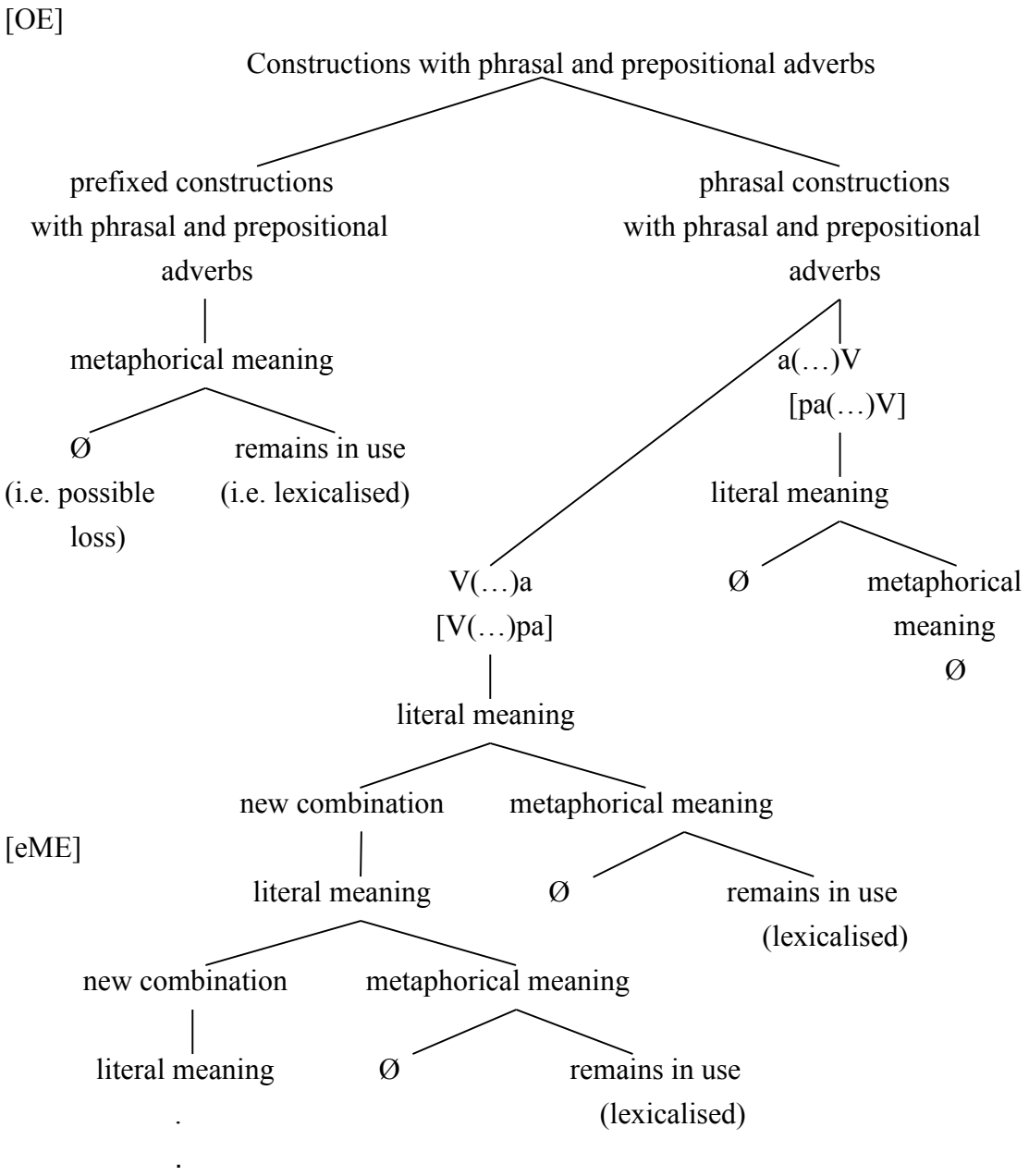

Figure 2.16. The lexical development of the phrasal verb in OE and eME

(from Hiltunen 1983)

On the other hand, Thim (2012) illustrates the historical development of VPCs as shown in the following figure:

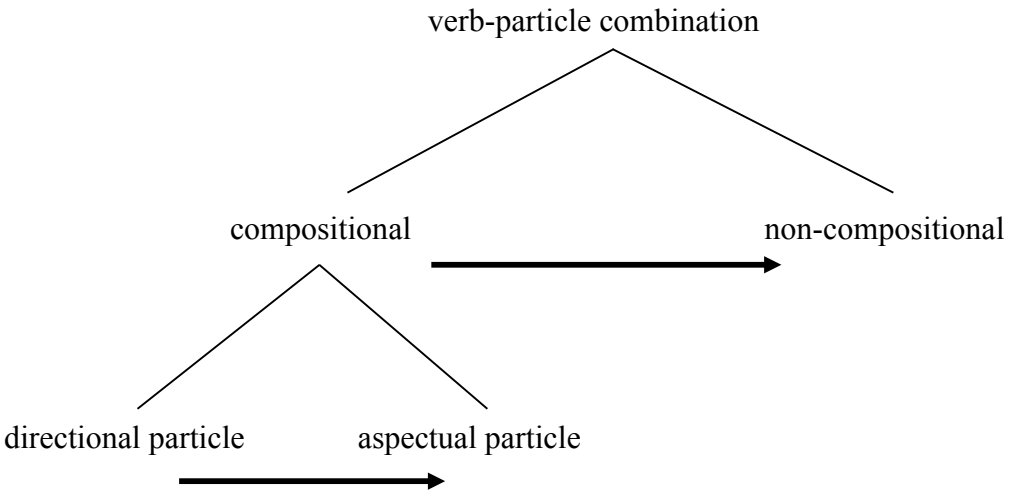

Figure 2.17. Semantic development of VPCs (from Thim 2012)

Thim argues that the threefold semantic categorisation of VPCs in present-day English was formed as a result of two historical processes, namely the metonymical evolution of aspectual meaning observable in the particles on one hand, and the further lexicalisation of individual complex words, with an accompanying increase in semantic non-compositionality on the other. The idiomatic constructions differ from the two preceding groups in that their meaning cannot be inferred from the meaning of their elements; they belong, quite unambiguously, to the lexicon. Thim claims that clear-cut boundaries amongst the three semantic classes are virtually impossible to draw, since the literal, aspectual and idiomatic combinations are often highly contiguous.

Concerning the positioning of the spatial particles, Thim (2012) concludes that this has remained essentially fixed throughout the history of English, and that what appear to be positional shifts of the particles is actually epiphenomenal to the positional changes of other elements of the clause.

2.2.3.5. Problems

While each historical research is beneficial to the extent that it contributes to a better understanding of the evolution of VPCs, there are a number of questions that remain

unaddressed: What kinds of meanings were associated with a VPC in each period? How had those meanings developed historically?

While Hiltunen (1983) attempts to demonstrate how prefixed and phrasal constructions had evolved historically, his model is so abstract that it fails to capture details such as the types of meanings that were associated with each phrasal construction in each period and how they had evolved historically. As for the semantics of phrasal verbs, he claims that there are three types of meanings, namely literal, metaphorical and idiomatic ones. It seems reasonable to assume that these three types of meanings can be posited. However, it can be considered that more detailed categorisation is possible with regard to non-literal meanings.

On the other hand, Thim (2012) proposes only two ways whereby the semantics of VPCs had developed: from compositional to non-compositional and from directional to aspectual. Essentially, his main argument is made on the basis of the historical change of the position of a particle. Therefore, he does not mention the kinds of meanings with which each VPC was associated in each period and how these specific meanings had developed historically.

Finally, although Hiltunen (1983) observes that some of his data are located somewhere between the literal and the metaphorical, leading to a development towards polysemous phrasal verbs, the notion of polysemy is not generally taken into account in the historical approach. That is, a phrasal verb is associated with a number of specific meanings in many cases and, in order to clarify the historical development of the meanings associated with it, it is reasonable to consider how each specific meaning associated with a given phrasal verb had been derived historically. However, none of the research from the perspective of historical linguistics pays attention to this aspect.

2.3. Research in the field of child language acquisition

VPCs have also been addressed by some scholars in the field of child language acquisition. I will provide an overview of the work of Tomasello (1992) and Riguel (2012) in this section.

2.3.1. Tomasello's (1992) analysis

In order to clarify how young monolingual English-speaking children acquire verbs, Tomasello (1992) recorded his daughter, Travis' (T) language production extensively for the first two years of her life. As part of his analysis, Tomasello examines how T's use of VPCs developed. He observes that there are three developmental patterns for VPCs. The first is represented by those VPCs that were always used as a unit. They include *come on*, *come in*, *came out*, *came off*, *get down*, *falling out*, *falling down* and *broken off*. These are often used as a unit in adult language. The second pattern involves those VPCs that began as a unit but then became separated with the object between them. They include *get out*, *get off*, *put in*, *put on*, *turn on*, *eat up*, *ate up*, *lick up* and *push down*. The third pattern consists of those VPCs in which the verb and particle were split from the beginning. They include *get__up, take__out, take__off, put__up, put__down, put__off, turn__off, lick__off, drink__up, drink__down, wipe__off, cover__up, pick__up* and *pull__up*. The development of T's VPCs is summarised in Table 2.7.

Table 2.7. The development of T's VPCs during the 19- to 23-month period

(from Tomasello 1992)

	Pre-19	19-20	20-21	Post-21
Change-of-state verbs				
Get	Get-out __ get-out Get-out__	Get-down Get-off__	Get-down__ Get-out__ Get__off Get__off there Get__up there	Get__out there Get__out__
Come	Come-on	Come-in __come-in		Come-on in__ Came-out__ Came-off__ __came-off__
Put		Put-it in Put-it on Put it in there	Put__on there Putting__in there Put on__	Put__in__ Put__up Put__up there Put__off

				Put__on__ Put__on __put__in__ Put__down Put in__
Take			Take__off Take__out__	Take__off__ Take__out
Turn				Turn on__ Turn__on Turn__off
Broken				__broken off
Activity verbs				
Eat			Eat-it all up__ Eat__all up Eat__up __eat__up	
Push			Push down__ Push__down	
Lick			__lick up__ __lick__up	Lick__off
Ate			__ate it all up __ate__all up Ate__up	
Drink			Drink__up	Drink__down
Wipe			Wipe__off	Wipe__off_ __wipe__off
Cover			Cover__up	Cover up
Fall			__falling-out__	__falling down
Pick				Pick__up
Pull				Pull_up
Clean				__clean__up

As suggested by Tomasello (1992), there is a possibility that the spatial particles in the third pattern, as in the examples *put my toothbrush down* and *wipe this shirt off*, imply the completive meaning from the beginning. In the same way, it is possible to assume that the spatial particles in the second pattern imply the completive meaning after they start to be placed at the end point.

This matter will be addressed in future research.

Furthermore, Tomasello (1992) notes the difference between spatial particles used with change-of-state verbs and those used with activity verbs. That is to say, all the examples of the former retain their major spatial function, whereas several examples of the latter retain little of their spatial meanings, as in *eat up*, *lick up*, *drink up*, *drink down*, and *cover up*.

In addition, Tomasello (1992) recorded the development of each verb and the relevant lexical items such as spatial particles. Among all, the order of the production of each usage of *up* by T is summarised in Table 2.8:

Table 2.8. The order of the production of each usage of *up* by T (from Tomasello 1992)

Parent Use: "Do you want to get up here?"		
Single-Word Use: "Up-here" as request		
months	utterance	meaning
17.20	UP-HERE	wants up on couch
17.20	UP-HERE	commenting as she crawls up on bed
17.22	UP-HERE	trying to get up in car
17.25	UP-HERE	wanting help up into high chair
17.27	MINO…UP-HERE	wanting dog to join her on bed
A18.25	UP-HERE	commenting on her climbing into chair
V18.25	UP-HERE	wants to be lifted so that she can reach lock (four
V18.25	UP-HERE	times)
V19.26	UP-HERE	commenting on her climbing into chair
V19.26	UP-HERE	commenting as she climbs into chair (four times)
		commenting as she climbs in Mama's lap
Use in Combination		
18.05	UP-HERE LAP	Wants up in Mama's lap
18.11	UP 'N' Down	yo yo
18.17	DADDY UP	Dad's in bed, she's on floor
V18.25	UP-HERE DOWN	as she places keys and eraser into tray over her head
19.02	UP-HERE BED	demanding of Mama on bed
19.10	CRAYON UP-HERE	putting it up on counter
19.13	UP STEPS	wants to go up steps

19.17	UP-HERE TREE	wants to be put up in tree
19.21	UP-HERE TREE	wants up in tree
19.21	UP-HERE BED	wants up on bed
19.26	LITTLE STICKERS UP-HERE	she sees them, she's on porch
19.26	UP-HERE SILK	putting silk on couch
19.27	MARIA UP-HERE	she's on the bed, T on floor
A19.27	WEEZER UP-HERE TREE	cat in tree out window (two times)
19.29	CAR UP-HERE	climbing up onto car
20.06	CLEAN THIS UP-HERE	doing it with mop
20.08	UP-HERE THIS FORK	putting it on counter
20.13	UP-HERE ME	she wants up on swing
20.14	BRING THIS WEEZER PILLOW UP-HERE	up into Mama's lap
20.19	DRINK MINE TEA UP	Mama is
20.19	EAT MINE SKIN UP	(banana skin) doing it
20.21	NEED THIS UP-HERE	wants book off shelf
20.22	PETE LICK MY MILK UP	he licks up her spill
20.23	GET ME UP THERE	wants on top of slide
20.24	ATE MINE GRAPE UP	Mama ate her grape
20.24	DRINK MY TEA UP	doint it
20.25	APPLE JUICE UP COUNTER	it is up on the counter
20.25	COVER ME UP	wants to be covered
20.25	UP SKY TRAVIS	wants me (Dada) to throw her up
20.26	COVER BEDUS UP	covering up bosoms with blanket
20.27	WEEZER EAT MY DINNER UP	she's afraid he will
20.28	EAT THAT WAFFLE UP	doing it
20.29	REMEMBER MONSTERS UP IN SKY	telling neighbour about TV show with monsters
21.05	HEY, PUT THAT UP	doing it on shelf
21.05	LAY DOWN COVER UP	to her dolls
21.06	PICK THAT COFFEE UP DRINK	wants to
21.07	PULL MY PANTS UP	she is doing it with help
21.08	PUT UP SKY	she wants to be lifted
21.10	BECAUSE…MARIA SCARES ME UP HIGH	Maria is up in window on second floor
21.10	PUT RAISINS UP THERE ON SHELF	doing it
21.10	PUT THAT BOTTLE UP THERE	putting it on ledge

22.04	I SEE YOU UP THERE	I'm in the tree
22.04	I SEE YOU UP THERE AGAIN	I'm in the tree
22.04	PUT-IT UP THERE BY THE WINDOW	placing toy on window sill
22.07	COME UP THERE	wants me to come to her (here)
V23.00	UP THERE BUG	commenting that it is (two times)
V23.00	UP THERE IN THE SKY	talking about planned plane trip
V23.00	CLIMB UP HERE CHAIR, OKAY?	as she does

From Table 2.8, the order in which each usage of *up* was produced by T is obvious. While Tomasello (1992) does not mention the derivational process for each usage of *up*, this type of detailed record could allow us to predict how each usage of *up* is derived in the minds of young monolingual English-speaking children.

2.3.2. Riguel's (2014) analysis ~Naima's case

Considering the fact that little attention has been paid to the acquisition of VPCs by young monolingual English-speaking children despite them being one of the most challenging lexical items to be acquired, Riguel investigates how VPCs had been acquired by a monolingual English-speaking girl, Naima, from the Providence Corpus of the CHILDES database (MacWhinney, 2000; Demuth, Culbertson & Alter, 2006), between the ages of 0;11 and 3;10.

Riguel claims that there are three stages in the acquisition of VPCs by young English-speaking children. The first stage is the holophrastic one. Holophrases are a child's early single-word utterances (De Laguna 1927); at this stage, children use adverbial particles such as *up* and *down* in a verb-like manner to convey the meaning of an entire sentence, as in (1):

(1) NAIMA: **up** Daddy. (1;4,03)
FATHER: oh you wanna get picked up oh that was in the way.
FATHER: that was in the way you wanted to get picked up and that was in the way?

The second stage is characterised by two-word utterances that consist of a noun phrase and a particle, as in (2):

(2) a. NAIMA: shoes on. ‘put my shoes on’
b. NAIMA: microphone off. ‘turn the microphone off’

The third stage is when children can produce VPCs successfully, as in (3):

(3) a. NAIMA: Mommy **clean up** yy (1;8)
b. NAIMA: I **took** it **off** because I don’t wanna have this on me (2;10)
c. NAIMA: I have to **watch out** for it so it yy doesn’t go in the food (3;1)

The distributions of these three stages are summarised in Figure 2.18:

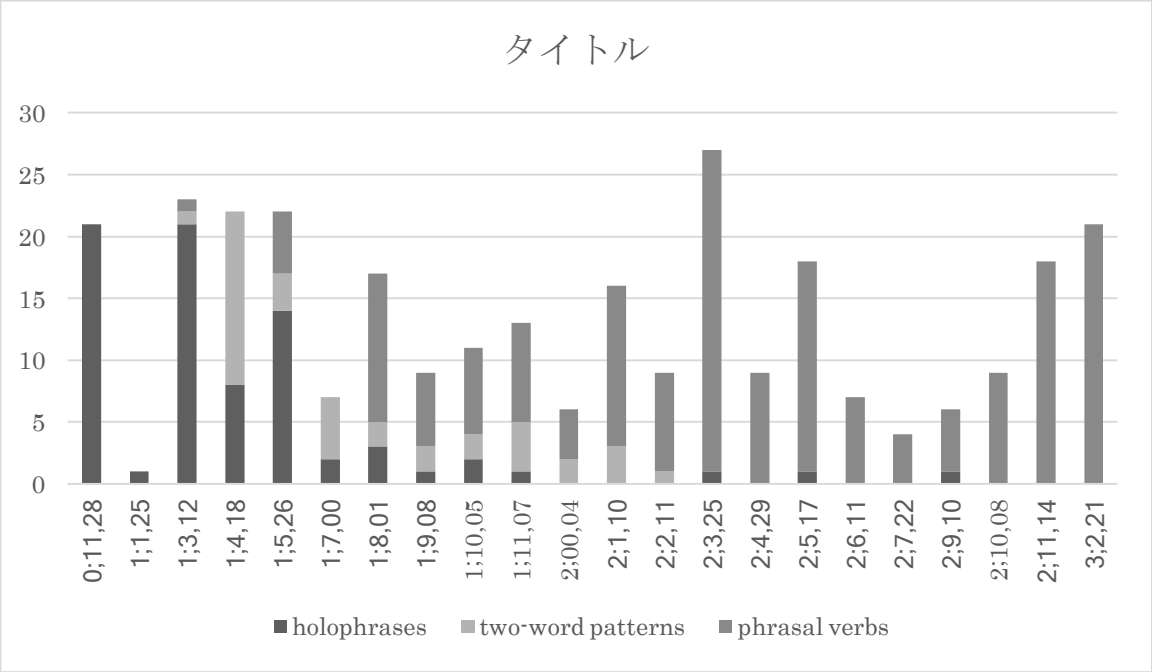

Figure 2.18. Gradual acquisition of VPCs by Naima [simplified version] (from Riguel 2014)

Furthermore, Riguel compares the top ten VPCs produced by Naima and her mother, and found that there is a strong correlation between them. The results are summarised in Table 2.9:

Table 2.9. Top VPCs for the child and the adult (from Riguel 2014)

Rank	Child VPC	Child Freq	Adult VPC	Adult Freq	Child Rank
1	take off	50	put on	219	2
2	put on	42	take off	199	1

3	fall down	30	clean up	125	7
4	put back	28	get out	114	8
5	come back	27	fall down	101	3
6	take out	26	take out	96	6
7	clean up	23	put back	93	4
8	get out	22	put in	89	9
9	come out	21	put away	80	23
9	put in	21	pick up	65	11
10	go away	20	wake up	64	10
10	wake up	20	come out	61	9

Riguel also discovered that there is a correlation between the earliest VPCs acquired by Naima and the most frequent VPCs produced by her mother. These are summarised in Table 2.10:

Table 2.10. The correlation between the earliest VPCs acquired by Naima and the most frequent VPCs produced by her mother (from Riguel 2014)

Most frequent VPCs (Mother)	Number of tokens (Mother)	Age of emergence (Child)
put on	219	**1;6,21**
take off	199	**1;6,21**
clean up	125	**1;6,09**
get out	114	**1;7,00**
fall down	101	**1;3,12**
take out	96	**1;8,08**
put back	93	**1;7,10**
put in	89	**1;8,19**
put away	80	**1;7,17**

pick up	65	**1;6,09**
wake up	64	**1;8,08**
come out	61	2;4,11
pick out	61	2;3,25
turn off	50	**1;9,23**
come back	49	**1;6,09**
sit down	48	**1;7,10**
take away	44	**1;7,25**
go down	43	2;6,11
come on	42	3;3,26
hold on	42	2;10,08
put down	42	2;4,26
hang up	40	2;1,10
get off	39	**1;5,26**
go back	39	2;5,17
go out	35	2;00,04
dress up	34	**1;7,10**
turn on	34	**1;7,10**
come off	33	2;5,20
find out	33	**1;7,25**
get down	33	**1;8,01**
fit in	32	/
figure out	31	2;11,14
go in	31	**1;8,01**

2.3.3. Problems

While Tomasello's (1992) extensive record enables us to identify the order in which each usage associated with verbs and the relevant lexical items is acquired, he does not mention their derivational processes at all, resulting in the insufficient characterisation thereof. As for Riguel (2014), she counts the number of VPCs acquired by Naima every month and attempts to clarify when each VPC was acquired and how the kinds and number of VPCs produced by Naima's mother affected the VPCs produced by Naima. However, she does not distinguish the literal from the figurative usages associated with VPCs in her data, and fails to account for which usage was produced under the influence of a usage that was acquired in advance.

2.4. Research gaps

In the previous sections, I reviewed the main approaches to the semantics of VPCs in the field of cognitive and historical linguistics, and of child language acquisition. While Lindner's (1981) work is worthwhile to the extent that it sheds light on the semantic contribution of spatial particles to the overall meanings of VPCs against the traditional view, there were several problems to be addressed. Firstly, the psychological reality of the semantic network proposed by Lindner is unclear in that a proper methodology to validate distinct senses was not utilised. Secondly, the theoretical framework on which Lindner relied is not sufficient to characterise the semantics of VPCs on the basis that it does not reflect the latest research results in the fields of cognitive psychology and neuroscience. Thirdly, her analysis is misleading in the sense that she fails to distinguish the information carried by spatial particles from the information provided by the other sources such as verbs, sentential contexts or background knowledge. As a result, the semantic networks proposed by Lindner amount to the inaccurate characterisation of VPCs.

On the other hand, while Morgan's (1997) work seems useful in the sense that it attempts

to supplement Lindner's (1981) analysis with conceptual metaphors, work on historical linguistics (e.g., Hopper & Traugott 2003) has revealed that conceptual metaphors are inadequate as a methodology to characterise the meaning extension of a lexical item on the grounds that meaning extensions start from a very specific local context and continue with the aids of both metaphor and metonymy. As a result, the mechanism proposed by Morgan (1997) also leads to the inaccurate characterisation of VPCs.

In terms of historical analyses, overall, little attention has been paid to how each usage associated with a given particle or VPC was derived historically. Concerning work on child language acquisition, little attention has been paid to how the usages associated with a VPC are derived in the minds of children. These issues are summarised in the following:

[Lindner's (1981) problems]

i) The uncertainty concerning whether the approach reflects the psychological reality of language users

ii) The limitation of the theoretical framework of Space Grammar due to the lack of reference to the latest research results in psychology and neuroscience and the lack of proper methodology

iii) The failure to distinguish the information included in spatial particles from that carried by the other sources such as verbs, sentential contexts or background knowledge.

[Morgan's (1997) problem]

The limitation of the theoretical framework of Conceptual Metaphor Theory as a tool for the appropriate characterisation of meaning extensions

[Problem with historical analyses]

Little attention has been paid to the historical development of each sense associated with a VPC

[Problem with child language acquisition]

Little attention has been paid to the derivational processes of each sense associated with a VPC in the minds of children

In order to address the problems discussed thus far, a new approach is needed, which

i) reflects the psychological reality of language users,

ii) draws upon the theoretical framework suitable for a better characterisation of the mechanisms functioning when interpreting utterances and when meaning extensions occur, and

iii) utilises the latest research results from the fields of psychology and neuroscience as well as from the field of linguistics.

As a theoretical framework that has the ability to solve the problems identified in the previous studies, I will adopt the Theory of Lexical Concepts and Cognitive Models (LCCM Theory) developed by Evans (2009). The reasons why LCCM Theory can be considered to be appropriate for the semantic characterisation of VPCs are as follows.

Firstly, LCCM Theory has a principled methodology that improves on other theories to validate the semantic network models proposed by many researchers. In the theory, a principled polysemy approach, which was originally proposed by Tyler and Evans (2003) and revised by Evans (2009), is adopted. This approach provides the objective criteria to constrain the number of the senses assumed to reside in a semantic network in a way in which the network reflects the psychological reality of the mind; as a result, it enables us to create a more objective, psychologically realistic semantic network of polysemous items such as verbs and spatial particles.

Secondly, LCCM Theory incorporates the other theoretical frameworks suitable for the semantic characterisation of VPCs within cognitive linguistics. The first theoretical framework is Construction Grammar proposed by Goldberg (1995), which allows us to analyse the

semantics of VPCs from the perspective of the construction approach; consequently, it becomes possible to prevent the failure to distinguish the semantic properties associated with spatial particles from those stemming from other sources such as verbs, as identified by Lindner (1981). The second theoretical framework is closely related to grammaticalisation, which has a long history in the field of historical linguistics. The framework helps us to offer a better explanation for the meaning extensions of polysemous items such as verbs and spatial particles.

Thirdly, LCCM Theory is based on the latest research results in the field of cognitive psychology. In particular, regarding the mechanism functioning when interpreting utterances, the theory adopts the view that is predominant in the field of cognitive psychology (e.g., Barsalou 2008). Adopting the view that has been proven to be valid in a considerable number of psychological studies makes LCCM Theory much more psychologically realistic than are other previous theoretical frameworks.

2.5. Research questions

In the previous section, the reasons why the LCCM Theory is suitable for a better characterisation of the semantics of VPCs were presented.

Then, taking into account the problems concerning the semantics of VPCs that remain unsolved, several research questions arise. They are summarised in the following:

i) What kinds of semantic properties associated with verbs and particles contribute to the meanings of the overall VPCs?

ii) What kinds of semantic properties associated with verbs and particles distinguish one meaning of the same VPC from the other?

iii) What kind of conceptual information associated with verbs and particles contributes to the meanings of the overall VPCs?

iv) How does the linguistic information associated with verbs and particles provide

access to the information in the conceptual system to produce the meanings of the overall VPCs?

v) How do the other sentential contexts influence the creation of the meanings of the overall VPCs?

With regard to the inadequacy of the previous studies concerning the distinction between the information carried by verbs and particles, the first question pertains to the kinds of semantic properties associated with verbs and particles that contribute to the meanings of the overall VPCs. In many cases, each VPC is associated with several meanings because many have both literal and abstract ones. Therefore, it is possible to assume that different kinds of semantic properties associated with verbs and particles make a contribution to the meanings of the same VPCs. The second question that arises is thus: What kinds of semantic properties associated with verbs and particles distinguish one meaning of the same VPC from the other? In addition, it is assumed in LCCM Theory that there is a relatively clear boundary between the linguistic system and the conceptual system, and that the meanings of lexical items comprise the information in both systems. If we regard the semantic properties described above as the information in the linguistic system, it can be said that verbs and particles include another kind of information inhabiting the conceptual system. The third question that arises is then: What kind of conceptual information associated with verbs and particles contributes to the meanings of the overall VPCs? Furthermore, it is assumed in LCCM Theory that the linguistic information associated with lexical items provides access to the information in the conceptual system to give rise to the overall meanings. Therefore, the fourth question that arises is: How does the linguistic information associated with verbs and particles provide access to the information in the conceptual system to produce the meanings of the overall VPCs? With regard to this process, it seems more natural to consider that other sentential contexts such as the noun phrases following the verbs influence the creation of the meanings of the overall VPCs.

Hence, the fifth question that arises is: How do other sentential contexts influence the creation of the meanings of the overall VPCs? Answering these questions could lead to a better understanding of the semantic aspects of VPCs that have not received attention in the previous studies.

2.6. Summary

In this chapter, I took an overview of the main previous studies of English VPCs in the fields of cognitive linguistics, historical linguistics, and child language acquisition, then identified a number of problems to be tackled, and laid out the research questions that will be investigated in the following chapters.

In Chapter 3, the theoretical frameworks I rely on in this thesis will be introduced. Chapters 4 and 5 will investigate the semantics of *up* as a spatial particle based on historical data, which I assume to be the best resource to predict the semantic network of *up* in the mind of a contemporary language user. Based on this detailed examination, Chapter 6 will address the semantics of *up* in the mind of a contemporary language user. Chapter 7 will shed light on the motivations for each sense associated with a given VPC by focusing on *pick up*.

Chapter 3 Theoretical frameworks

As mentioned in Chapter 2, this thesis adopts the Theory of Lexical Concepts and Cognitive Models (LCCM Theory) developed by Evans (2009) as a framework suitable for a better characterisation of the semantics of verb-particle constructions (VPCs). This chapter introduces the architecture of LCCM Theory and lays the foundations for the analyses of VPCs in the subsequent chapters.

As mentioned in the previous chapter, LCCM Theory incorporates a number of important theories in the field of cognitive linguistics. Before introducing LCCM Theory, I will provide a brief overview of each theory.

This chapter consists of seven sections: Section 3.1 addresses Conceptual Metaphor Theory, which is also one of the main theories that accounts for linguistic meanings in terms of background cognition (cf. Evans 2009). Section 3.2 sketches out the Cognitive Theory of Metaphor and Metonymy, which focuses on the interaction of metaphor with metonymy. Section 3.3 introduces LCCM Theory. Section 3.4 identifies a problem with the theory. Section 3.5 presents a revised version of LCCM Theory. Section 3.6 shows how the methodology of LCCM Theory is applied to the research questions I set up in this thesis. Section 7 provides a brief summary.

3.1. Conceptual Metaphor Theory

3.1.1. Lakoff and Johnson's (1980b) original theory

As mentioned in Chapter 2, Conceptual Metaphor Theory is one of the most ground-breaking theories in the field of cognitive linguistics, and we saw how this theory works by looking at the LOVE IS A JOURNEY metaphor. Here, I introduce some of the orientational metaphors and provide a brief overview of Conceptual Metaphor Theory.

Orientational metaphors (Lakoff & Johnson 1980b)

(1) HAPPY IS UP; SAD IS DOWN

Ex.) I'm feeling up. That boosted my spirits. / I'm feeling down. My spirits sank.

Physical basis: Drooping posture typically goes along with sadness and depression, erect posture is associated with a positive emotional state.

(2) CONSCIOUS IS UP; UNCONSCIOUS IS DOWN

Ex.) Wake up. I'm up already. / He fell asleep. He sank down into a coma.

Physical basis: Humans and most animals sleep lying down and stand erect when they wake up.

(3) HEALTH AND LIFE ARE UP; SICKNESS AND DEATH ARE DOWN

Ex.) He's in top shape. As to his health, he's way up there. / He fell ill. He came down with the flu.

Physical basis: Serious illness forces us to lie down physically. When one is are dead, one lies down physically.

(4) HAVING CONTROL OR FORCE IS UP; BEING SUBJECT TO CONTROL, OR FORCE, IS DOWN

Ex.) I have control over her. I am on top of the situation. / He is under my control. He fell from power.

Physical basis: Physical size typically correlates with physical strength, and the victor in a fight is typically on top.

(5) MORE IS UP; LESS IS DOWN

Ex.) The number of books printed each year keeps going up. My income rose last year. / The amount of artistic activity in this state has gone down in the past year. His income fell last year.

Physical basis: If one adds more of a substance or physical objects to a container or pile, the level goes up.

(6) FORESEEABLE FUTURE EVENTS ARE UP (AND AHEAD)

Ex.) The up-and-coming events are listed in the paper. I'm afraid of what's up ahead of us.

Physical basis: Normally, our eyes are in the direction in which we move (ahead, forward). As an object approaches a person (or the person approaches the object), the object appears larger. Since the ground is perceived as being fixed, the top of the object appears to be moving upward in the person's field of vision.

(7) HIGH STATUS IS UP; LOW STATUS IS DOWN

She'll rise to the top. He's climbing the ladder. / He has a low position. She fell in status.

Social and physical basis: Status is correlated with power (social) and power is UP (physical)

(8) GOOD IS UP; BAD IS DOWN

Things are looking up. We hit a peak last year, but it's been going downhill ever since.

Physical basis for personal well-being: HAPPINESS, HEALTH, LIFE and CONTROL—the things that principally characterise what is GOOD for a person—are all UP.

(9) VIRTUE IS UP; DEPRAVITY IS DOWN

He is high-minded. She is an upstanding citizen. / Don't be underhanded. That was a low-down thing to do.

Physical and social basis; GOOD IS UP for a person (physical basis), together with the SOCIETY IS A PERSON metaphor (in the version in which one is not identifying with one's society). To be virtuous is to act in accordance with the standards set by the society/person to maintain well-being. VIRTUE IS UP because virtuous actions correlate with social well-being from the society/person's point of view. Since socially based metaphors are part of the culture, it is the society/person's point of view that counts.

(10) RATIONAL IS UP; EMOTIONAL IS DOWN

The discussion fell to the emotional level, but I raised it back up to the rational plane.

Physical and cultural basis: In this culture, people view themselves as being in control over animals, plants and their physical environment, ant it is their unique ability to reason that places human beings above other animals and gives them this control. CONTROL IS UP, which has a physical basis, thus provides a basis for MAN IS UP, and therefore for RATIONAL IS UP.

As is evident from the above examples, orientational metaphors are systematic both internally and externally. For example, HAPPY IS UP is seen as a coherent system in that upward orientation is always associated with happiness. Furthermore, this metaphor is also coherent with other relevant metaphors such as GOOD IS UP, HEALTHY IS UP, ALIVE IS UP and CONTROL IS UP in that upward orientation is always associated with the positive aspects of our lives.

In addition, orientational metaphors are motivated physically, socially or culturally. For example, HAPPY IS UP is created from the experiential correlation between erect posture and a positive emotional state (physically motivated). On the other hand, VIRTUE IS UP is created from the inextricable association between virtuous actions and social well-being (socially motivated).

Lakoff and Johnson (1980b) claims that conceptual metaphors, including orientational ones, are systematic, experientially grounded, and stored in the long-term memory.

3.1.2. Johnson's (1997) Conflation Hypothesis

Based on Conceptual Metaphor Theory, Johnson (1997) proposes the Conflation Hypothesis, which posits that there is a stage at which source and target domains are conflated when children acquire conceptual metaphors. Focusing on the verb *see*, he investigates how children acquire the UNDERSTANDING IS SEEING metaphor. Johnson found that, rather than acquiring the 'to understand' meaning after the complete acquisition of the 'to see' meaning, there is an immediate state at which both meanings are conflated. The result suggests that, at some point, SEEING as a source domain is fused with UNDERSTANDING as a target domain.

3.1.3. Grady's (1997) new approach

Taking Conceptual Metaphor Theory as the starting point, Grady (1997) attempts to clarify the motivations for conceptual metaphors in an adequate way. He argues that metaphors are created via several intermediate stages. To illustrate this, let us consider the following diagram:

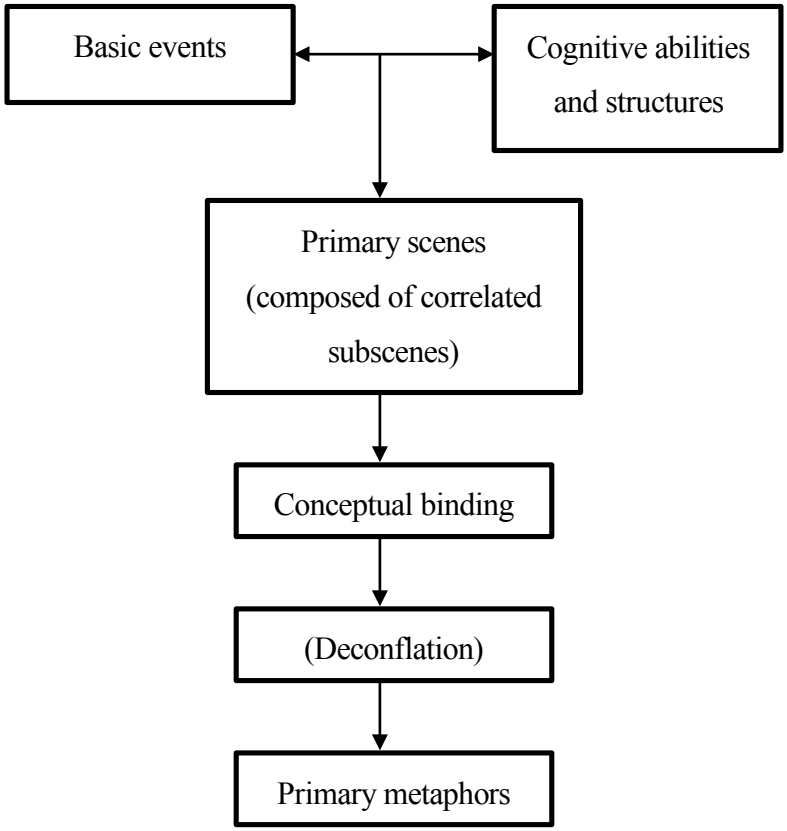

Figure 3.1. From basic events to primary metaphors (from Grady 1997)

According to Grady, the creation of metaphors originates in basic events. He defines basic events as events that recur on a regular basis in our experience and are more salient and meaningful to us than others. For example, when we carry a heavy shopping bag, this means that it is more difficult for us to lift it than it would be if it were light. That is to say, heaviness can be seen as a basic event in the sense that the experience can have a particular implication, such as difficulty.

When we encounter such a basic event as heaviness, we experience it in a subjective way. We may feel discomfort when carrying a heavy shopping bag after a long walk, or experience difficulty when carrying many books at the same time. This is because we are equipped with cognitive abilities to perceive and analyse a wide variety of phenomena in the world. Given such abilities, we have a subjective experience of basic events such as discomfort and difficulty, which Grady refers to as

primary scenes. One primary scene often includes a number of sub-experiences (such as heaviness, discomfort and difficulty), which Grady calls subscenes.

Based on the fact that we experience primary scenes (such as heaviness) repeatedly on a daily basis, and since they include close correlations between their sub-experiences (for example, heaviness and discomfort), such correlations become closely associated in our cognitive representations, which Grady refers to as conceptual binding.

If the association between two concepts is sufficiently close, the boundary between them could become blurred. For example, if we feel discomfort every time we carry a heavy shopping bag and this association is more prominent than are those in other kinds of activities, heaviness and difficulty could form a single concept subsuming both aspects, which Grady calls deconflation.

Once the process of deconflation occurs, the stage is set for the creation of conceptual metaphors. To put this another way, the association between different notions could be reinterpreted as a broader correspondence between them. Grady calls conceptual metaphors created via the above process primary metaphors.

3.1.4. The Neural Theory of Metaphor

In the light of developments in neuroscience, Lakoff (2009) presents the Neural Theory of Metaphor. The theory claims that all the assumptions about conceptual metaphors can be proven by examining the functioning of our brains. For example, he explains the asymmetric nature of conceptual metaphors (physical experiences always function as source domains) in terms of the asymmetric nature of neurons. To put this another way, the unidirectionality of conceptual metaphors can be substantiated by the fact that neurons that fire more often tend to develop greater firing capacities, and those involved in physical bodily functioning tend to fire more frequently.[1] He argues that the

[1] It is considered that the human brain consists of more than 100 billion neurons (humanbrainfact.org.). The firing of each neuron leads to the activation of part of the region in the brain.

clarification of the kinds of computations that neural circuitry can perform helps us to shed light on the mechanism(s) whereby conceptual metaphors work.

3.2. The Cognitive Theory of Metaphor and Metonymy

Focusing on the inseparable relationship between metaphor and metonymy, Barcelona (2003) claims that every metaphor is motivated by conceptual metonymy. According to him, metaphor is the cognitive mechanism whereby one experiential domain is mapped partially onto a different experiential domain; thus, the second domain is partially understood in terms of the first. On the other hand, metonymy is a conceptual projection whereby one experiential domain is understood partially in terms of another experiential domain that is included in the same experiential domain. Barcelona argues that the MORE IS UP metaphor is created due to the metonymic cause-effect link between quantity and the verticality dimension. He concludes that the number of metonymy-based metaphors is very high.

3.3. The Theory of Lexical Concepts and Cognitive Models (LCCM Theory)

LCCM Theory is one of the latest linguistic theories designed to offer a better explanation for both lexical representations and semantic compositionality, especially designed particularly for the characterisation of the variety of the semantic properties associated with a lexical item. Subsection 3.3.1 addresses the basic assumptions and machinery of LCCM Theory. Subsection 3.3.2 presents a methodology for identifying distinct senses associated with a given lexical item. Subsection 3.3.3 provides a brief outline of the meaning-construction processes posited by LCCM Theory.

3.3.1. The basic assumptions and machinery

As noted in Chapter 2, one of the key assumptions made within LCCM Theory is that there are two kinds of representational systems in the mind: the linguistic and conceptual systems. The theory assumes that the linguistic system consists of language-specific information and the conceptual system comprises extralinguistic information. Based on Langacker (e.g., 1987), Evans (2009) adopts

the concept of symbolic units to account for the structure of language-specific information. He refers to the phonological pole as a phonological vehicle and the semantic pole as a lexical concept. On the other hand, the cognitive model corresponds to the information in the conceptual system, which consists of a tremendous amount of knowledge structures created due to interacting with the world outside, and is multimodal in nature. Evans argues that an utterance-level meaning, which he refers to as conception, is produced as a result of a lexical concept providing access to the corresponding cognitive models that populate the conceptual system. The following subsections will provide a more detailed explanation of the two main theoretical constructs, namely lexical concepts (Section 3.3.1.1) and cognitive models (Section 3.3.1.2), and of the way in which they interact with each other to give rise to a conception (Section 3.3.1.3).

3.3.1.1. Lexical concepts

The symbolic nature of lexical concepts

As mentioned above, LCCM Theory holds that lexical concepts are semantic poles of symbolic units. As stated in the previous chapter, within cognitive linguistics, it is assumed that the lexicon and grammar constitute a continuum, and that all linguistic units, from grammatical markers to content words to constructions, have their own symbolic units. Following this assumption, LCCM Theory posits that all linguistic units have their own lexical concepts. To clarify this point, let us consider the following examples adapted from Evans (2009):

(1) a. Vehicle: "*France*"
Lexical concept: [FRANCE]
b. Vehicle: "NP *kick*FINITE *the bucket*"
Lexical concept: [AN ANIMATE ENTITY DIES]
c. Vehicle: "NP FINITE VERB NP NP"
Lexical concept: [THING X CAUSES THING Y TO RECEIVE THING Z][2]

[2] I will follow the formatting conventions utilised by Evans for the representation of lexical concepts.

According to Evans (2009), any linguistic unit, for example words such as *France*, idioms such as *kick the bucket*, or grammatical constructions such as double object construction, has its own lexical concept, as illustrated in (1). Evans also claims that each lexical concept can integrate with another lexical concept to create a lexical conceptual unit. By way of illustration, let us consider the symbolic unit associated with the ditransitive construction exemplified in (1c). The phonological vehicle for the ditransitive construction 'NP FINITE VERB NP NP' is associated with the lexical concept [THING X CAUSES THING Y TO RECEIVE THING Z]. Since some linguistic units such as idioms and constructions include phonetically implicit vehicles[3] in order for the overall conception of a ditransitive construction to be produced, it is necessary to fill the positions occupied by those vehicles with other lexical forms, as illustrated in (2):

(2) NP FINITE VERB NP NP

↑ ↑ ↑ ↑

John baked Mary a cake

This type of integration, also known as 'fusion' in Cognitive Construction Grammar (e.g., Goldberg 2006), or 'elaboration' in Cognitive Grammar (e.g., Langacker 1987), leads to the creation of lexical conceptual units.

The distinction between closed- and open-class lexical concepts

In addition, on the basis of Talmy's (2000) bifurcation between grammatical and lexical subsystems, Evans (2009) maintains that lexical concepts consist of two kinds: closed-class and open-class lexical concepts. Closed-class lexical concepts are the semantic structures associated with closed-class vehicles such as spatial particles, and are specialised for encoding linguistic content.[4] On the other hand, open-class lexical concepts are the semantic structures associated with open-class

[3] A phonological vehicle that is not lexically filled.

[4] In LCCM Theory, the term 'linguistic content' is used to represent the content encoded by a lexical concept, distinguished from the term 'conceptual content', which represents the content encoded by a cognitive model.

vehicles such as nouns and verbs, and are specialised for providing access sites to conceptual content. Based on work in cognitive psychology (e.g., Barsalou 1999), Evans (2013) argues that open-class lexical concepts play a main role in affording access to the cognitive models that populate the conceptual system, and that closed-class elements control the access. With regard to access to the conceptual content, I will provide a detailed explanation later. Moreover, based on Croft's (2007) suggestion, Evans (2009) implies that the boundary between closed-and open-class lexical concepts is not clear cut. That is, it is likely that these two kinds of lexical concepts form a continuum. Therefore, Evans claims that the ability to provide access to conceptual contents cannot be attributed solely to the lexical concepts that Evans classifies as open-class.

The nature of linguistic content

We will now consider the nature of linguistic content. As noted previously, linguistic content is the type of information that is encoded by a lexical concept. Evans (2009) claims that a lexical concept consists of a bundle of distinct types of highly schematic content, and that all lexical concepts have the following features in common:

Parameterisation

Parameterisation is a process that filters out the complexity of conceptual content for purposes of being encoded by language. Evans (2009) argues that linguistic content needs to be parameterised due to its time-pressured nature. That is, linguistic content needs to be succinct in the service of on-going communication. By way of illustration, let us consider the following examples:

(3) a. He kicked the ball Past
b. He kicks the ball Non-past (from Evans 2009)

For example, as evidenced in (3), English compresses an unlimited number of fine distinctions relating to time reference into two: Past and Non-past. Evans refers to this type of compressed distinction as 'parameters', and argues that linguistic content is always represented in a parametric way.

Non-analogous nature

While conceptual content is analogous in the sense that its format resembles the various kinds of experiences from which it was created, linguistic content is non-analogous, and is therefore highly schematic to the extent that its format is produced as a result of parameterisation. Evans' (2009) argument concerning this nature is that linguistic content does not produce a simulation directly. As mentioned above, linguistic content, particularly when associated with an open-class vehicle, is considered to play a major role in evoking a simulation.

Topological reference

As pointed out by Talmy (e.g., 2000), linguistic content is closely related to topological reference rather than to Euclidean reference. To put this another way, this follows because only highly schematic information is encoded by linguistic content. To illustrate this, consider the following example:

(4) "I want to eat this cake not that one!"

In the utterance in (4), the demonstrative vehicle *this* is associated with a lexical concept implying the proximity to the speaker, and another demonstrative vehicle *that* is associated with a lexical concept indicating the distance from the speaker. Whereas the use of *this* and *that* enables us to infer the relative distance from the speaker's point of view, it provides no detailed information regarding the exact distance from the speaker by virtue of the metric system. This feature, which Evans refers to as magnitude-neutral, is limited to closed-class lexical concepts. While both closed- and open-class lexical concepts carry their own linguistic content, only open-class lexical concepts can facilitate access to conceptual content that is similar to the original perceptual experiences from which they arose. Therefore, the use of open-class lexical concepts such as nouns can offer detailed information relating to the Euclidean reference, as evidenced in (5):

(5) "I want to eat the cake 1 metre away from me!"

Restricted set of domains and categories

As language users interact with the world, they create a tremendous number of domains such as TIME and SPACE and the member categories that populate them in the conceptual system. Evans (2009) argues that, while all these domains and the member categories that populate such domains are represented by conceptual content, only a restricted set is encoded by linguistic content due to its parametric nature.

A distinction between nominal and relational lexical concepts

Based on Langacker's (1987) bifurcation between nominals and relations, Evans (2009) classifies lexical concepts into two kinds: nominal and relational lexical concepts. Nominal lexical concepts are associated with nouns and noun phrases, and are conceptually autonomous. On the other hand, relational lexical concepts are associated with lexical classes such as verbs and prepositions, and are conceptually dependent. To clarify this point, consider the following example:

(6) Peter hid a box of chocolate under the bed

In the example in (6), the relational lexical concept [HID] associated with the vehicle *hid* plays a role in relating the nominal lexical concepts associated with the vehicles *Peter*, *a box of chocolate* and *bed*. Based on Goldberg (1995), LCCM Theory holds that relational lexical concepts have schematic participant roles. For example, the lexical concept [HID] has three schematic participant roles: Hider, Object and Location. Thus, it is not until the integration of [HID] with the lexical concepts that fill these slots that the interpretation of [HID] is produced. The same is true of the relational lexical concept [UNDER]. Since this lexical concept has two schematic participant roles (Object and Location), these slots have to be filled for the interpretation of [UNDER]. While nominal lexical concepts are meaningful in their own right, relational lexical concepts are highly schematic in their meanings; therefore, they need the nominal lexical concepts that fill their schematic participant roles. Based on Gentner's (1982) Natural Partitions Hypothesis, Evans (2009) claims that the distinction

between nominal and relational lexical concepts can be attributed to the embodied nature of our experiences.[5]

Lexical profile

A lexical profile constitutes information regarding the kinds of other lexical concepts and vehicles with which a given lexical concept can co-occur. According to Evans (2009), many lexical concepts have their own lexical profiles as part of their linguistic content. I will address this feature in more detail later.

3.3.1.2. Cognitive models

As stated above, LCCM Theory posits that cognitive models constitute a vast amount of knowledge structures created as a result of every sort of experience in the world. According to Evans (2009), cognitive models consist of a huge number of frames and produce a potentially unlimited set of simulations. Evans argues that, while cognitive models resemble the simulators proposed by Barsalou (1999), they differ in important ways.

Firstly, while simulators include every aspect of conceptual structure, cognitive models represent only part of it. That is, the area covered by cognitive models is limited to that which is accessible via lexical concepts. Secondly, whereas simulators are held to arise mainly from perceptual experiences, cognitive models are assumed to be created not only via perceptual experiences but also by linguistic information. To put this another way, cognitive models can be updated dynamically by both perceptual and linguistic information. Finally, while the creation of simulators is attributed solely to perceptible experiences, Evans (2009) implies the possibility that introspective experiences such as subjective and cognitive states could affect the creation of cognitive models.[6]

[5] With regard to the embodied nature of our experiences, see Chapter 1.

[6] Evans acknowledges that work on introspective experiences is under development. Thus, this particular aspect of the cognitive model will be studied in the future.

Types of cognitive models

Based on the world model (e.g., Barsalou 1991; Barsalou et al. 1993), Evans (2009) proposes a number of frame types incorporated into cognitive models, as summarised in Figure 3.2.

According to Barsalou (1991), as people encounter other people, or various types of entities and events in the world, they create a vast amount of knowledge representation in the mind, which he calls the world model. Broadly stated, the world model is divided into two types of frames: things and events. Furthermore, the frames for things and events are subdivided into individuals and types, episodic and generic situations, respectively. Firstly, let us consider how the frames for things are organised in the world model.

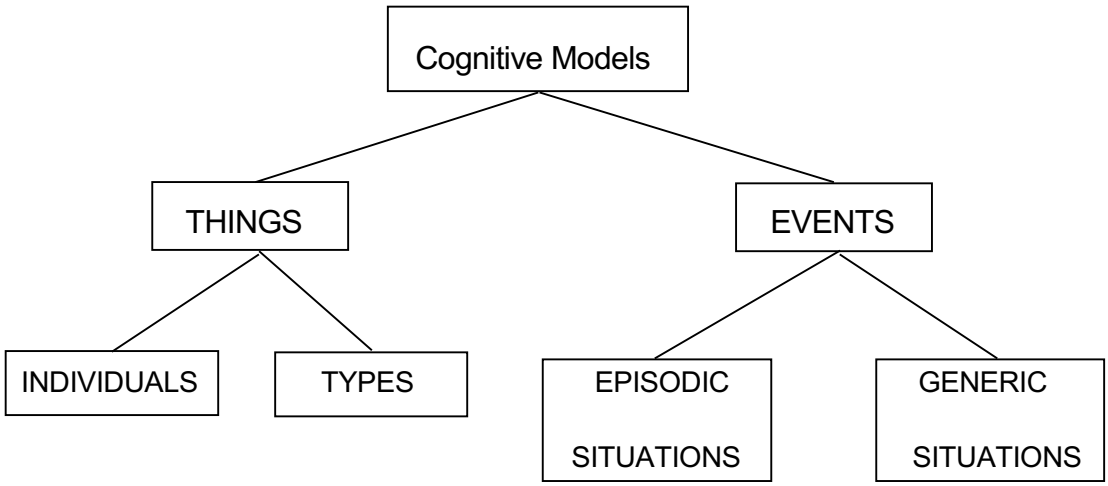

Figure 3.2. Types of cognitive models (from Evans 2009)

Individuals are frames relating to animate and inanimate entities in the world. Due to the one-entity one-frame principle (Barsalou et al. 1993), my supervisor, my pet or my car forms its own frame, respectively. For example, when a person encounters a new situation in which she makes an appointment with her supervisor next week, that new information is incorporated into the frame for 'my supervisor' as episodic information. As such, each individual frame is updated endlessly.

By contrast, types are frames that arise from abstracting the common characteristics across frames for individuals. Thus, while the frame for 'my car' relates to my car in the world, the frame for 'car' is so-called idealised information that is common to every type of car encountered in the past.[7]

I will now proceed to the characterisation of the frames for events. As mentioned above, there are two kinds of frames for events, namely episodic and generic situations. This approach assumes that events consist of two or more situations, and that these situations are further constituted by discrete images, the constituents of which are perceptual symbols.[8] Table 3.1 summarises the differences among them:

Table 3.1. Features of images, situations and events (from Evans 2009)

Features of images	Features of situations	Features of events
(i) a set of perceptual symbols	(i) a series of images	(i) a series of two or more situations
(ii) represents individuals and/or types	(ii) depicts a relatively constant set of individuals and/or types	(ii) the situations are related in a coherent manner
(iii) a static spatial configuration	(iii) depicts some significant change over time	(iii) the situations lead to a significant outcome
(iv) viewed from a particular perspective	(iv) occurs in a relatively constant region of space	

[7] As pointed out by Evans (2009), it is important to note that the type frame for an entity is made up of the properties common to all those entities encountered in the past, not to every entity in the world.

[8] Evans acknowledges that the relationship of events, situations and images resemble that of script, scene and state developed by Schank (1975; 1982) and by Schank and Abelson (1977).

According to this approach, an individual or type is always represented in the situation in which it appears. This follows because the frames for individuals and types are always understood as part of the situation frames. For example, let us consider the individual frame for 'my bed'. When I think of my bed, it is always remembered in my room. The same is true of any other individuals or types; when I think of my brother, not only my brother but also the place in which he is often located, such as his house, is remembered, and so on. To put this another way, the frames for individuals and types are closely related to the actual situations with which they are conventionally associated, the frames for which are called 'episodic situations.' While episodic situations correspond to situations that actually exist in the world, generic situations only exist in the world model, similar to the difference between individuals and types described above. In other words, generic situations are created by abstracting the common features across frames for episodic situations. Thus, whereas the frame for 'my room' relates to my room in the world, the frame for 'room' is made up of the properties common to every room I have encountered in the past. According to Barsalou et al. (1993), a frame for a generic situation is created in the event in which two or more episodic situations meet the requirements described in Table 3.2:

Table 3.2. The requirements for the formation of a generic situation
(from Barsalou et al. 1993)

Two situations are related when the following occur:
(i) They share a common number of images.
(ii) They share common individuals and/or types.
(iii) The configuration of individuals/types in each similar image across situations is qualitatively the same.
(iv) The transformations of individuals/types in similar images across situations is qualitatively the same.
(v) The two situations culminate in a common end state.

Furthermore, episodic situations include two special cases: counterfactual situations and prospective situations. The former is a situation that has not and/or will not occur, while the latter is a situation that has not yet occurred but is predicted to do so. In the world model, both situations are connected with a location at which the actual, or realis situation is represented.

Moreover, as noted at the outset of this section, frames, as parts of cognitive models, can be updated dynamically due to various kinds of experiences such as perceptual, linguistic and introspective experiences. Among them, LCCM Theory emphasises the possibility that the interaction between the linguistic information and the conceptual system affects the modification of existing cognitive models. Evans (2009) refers to this kind of modification as propositional modification.

3.3.1.3. The interactions of lexical concepts with cognitive models

As mentioned at the outset of this chapter, LCCM Theory posits that the meaning, or conception, of a given utterance is produced as a result of the interactions between lexical concepts and cognitive models. In this section, I introduce the new theoretical constructs needed to understand the mechanism whereby lexical concepts interact with cognitive models, and present how such interactions occur using a specific example.

Lexical and semantic representations

Before proceeding to the introduction of the theoretical constructs relating to the interactions between lexical concepts and cognitive models, I will provide a brief overview of the key assumptions of LCCM Theory. LCCM Theory assumes that lexical representation consists of the conceptual and linguistic systems. The conceptual system is made up of a vast number of cognitive models and the linguistic system comprises a huge number of symbolic units, the constituents of which are lexical concepts and phonological forms. The recurring connection of a given phonological form with the corresponding cognitive model(s) in situated language use gives rise to

the lexical concept that becomes associated with the phonological form; as a result, a path is created between the lexical concept and the corresponding cognitive model(s), which is represented by the dashed line in Figure 3.3:

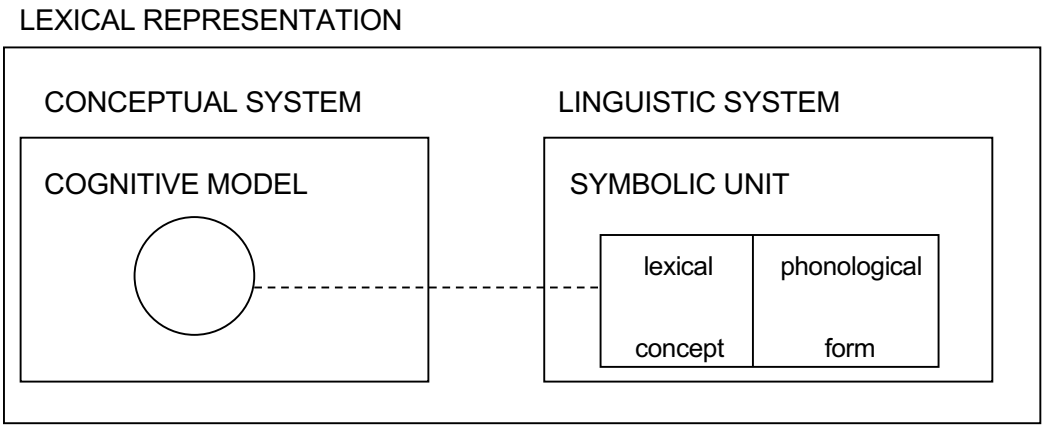

Figure 3.3. Lexical representation in LCCM Theory (Evans 2009)

Furthermore, LCCM Theory posits that semantic representation comprises the interaction between cognitive models and lexical concepts, as shown in Figure 3.4. As is evident from a dashed ellipse enclosing the lexical concept and the cognitive model, both the lexical concept and the cognitive model constitute a semantic representation in LCCM Theory.

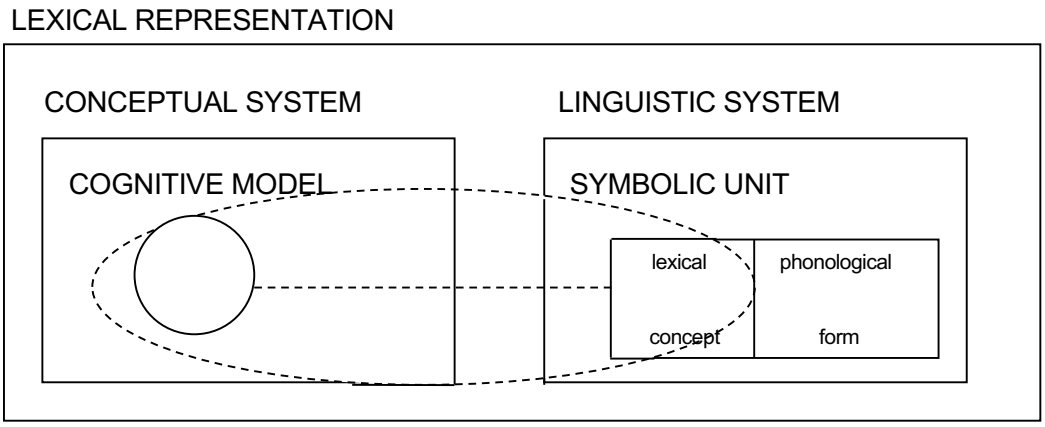

Figure 3.4. Semantic representation in LCCM Theory (Evans 2009)

Access sites

Assuming that there is a relatively clear boundary between the linguistic and conceptual systems and that both systems interact with each other to produce meanings, it seems plausible to consider that there are some locations at which the linguistic system connects with the conceptual system. Evans (2009) refers to these locations as access sites. According to Evans, an access site consists of a number of association areas at which a given open-class lexical concept is associated with the corresponding cognitive models that populate the conceptual system. For example, the lexical concept [RED] has many association areas because [RED] is associated with a considerable number of entities ranging from watercolours to apples to flowers to clothes, and each of these relates to a different kind of redness in the conceptual system. To put this another way, each entity needs its own association area to connect with a part of the conceptual system. All these association areas constitute an access site for the lexical concept [RED].

Evans also mentions the way in which an association area is created. On the basis of work on cognitive psychology (e.g., Barsalou et al. 2008), Evans argues that an association area is created and strengthened due to how many times a given lexical concept is associated with a particular area of the conceptual system in situated language use.

Semantic potential

If most open-class lexical concepts have many association areas in the same way as does [RED] mentioned above, it is reasonable to consider that they can provide access to a number of cognitive models, each of which corresponds to a particular association area. Evans (2009) refers to these sets of cognitive models as semantic potential, not only because they consist of all the cognitive models to which a given lexical concept potentially affords access, but also because the accessibility to various kinds of cognitive models suggests the possibility that a wide variety of meanings can be produced.

Primary and secondary cognitive model profiles

The semantic potential examined above is also called 'cognitive model profiles.' Evans (2009) claims that there are two types of cognitive model profiles: the primary and the secondary cognitive model profiles.

According to Evans, the primary cognitive model profile constitutes all the cognitive models to which a lexical concept provides direct access. That is, these cognitive models, which Evans calls primary cognitive models, function as the association areas that form the lexical concept's access site collectively. On the other hand, the secondary cognitive model profile consists of all the cognitive models to which a lexical concept does not provide direct access. To put this another way, these cognitive models, which Evans calls secondary cognitive models, connect indirectly with a lexical concept via the primary cognitive models. This can be explained in terms of the phenomenon of chaining (Barsalou et al. 1993).[9] Concerning the way in which a given lexical concept connects with the secondary cognitive models, I will provide a more detailed explanation in the following section.

Finally, it is worth spelling out that cognitive model profiles are lexical concept-specific. This follows because each lexical concept provides access to a different set of cognitive models. The result of this is that each lexical concept makes a different semantic contribution to the concept of an utterance in which it is embedded.

The interaction between a lexical concept and its cognitive model profile

In this section, I present how the interaction between the linguistic and conceptual systems occurs. By way of illustration, let us consider the following examples:

(7) 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 (from Evans 2009)

[9] What is implied by the notion of chaining here is that cognitive models constitute a range of systematic interconnections.

According to Evans (2009), the reason why the lexical form *France* makes a different semantic contribution to the conception of an utterance in which it is embedded in (7) is that the lexical concept [FRANCE] associated with *France* activates a different part of its cognitive model profile. To clarify this point, let us consider the partial cognitive model profile for [FRANCE], diagrammed in Figure 3.5:

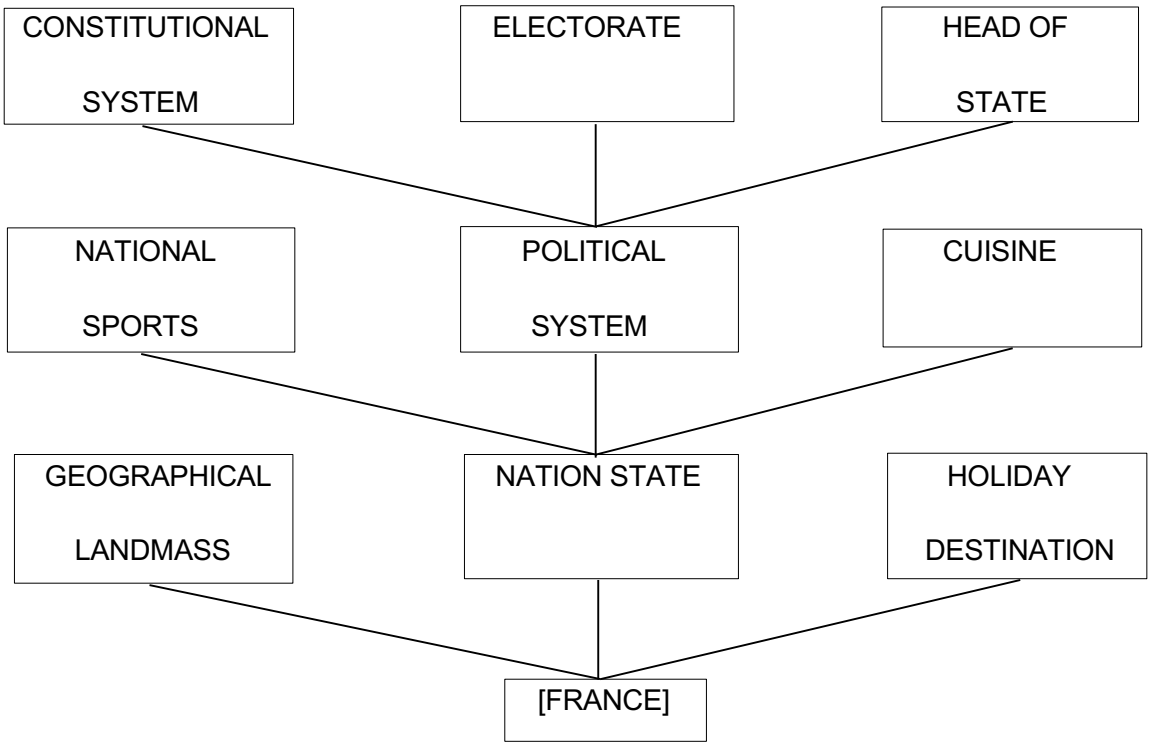

Figure 3.5. Partial cognitive model profile for [FRANCE] (from Evans 2009)

In Figure 3.5, the primary cognitive model profile for [FRANCE] is made up of (at least) three primary cognitive models: GEOGRAPHICAL LANDMASS, NATION STATE and HOLIDAY DESTINATION. In Figure 3.6, these three cognitive models serve as the access sites for the lexical concept [FRANCE] to connect with a part of the conceptual system. For example, in (7b), the lexical concept provides access to and activates the NATION STATE cognitive model due to its utterance context, in which one of the roles played by France as a nation state is mentioned. From this example, it is obvious that the lexical concept affords access to and activates its primary cognitive models.

On the other hand, in (7c), the NATIONAL SPORTS cognitive model is activated via the NATION STATE cognitive model as its association area, as diagrammed in Figure 3.6. From (7c), it can be seen that the phenomenon of chaining enables the lexical concept to provide access to its secondary cognitive models.

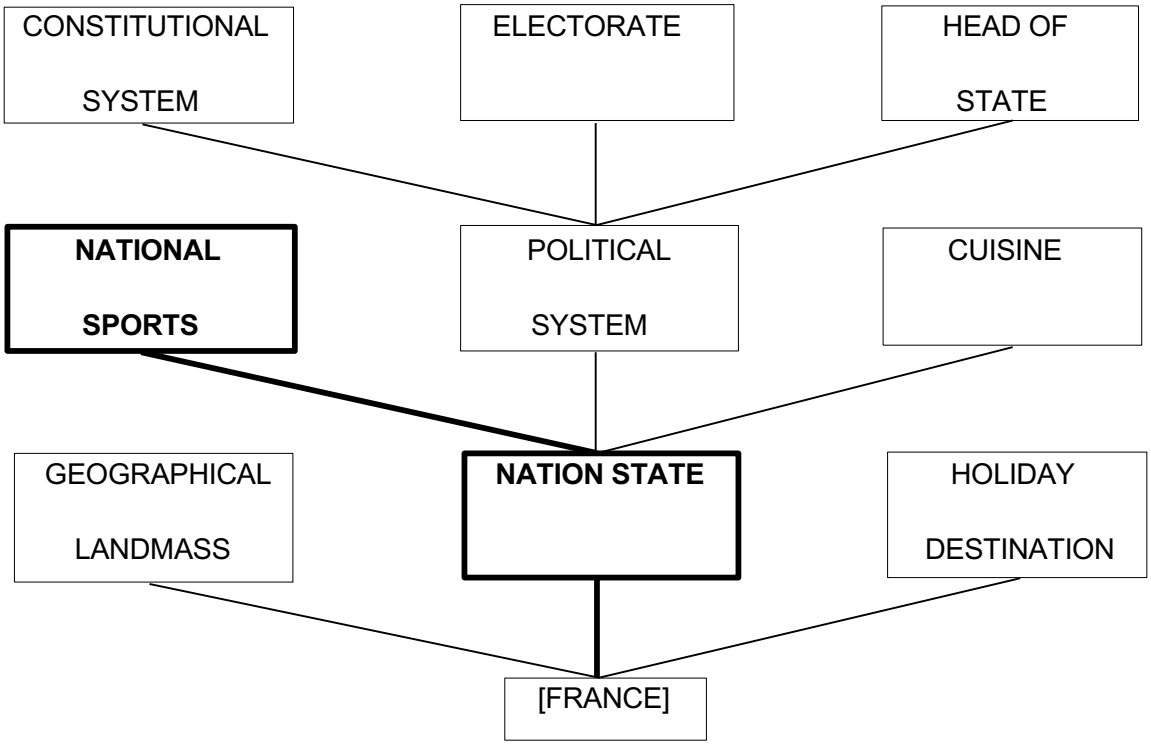

Figure 3.6. Access route established by the interpretation of [FRANCE] in the utterance *France beat New Zealand in the 2007 Rugby World Cup*

3.3.2. A methodology for identifying distinct lexical concepts~ Revised principled polysemy

Before addressing the methodology for identifying lexical concepts, I will explain the notion of selectional tendencies and lexical profile to fully get to grips with it. According to Evans (2009), selectional tendencies are defined as the patterns of usage conventionally associated with a given lexical item and consist of two kinds: semantic and formal selectional tendencies. Semantic selectional tendencies concern the (array of) lexical concepts with which a given lexical concept co-occurs and in which it can be inserted. On the other hand, formal selectional tendencies are concerned with the (array of) phonological vehicles with which a given lexical concept co-occurs

and in which it can be inserted. A lexical profile is defined as the selectional tendencies (including both semantic and formal selectional tendencies) that constitute part of the linguistic content encoded by a lexical concept, and which is unique to any given lexical concept. To illustrate this, let us consider the following example:

(8) Time flies when you're having fun (from Evans 2009)

Evans argues that the lexical form *time* has four distinct lexical concepts, and that *time* in (8) exhibits a lexical concept called [DURATION], which Evans suggests is closely related to an assessment of temporal magnitude; more specifically, the particular variation, [TEMPORAL COMPRESSION], which relates to the quicker motion of time than usual.[10] Let us now examine the types of formal and semantic selectional tendencies associated with the [DURATION] lexical concept and what its lexical profile looks like.

Firstly, the formal selectional tendencies associated with this type of lexical concept is that *time* is regarded as a mass noun. Therefore, usage independent of any kind of determiner is possible, as in (8), and it can also be pre-modified by the definite article in a case in which it is considered to be specific, as in (9a). In addition, due to the nature of mass noun, it cannot be pre-modified by an indefinite article, as in (9b):

(9) a. During the dinner date, the time seemed to fly
b. *During the dinner date, a time seemed to fly (from Evans 2009)

Let us now move on to the semantic selectional tendencies. According to Evans (2009), the [TEMPORAL COMPRESSION] lexical concept can co-occur with lexical concepts that exhibit a rapid motion, as evidenced in the use of *flies* in (8).

Thus far, we have seen the formal and semantic selectional tendencies conventionally associated with the lexical concept [TEMPORAL COMPRESSION]. Conforming to Evans' terminology, this

[10] Evans claims that the [DURATION] lexical concept associated with *time* had two variants: [PROTRACTED DURATION], which relates to a slower motion of time than usual, and [TEMPORAL COMPRESSION].

follows because these selectional tendencies are understood as the lexical profile that is unique to this lexical concept and can distinguish this from other lexical concepts associated with the lexical form *time*.

Considering the relationship between these two kinds of selectional tendencies, Evans proposes two types of criteria to identify distinct lexical concepts with which a given lexical form is associated. They are summarised in the following:

The Semantic Selectional Criterion

A distinct lexical profile - encoded by a distinct lexical concept by definition - provides unique or highly distinct patterns in terms of the nature and range of the lexical concepts with which a lexical concept can co-occur or in which it can be embedded or, in the case of an internally open lexical concept, which occurs within it.[11]

The Formal Selectional Criterion

A distinct lexical profile - encoded by a distinct lexical concept by definition - provides unique or highly distinct patterns in terms of the vehicles with which a lexical concept can co-occur or within which it can be embedded or, in the case of an internally open lexical concept, the nature of the alignment between vehicles and the internally closed lexical concepts that lexically fill the internally open lexical concept.

3.3.3 Semantic compositionality

As stated at the outset of this chapter, LCCM Theory also encompasses a theory of semantic compositionality; that is, how the overall meaning of a given utterance, or a conception, is produced in meaning-construction processes. Evans (2009) claims that three steps can be identified concerning

[11] According to Evans (2009, p. 349), an internally open lexical concept is defined as 'a schematic lexical concept which has "slots" that can be "filled in" by less schematic lexical concepts'. Evans argues that such concepts are associated with phonetically implicit vehicles. A phonetically implicit vehicle is defined as a vehicle that is not lexically filled.

the production of a conception: lexical concept selection (Section 3.3.3.1), lexical concept integration (Section 3.3.3.2) and interpretation (Section 3.3.3.3). I will examine each of these in turn.

3.3.3.1. Lexical concept selection

Types of selection

Assuming that many phonological vehicles can be associated with a number of lexical concepts as described above, it is necessary to identify the precise lexical concept(s) with which a given vehicle is associated in a specific language use. Evans refers to this identification process as lexical concept selection. Evans argues that there are several types of selection.

Selection consists of two main types: broad selection and narrow selection. Broad selection relates to the identification of one or more lexical concepts among all the lexical concepts associated with a given phonological vehicle. By way of illustration, let us consider the following example:

(10) The kitten is in the box (from Evans 2009)

Evans claims that the phonological vehicle *in* is associated with a number of distinct lexical concepts, and that hearing an utterance such as (10) causes a language user to select the [ENCLOSURE] lexical concept from among them. Evans refers to this type of selection as single selection.

In addition to broad selection, there is another type of selection, which is narrow selection. This type of selection pertains to the identification of one or more parameters among all the parameters encoded by a single lexical concept. To illustrate this, let us consider the following examples:

(11) The toy is in the box
(12) a. The bulb is in the socket
b. The flower is in the vase
c. The umbrella is in his hand (from Evans 2009)

As mentioned above, Evans (2009) claims that the phonological vehicle *in* is associated with a number of lexical concepts. According to his analysis, the use of *in* illustrated in (11) and (12) relates

to the [ENCLOSURE] lexical concept. As stated earlier, Evans maintains that a single lexical concept consists of a bundle of distinct types of highly schematic linguistic content. The [ENCLOSURE] lexical concept is assumed to involve several distinct parameters, including Enclosure and Location with Surety. Evans posits that the instance of *in* in (11) exhibits full enclosure due to its sentential context, selecting the Enclosure parameter, while the instances of *in* in (12) manifest partial enclosure due to their sentential contexts, selecting the Location with Surety parameter. Evans refers to this type of selection as narrow selection.

As pointed out by Evans (2009), it is worth spelling out that narrow selection is likely to be a matter of degree. To put this another way, in both examples in (11) and (12), there is a possibility that both the Enclosure and Location with Surety parameters are activated at the same time. If this is the case, the difference between (11) and (12) is that, in the former example, the Enclosure parameter is activated more strongly than is the Location with Surety parameter, whereas in the latter example, the reverse is true. Evans refers to this type of gradient activation as foregrounding.

Factors in selection

It is natural to consider that various factors affect the process of lexical concept selection. Evans (2009) argues that such factors are mainly of two kinds: linguistic and extralinguistic contexts. I will examine each of these in turn.

Linguistic and extralinguistic contexts

According to Evans (2009), there are three levels in a linguistic context: the utterance context, the discourse context and the speech event. The first two are addressed here.

The first type of linguistic context is utterance context. This is a linguistic context in which appropriate lexical concept(s) are selected due to the influence of all the linguistic information associated with the other lexical items appearing in the same utterance. The second type of linguistic context is discourse context. This is a linguistic context in which more than one utterance affects the selection of the appropriate lexical concept(s).

On the other hand, extralinguistic context is a context in which the setting where a given utterance was made affects the selection of appropriate lexical concept(s).

3.3.3.2. Lexical concept integration

The second meaning-construction process that Evans (2009) assumes in LCCM Theory is lexical concept integration. Lexical concept integration is the process in which the integration of linguistic contents encoded by lexical concepts occurs to produce lexical conceptual units, constituting the basis for the next process called interpretation, which will be addressed later.[12] Evans claims that, once the lexical concept selection discussed above has occurred, lexical concept integration begins to take place.[13]

3.3.3.3. Interpretation

The third meaning-construction process that Evans (2009) posits in LCCM Theory is interpretation. Interpretation is the process in which the linguistic contents integrated into the former operation provide access to the conceptual contents represented by the corresponding cognitive models, receiving an informational characterization from these cognitive models. Informational characterisation is defined as the simulation that becomes associated with a lexical conceptual unit or utterance after undergoing interpretation. According to Evans, one of the key notions relating to this process is matching. Matching is an operation in which two or more lexical concepts' cognitive model profiles undergo matching to achieve an informational characterisation. Evans argues that the process of interpretation occurs as a result of the matching operation be applied recursively until all lexical conceptual units in a given utterance receive an informational characterisation.

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[12] Evans refers to both lexical concept integration and interpretation altogether as 'fusion,' or 'fusion operation.'

[13] As pointed out by Evans, meaning-construction processes are dynamic in nature. That is, it is likely that all three processes occur in tandem.

3.3.3.4. Summary

In the previous sections, I discussed how the interaction of three types of meaning-construction processes gives rise to an utterance-level informational characterisation, or a conception. I will now offer a brief summary of this sequential process.

According to Evans (2009), the first meaning-construction process LCCM Theory assumes is lexical concept selection. On hearing a specific utterance, this process leads a language user to narrow the lexical concept potential - multiple lexical concepts conventionally associated with a given phonological vehicle - associated with each vehicle to one or more lexical concepts appropriate for the linguistic or extralinguistic context in which the vehicle appears. Once lexical concept selection has occurred, the second meaning-construction process, which is lexical concept integration, begins to take place. This process causes a language user to integrate the lexical concepts selected in the former process to create lexical conceptual units. After all possible lexical conceptual units have been produced, the final meaning-construction process, which is interpretation, begins to occur. This process allows a language user to give rise to the informational characterisation of each lexical conceptual unit in order for an utterance-level informational characterisation, or a conception, to finally be produced. Evans refers to the second and final processes as fusion. It is worth noting here that it might be misleading to consider these three processes as being distinct. That is, as pointed out by Evans, these processes, particularly the second and final one, are dynamic in nature. Hence, it seems reasonable to consider that their operations interact with each other to give rise to a conception.

3.3.4. Figurative language

One of the key arguments made by LCCM Theory is that both literal and figurative language can be characterised by virtue of the same meaning-construction processes examined in the previous sections. Evans (2009) claims that literal and figurative language form a continuum. Moreover, contrary to the conventional view that metaphor and metonymy, the two instances of figurative

language, are distinct phenomena, Evans argues that they also constitute a continuum. Evans' observation is as follows: Literal conception is produced when primary activation is possible in the primary cognitive model profile associated with a given lexical concept, while figurative conception relating to both metaphor and metonymy is created when primary activation is achieved in the secondary cognitive model profile associated with a given lexical concept due to the impossibility of primary activation in the primary cognitive model profile.

3.3.5. Problem

Thus far, we have seen the overview of LCCM Theory. While LCCM Theory appears plausible in that it attempts to supplement and improve on the previous theoretical frameworks in the fields of both cognitive linguistics and cognitive psychology, there seems to be a problem that should be noted.

The problem relates to the methodology used to identify the distinct lexical concepts associated with a polysemous lexical item. Evans (2009) argues that the semantic and/or formal selectional tendencies associated with each use of a lexical item enable us to distinguish one lexical concept from others. Although the methodology is useful in some cases, it seems to be insufficient in others. By way of illustration, let us consider the following examples:

(1) She got dressed *up*

As will be illustrated in Chapter 6, there is a possibility that the usage of *up* in (1) is associated with multiple lexical concepts. For example, it may be possible to think that the use of *up* in (1) is associated with four lexical concepts, namely the [POSITIVE MENTALITY], [POSITIVE ASSESSMENT], [COMPLETION OF EVENT] and [SOCIAL PROMINENCE] lexical concepts. The possible reasons why this might be the case are as follows: For example, when a person wears formal clothes, which tend to be higher in term of price than are casual clothes, it is usual that she (in some cases, he) puts on makeup and sets her hair more carefully than usual (see Lindner 1981), resulting in a better appearance accompanied not only by her own positive mentality but also by a positive

assessment from other people. In addition, formal clothes are closely related to those who are located higher in terms of social status because there are many more opportunities for them to wear such clothes. Moreover, it may be plausible to consider that the state of being dressed up includes the notion of completion of event in the sense that a person who dresses up can no longer continue the action designated by *dress*. Based on the observations above, it seems that Evans' (2009) purely linguistic criteria fail to identify the multiple lexical concepts associated with one usage.

3.4. A revised version of LCCM Theory

In the previous section, a problem concerning LCCM Theory was identified. In order to make LCCM Theory more reasonable, I propose the following improvement.

The methodology to identify distinct lexical concepts

In order to identify distinct lexical concepts associated with a given lexical item in a more precise way, two types of criteria are needed: 1) the criterion to distinguish one lexical concept from another associated with a given lexical item, and 2) the criterion to identify which lexical concept is included in a given example.

As far as the criterion in 1) is concerned, as noted in previous studies (e.g., Tyler & Evans 2003), various types of experiential correlations can be regarded as playing a crucial role in creating the distinct lexical concepts associated with a given lexical item. For example, it might be considered that the increase in number usage of *up* in *Prices went up* is produced due to the daily experiential correlation between the increase in number of some entities such as sweets in a container and the physically upward orientation of the upper level inside the container. I assume that the more psychologically real the correlation between two types of experiences is among language users, the more influential it is for the derivation of a novel usage associated with a given lexical item.[14] To put this another way, this follows because the stronger the correlation is, the more likely it is that the

[14] It might be possible to validate the extent to which one experience correlates with the other via psychological experiments.

experience that implies a non-physical meaning, or that has not yet become associated with the lexical item, becomes associated with it as a novel usage. Concerning VPCs, I hypothesise that the more VPCs can express the new experience, the more the notion relating to the experience tends to be established as an independent lexical concept of a spatial particle that appears in those VPCs.[15] For example, as will be shown later, it seems that the notion of proximity is shared by a number of VPCs such as *walk up*, *cuddle up* and *gather up*; as a result, it is more likely that *up* in those VPCs came to have a stronger association with the notion of proximity, giving rise to the [PROXIMITY] lexical concept. In other words, it might be considered that the recurring conceptualisation of the same experience by a wide variety of VPCs enables language users to establish the notion relating to the experience as a more robust lexical concept of the spatial particle.

As for the criterion in 2), while the methodology proposed by Evans (2009) is useful in some respects (for example, it may be possible to judge that the use of *up* co-occurring with the lexical item *price* or numbers is likely to be related to the [INCREASE IN NUMBER] lexical concept), it is insufficient for the reason I described above. Therefore, in order to supplement the criterion, both psychological and neuroscientific considerations may be beneficial. For example, from the psychological point of view, experiments might enable us to substantiate that each lexical concept can exist independently (for example, in order to confirm whether *dress up* includes the [POSITIVE ASSESSMENT] or [COMPLETION OF EVENT] lexical concepts, it may be effective to ask subjects to compare *dress up* to *dress* and to answer questions such as which element is included in *dress up* that is not included in *dress*, and so forth). Furthermore, from the neuroscientific point of view, it might be possible to show which area in the brain is activated or what type of substance is secreted when a given example is processed in the mind. Although it is difficult to utilise these three types of evidence in an adequate way at present, as also noted by Evans (2009), this kind of converging

[15] I speculate that the fact that a given experience (or a notion implied by the experience) can be shared by many VPCs reflects the reality that there are many daily experiences that include the notion.

evidence is essential to identify the distinct lexical concepts associated with a given lexical item precisely.

3.5. Application

In the previous section, an improvement to make LCCM Theory more tenable was proposed. I will now present how the revised LCCM Theory will be applied to the research questions I set in the previous chapter. I will reintroduce a number of the research questions that I posited in the previous chapter:

i) What kinds of semantic properties associated with verbs and particles contribute to the meanings of the overall VPCs?

ii) What kinds of semantic properties associated with verbs and particles distinguish one meaning of the same VPCs from another?

iii) What kind of conceptual information associated with verbs and particles contributes to the meanings of the overall VPCs?

iv) How does the linguistic information associated with verbs and particles provide access to the information in the conceptual system to produce the meanings of the overall VPCs?

v) How do other sentential contexts influence the creation of the meanings of the overall VPCs?

In light of LCCM Theory, these research questions can be paraphrased as follows:

i) What kinds of lexical concepts associated with a verb and a particle contribute to the informational characterisation of the overall VPC?

ii) What kinds of lexical concepts associated with a verb and a particle distinguish one informational characterisation of the same VPC from another?

iii) What kinds of cognitive models associated with a verb and a particle contribute to the informational characterisation of the overall VPC?

iv) How do the lexical concepts associated with a verb and a particle provide access to the corresponding cognitive models to produce the informational characterisation of the overall VPC?

v) How does the utterance context influence the achievement of the informational characterisation of the overall VPC?

Firstly, in order to identify the distinct lexical concepts associated with a verb and a particle comprising a VPC, the Semantic and Formal Selectional Criteria supplemented by the other psychological and neuroscientific information will be applied to the verb and particle, respectively. That is, what kinds of vehicles and lexical concepts with which each verb or particle can co-occur, or their lexical profiles, are necessary to be clarified to distinguish one lexical concept from another associated with the same verb and particle, respectively. The same sets of criteria will then be applied to the overall VPC; consequently, the distinct lexical concepts associated with it will be identified. Due to the processes thus far, the kinds of lexical concepts associated with each verb and particle that make a semantic contribution to a particular lexical concept associated with the overall VPC will be identified (the first and second research questions will be answered). Next, based on work on knowledge representation conducted by cognitive psychologists (e.g., Barsalou 1991, 1999), the detailed structure of the cognitive models associated with the verb will be investigated. As for the cognitive models for the spatial particle, based on Evans (2009), I claim that they cannot exist independently; that is, they are likely to be incorporated into those associated with the VPCs in which they occur. The detailed structure of the cognitive models associated with each distinct lexical concept exhibited by the overall VPC will then be examined. Due to the identification of these cognitive models (more precisely, possible predictions at this time), the kinds of cognitive models associated with the verb that contribute to particular cognitive models associated with distinct lexical concepts for the overall VPC will be provided (the third research question will be answered). Based on the meaning-construction processes posited by LCCM Theory, how the lexical concepts associated with each verb and particle afford access to the corresponding cognitive model will then be presented (the fourth research question will be answered). Similarly, based on the meaning-construction processes assumed by LCCM Theory, how the utterance context affects the achievement of the informational characterisation of the overall VPC will be investigated (the fifth research question will be answered).

3.6. Summary

In this chapter, I provided an overview of LCCM Theory, as well as the relevant theories that I adopt in this thesis. I then identified a problem to be addressed and showed how the revised LCCM Theory could be applied to the current research questions.

In Chapters 4 and 5, the historical development of the semantics of *up* will be addressed, which I assume could be the best resource to anticipate the derivational process of each lexical concept associated with *up* in the mind of a contemporary language user. In Chapter 6, the semantic network of *up* in the mind of a contemporary language user will be identified. In Chapter 7, building upon the observations of the previous chapters, the motivations for the distinct lexical concepts associated with an identical VPC focusing on *pick up* will be investigated.

Chapter 4 The historical development of the semantics of *up* within VPCs

This chapter is concerned with examining the historical development of the semantics of *up* within English verb-particle constructions (VPCs). In particular, I investigate how each specific usage was derived historically to create a number of lexical concepts. The rationale for considering the historical development of usages/lexical concepts for *up* within VPCs here is that I assume it could be the best resource by means of which to anticipate the derivational process(es) of each lexical concept associated with *up* in the mind of a contemporary language user (e.g., Cuyckens 1999, Geeraerts 2006), though, as pointed out by Traugott and Dasher (2001), historical development differs from the cognitive processes utilised by language users in terms of directionality.[1] Hence, the principal claim that I make in this chapter is that the detailed examination of the historical development of *up* enables us to better identify the semantic network of *up* in the mind of a contemporary language user, which in turn leads to a better characterisation of the semantics of *up*, which contributes to the semantics of VPCs in which they appear. By way of illustration, let us consider the following examples:

(1) Þonne hate we hine morgensteorra, forþam he cymð eastan *up*
'Then we call him the morning star, for that he comes up from the east'
(c888[2] Ælfred tr. Boethius De Consol. Philos. xxxix. §13)

(2) Ic eom hælende crist þe ... gedyde þæt leoht *up* asprang
'I am saviour Christ who … did the light sprang up'
(c1000 Ælfric Lives Saints xxx. 61)

(3) Bynd þine tonge wiþ bonene wal; Let hit don synke, þer hit *up* swal
'Bind your tongue with a gentle wall; Let it done sink, there it swollen up'
(c1310 Prov. Hendyng 142 (Harl. 2253))

(4) To speak ill of the dead or to cast *up* their demerits
(1604 *Glasgow Kirk Sess. Rec.* in Hist. Glasgow (1881) xvii. 149)

According to the *Oxford English Dictionary* (OED), the usage of *up* is considered to be associated with the 'from beneath the horizon to the line of vision' meaning in (1), the 'into existence, prominence, vogue, or currency; so as to appear or prevail' meaning in (2), the 'so as to form a heap or pile, or become more prominent' meaning in (3), and the 'as a charge or accusation' meaning in (4).

[1] Based on a significant quantity of evidence, Traugott and Dasher (2001) argue that, from a historical point of view, meaning changes are always unidirectional, that is, changes always occur from one linguistically coded meaning to another, while meaning changes in the human cognitive system are bidirectional, that is, both generalisation and narrowing are possible when humans learn and use a language.

[2] The date indicated here is the one on which each instance of *up* first appeared (at least, among the data available to the OED compilers).

These examples illustrate that the spatial particle *up* within VPCs had developed a wide variety of uses historically, coming to exhibit polysemy. While some scholars (e.g., Cuyckens 1999) argue for the importance of dealing with the historical development of a polysemous item to substantiate the analysis of the semantic network that resides in a contemporary language user, few semantic network approaches have focused on their historical backgrounds. Therefore, employing the functional approach adopted by a number of scholars (e.g.,Vandeloise 1991, 1994; Tyler and Evans 2003; Evans 2009, 2011), this chapter investigates how each usage was derived to create a number of distinct lexical concepts historically.

According to the OED, it seems that *up* developed its uses via several grammatical roles. In order to confine them to their roles as spatial particles, only one of these is addressed in this chapter: *up* as an adverb which co-occurs with a particular verb within VPCs. The OED classifies a large number of instances with this type of *up* into 23 main groups, each of which has several instantiations, on the basis of their semantic differences.[3] Seven of these groups are considered to include *up* in relation to a physically upward orientation, while the remaining 16 groups are regarded as involving a usage of *up* that is figurative in nature.

This chapter consists of three sections. Section 1 offers a detailed explanation of each lexical concept. Section 2 proposes the historical development of the semantic network of *up*. Section 3 provides a brief summary.

4.1. Lexical concepts associated with *up* as a spatial particle within VPCs

In the following section, I will deal with each lexical concept in turn.

4.1.1. Physically Upward Orientation

As mentioned above, the OED divides the meanings of *up* relating to a physically upward orientation into seven groups. These are summarised in Table 4.1:

[3] Here 'the semantic differences' do not exactly mean the differences among the distinct senses supposed to be associated with *up*. The OED appears to classify those instances with *up* into many more groups than expected by our criteria to distinguish among the distinct senses associated with a polysemous item.

Table 4.1. The classification of the meanings of *up* relating to physically upward orientation (OED)

Date[4]	Meaning	Example
c888	1. a. To or towards a point or place higher than another and lying directly (or almost directly) above it; so as to raise or bring, come or tend, to or towards a higher position in space.	Ile creepe vp into the chimney. (1602 Shakespeare *Merry Wives of Windsor* iv. ii. 48)
a900	b. Towards or above the level of the shoulders or head.	Casting up his hand he felt hair on his face. (1590 T. Lodge Euphues' Golden Legacie (1887) 21)
c897	c. So as to raise into a more erect (or level) as well as elevated position.	Yf I be rightuous, yet darre I not lift vp my heade. (1535 *Bible (Coverdale)* Job x. 15)
c900	d. So as to raise a thing from the place in which it is lying, placed, or fixed.	As soon as they could get up their Anchors they sailed away. (1694 *London Gaz.* No. 3023/1)
a1300	e. So as to invert the relative position of things or surfaces; so as to have a particular surface facing upwards.	'We tossed up' to settle the question ... . 'Heads' came up. (1834 T. De Quincey *Sketches Life & Manners* in *Tait's Edinb. Mag.* Mar. 86/2)
c888	2. a. Towards a point overhead, or away from the surface of the earth; into the air.	The fresh coals … will throw up … as usual, a body of thick smoke. (1833 J. Holland *Treat. Manuf. Metal* II. vii. 189)
c900	b. With defining or restrictive adv. or prep. phr.	Vines growing up high upon the Elmes. (1617 F. Moryson *Itinerary*i. 206)
c897	c. To some height above the ground or other surface; from or off the ground; *spec.* to a seat on horseback; to or towards the mast-head.	Up goes the Jolly Hodge, the old black flag. (1821 Scott *Pirate* III. xiii. 309)
c1000	d. So as to be suspended aloft or on high; into a hanging position.	The Dutch … hang up in several of their Streets what they call the Sign of the Gaper. (1711 J. Addison *Spectator* No. 47. ¶3)
c888	3. a. From beneath the horizon to the line of vision.	The welcome Sun, just verging up at first, By small Degrees extends the swelling Curve. (1744 J. Thomson *Winter* in *Seasons* (new ed.) 228)
c888	b. From below the level of the earth, water, etc., to the surface.	A thick and prodigious quantity of the common mustard plant shot up. (1866 W. E. Shuckard *Brit. Bees* 223)
a1100	c. So as to detach from being fixed in the soil or other surface.	The turnips were taken up and carted. (1841 *Jrnl. Royal Agric. Soc.* **2**ii. 229)
c1000	d. From the stomach into, or out at, the mouth; out of the sea on to the shore, etc.	Fetch vp What thou hast swallowed. (1622 T. Dekker & P. Massinger *Virgin Martir* v. sig. L)
a900	4.a. So as to extend or rise to a higher point or level, esp. above the surface of the ground.	At the rear of the palace soars up the old Abbey (1858 E. Bulwer-Lytton *What will he do with It?* i. iv)
1473-4	b. With indication of a point of measurement.	All the rest mere flat wall, wainscoted two-thirds up, eight feet or so. (1877 J. Ruskin *St. Mark's Rest* Suppl. i. 5)
c1310	c. So as to form a heap or pile, or become more	The sediment called smitham is taken out,

[4] The date indicated here is the one on which each instance of *up* first appeared (at least, among the data available to the OED compilers).

	prominent.	and piled up in heaps. (1839 A. Ure *Dict. Arts* 751)
a1240	5.a. So as to raise or rise from a horizontal, relaxed, or drooping posture to an upright or nearly upright position.	The Doctor … drew himself up in offended dignity. (1850 *Tait's Edinb. Mag.* June 342/2)
c900	b. Upon one's feet from a recumbent or reclining posture; *spec.* out of bed.	I went to bed, and did not get up till the lamps were being lighted in Piccadilly. (1865 L. Oliphant *Piccadilly* (1870) 317)
c1000	c. So as to rise from a sitting, stooping, or kneeling posture and assume an erect attitude.	The rebel may stand up in bold defiance. (1877 C. H. Spurgeon *Serm.* XXIII. 82)
c900	6.a. So as to mount or rise by gradual ascent, in contact with a surface, to a higher level or altitude; sometimes *spec.* = up-stairs.	The moving Moon went up the sky And no where did abide: Softly she was going up. (1798 S. T. Coleridge *Anc. Marinere* iv, in Wordsworth & S. T. Coleridge *Lyrical Ballads* 23)
847	b. To a higher point on or within a river, channel, etc., or a point further from the sea.	The voyage up, with the trade good, is done in a canoe. (1881 J. Hatton *New Ceylon* v. 136)
c893	c. On shore; from the sea; at land. *Obs.*	Þe navy of Danes rove up at Sandwyche [*Sandwicum appulit*]. (1387 J. Trevisa tr. R. Higden *Polychron.* Rolls Ser. VII. 87/1)
1382	d. In conventional uses	Pope … resolved to go up to London. (1820 *Examiner* No. 615. 57/2)
1591	e. *Naut.* To windward.	This … brought the ship up in the wind. (1830 F. Marryat *King's Own* I. xvi. 250)
c900	7.a. So as to direct the sight to a higher point or level.	His eyes … cast up to count the peaches on the wall. (1859 G. A. Sala *Twice round Clock* 39)
c897	b. So as to cause sound to ascend, increase, or swell.	Sound drummes & trumpets, sound vp cheerfully. (1595 W. S. *Lamentable Trag. Locrine*ii. vi. 28)

Like earlier studies (e.g., Lindner 1981, Tyler and Evans 2003), I assume that this lexical concept functions as the primary one, that is, this is included in a wide variety of physical scenes from which all the other lexical concepts are derived directly or indirectly. Although all the usages explicated in Table 4.1 appear in various types of sentential contexts, I argue that the lexical concept shared by almost all the examples is [PHYSICALLY UPWARD ORIENTATION].[5] I argue that this is the case because, when the conceptual information evoked by the physical circumstances in which each usage appears is dissolved into components according to the psychological assumption concerning the conceptual system (e.g., Barsalou 1999), it always includes 'physically upward orientation' as its component. To clarify this point, let us consider the following diagram:

[5] As we will see later, it seems plausible to classify the usage exemplified in *Pope … resolved to go up to London* into figurative ones.

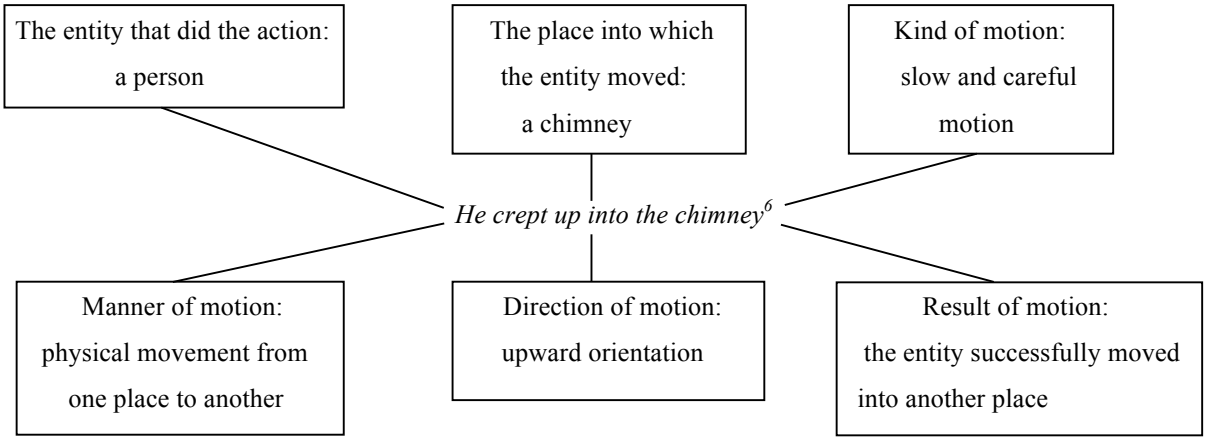


Figure 4.1. The conceptual information evoked by the physical scene *He crept up into the chimney*

Figure 4.1 represents the conceptual information evoked as a result of interacting with the physical scene in which a man crept up into a chimney directly or via a linguistic resource. Assuming that, due to the cognitive ability of selective attention, the conceptual system is componential in nature (e.g., Barsalou 1999), it is possible to view the conceptual information associated with this physical scene as consisting of (at least) six components: the entity that completed the action (a person), the place into which the entity moved (a chimney), the kind of motion (a slow and careful motion), the manner of motion (a physical movement from one place to another), the direction of motion (upward orientation), and the result of motion (the entity successfully moved into another place).[7] What should be noticed here is that 'physically upward orientation' can be extracted as a single component. I argue that the same holds true for almost all the other examples above. In addition, the physical scenes relating to a number of examples seem not to include the element of physically upward orientation on their own. However, they can be interpreted as involving the element through the human cognitive system. To illustrate, let us consider the following diagram:

[6] The italics signify the physical scene represented by the linguistic expression.
[7] Based on Martin's (2007) functional neuroimaging analysis, it is more likely that object concepts belonging to different categories such as animate (here, a human) and inanimate objects (here, a chimney) are stored in a different area in the brain.

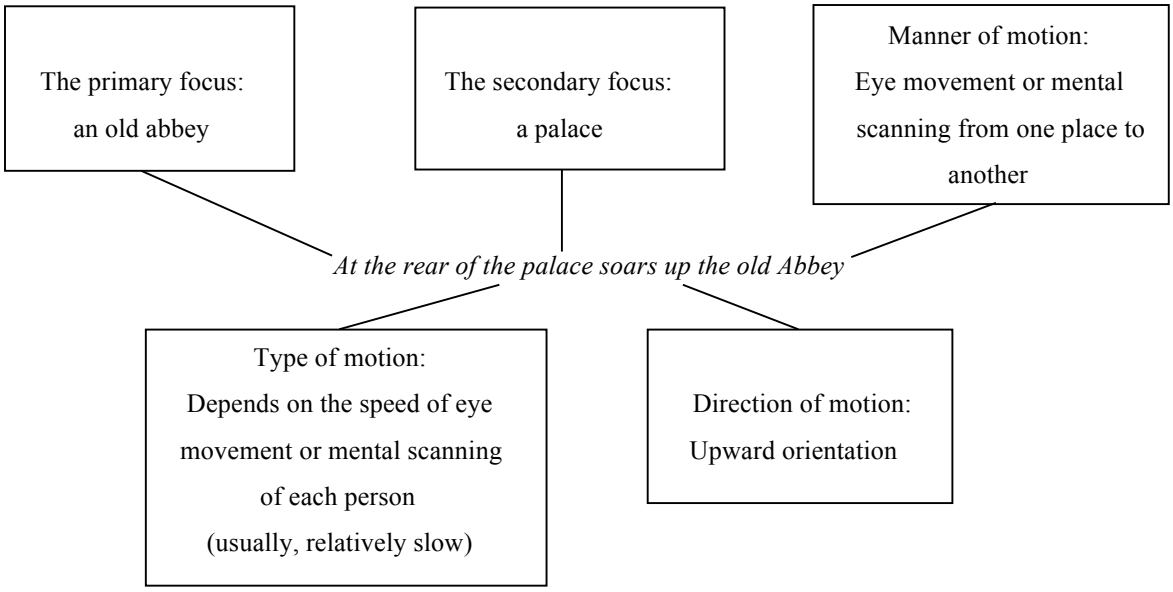


Figure 4.2. The conceptual information evoked by the physical scene *At the rear of the palace soars up the old Abbey*

Figure 4.2 represents the conceptual information evoked as a result of interacting with the physical reality – that at the rear of the palace stands the old abbey – either directly or via a linguistic resource. What is important to note here is that the element of motion is included among the cognitive models associated with the physical scene despite the scene itself not implying any motion. When attempting to model how this kind of physical scene is processed in the mind, it is crucial to pay attention not to the scene itself, but to how a human would capture the scene. As is obvious from the selection of the verb *soar* to represent this physical scene, the person who produced the expression captured the scene in terms of motion. I argue that the element of physically upward orientation can be extracted not only from physical scenes that include actual motion but also from physical scenes that can be expressed in terms of fictive motion (Talmy 2000).

4.1.2. Figurative meanings

Having examined the meanings relating to physically upward orientation in the previous section, we now investigate the figurative meanings of *up*, which are summarised in Table 4.2:

Table 4.2. The classification of figurative meanings of *up* (OED)

Date	Meaning	Example
c825	1. a. From a lower to a higher status in respect of position, rank, or affluence.	We are getting up in the world. (1832 H. Martineau *Life in Wilds* vii. 99)
1627	b. Into (greater) repute, credit, or estimation.	[Queen Victoria] spoke ... of Roundell Palmer; I had a good opportunity of speaking him up. (1863 W. E. Gladstone *Let.* 28 Sept. in J. Morley *Life Gladstone* II. v. vi. 99)
c888	2. a. To a higher spiritual or moral level or object.	It is a good while before we can get up our hearts from earth to heaven. (*a*1708 W. Beveridge *Thes. Theologicus* (1711) III. 410)
1297	b. To a state of greater cheerfulness, confidence, resolution, etc.	He brightens up and is wide awake when Homer is ... recited. (1871 B. Jowett in tr. Plato *Dialogues* I. 229)
1340–70	c. Into a state of activity, commotion, excitement, or ferment.	If I were to hear any body speak slightingly of you, I should fire up in a moment. (*a*1817 J. Austen *Northanger Abbey* (1818) I. vi. 71)
1538	d. To or at a greater or higher speed, rate, amount, etc.	Carry had better hurry up and get that house in Park Street. (1900 E. Glyn *Visits of Elizabeth* (1906) 105)
a900	3. To or towards mature age, or proficiency in some art, etc.	His children, one of whom is growing up. (1871 B. Jowett in tr. Plato *Dialogues* I. 180)
c1000	4.a. Into existence, prominence, vogue, or currency; so as to appear or prevail.	Dinner ready… Smyth, however, had not turned up. (1902 T. W. Webber *Forests Upper India* xiii. 156)
a1723	b. So as to be heard.	The bell from the Pavilion strikes up. (1853 *Public School Matches* 10)
a1122	5.a. To the notice or consideration of a person or body of persons (*spec.* of one in authority).	The writ went up to the Lords. (1844 *Fraser's Mag.* **30** 504)
c1440	b. Before a judge, magistrate, etc.	I was unfortunately called up to give evidence against him. (1753 *World* 30 Aug. 110)
1593	c. So as to divulge, reveal, disclose, or let out.	A long article in the Quarterly Theological Review has fairly shown up the Yankee divine. (1826 *Blackwood's Edinb. Mag.* Aug. 325/2)
1604	d. As a charge or accusation.	The children in the street throws it up against me I ain't got no father. (1890 *Universal Rev.* 15 Oct. 198)
1132	6.a. Into the hands or possession of another.	They were assured that no harm should befal them if they gave up Bessus. (1839 C. Thirlwall *Hist. Greece* VI. 281)
c1290	b. So as to relinquish, abandon, or forsake.	So turn up the job, ... And leave it to me! (1885 *Punch* 13 June)
c1290	7. Into a receptacle or place of storage, as for security, convenience, or use when required.	The heat of the sun is stored up in coal. (1879 H. George *Progress & Poverty* i. ii. 36)
a1400–50	8. Into one's possession, charge, custody, etc.	Permission is hereby granted ... for to take vp a certaine piece of land for himself and his heires. (1674 *Pennsylvania Arch.* I. 33)
c1275	9. Into the position or state of being open.	Up the door flew—like a fury, In came Watty's scawlin' wife. (1796 A. Wilson *Watty & Meg* 6)
1377	10.a. Into an open or loose condition of surface.	To endure the more pain when they should be cut down and ripped up.

		(1721 J. Strype *Eccl. Memorials* I. xxviii. 197)
14 ...	b. So as to sever or separate, esp. into many parts, fragments, or pieces.	Breake vp the Seales, and read. (*a*1616 Shakespeare *Winter's Tale* (1623) iii. ii. 131)
	11. To or towards a state of completion or finality. (Frequently serving merely to emphasise the import of the verb.)	
c1374	a. With verbs denoting consuming or destroying.	The spendthrift had ... sold up the remainder of his furniture. (1894 H. Caine *Manxman* 419)
1307	b. With other verbs, denoting progress to or towards an end.	Beat up the yolks of three eggs. (*a*1756 E. Haywood *New Present* (1771) 158)
1419–20	c. With verbs denoting cleaning, putting in order, or fixing in place.	I polished up the handle of the big front door. (1878 W. S. Gilbert *H.M.S. Pinafore* 1)
c1400	12. a. By way of summation or enumeration.	All my years when added up are many. (1871 B. Jowett tr. Plato *Dialogues* I. 125)
?c1200	b. To a final or total sum or amount.	His deceased children were alive still in heaven; and the ten more given him here, make them up twenty. (1629 J. Cole *Of Death* 195)
c1374	13.a. Into a close or compact form or condition; so as to be confined or secured.	Old Sophy ... bound up her long hair for her sleep. (1861 O. W. Holmes *Elsie Venner* II. xxviii. 229)
1490	b. Into a closed or enclosed state; so as to be shut or restrained.	The English men which were shut up in the Castel. (1569 R. Grafton *Chron.* II. 528)
c1400	c. So as to cover or envelop.	If the wound is covered closely up. (1837 P. Keith *Bot. Lexicon* 151)
a1450	a. Into a state of union, conjunction, or combination; so as to bring together.	These substances ... being made up of three or four elements. (1846 W. B. Carpenter *Man. Physiol.* 8)
a1568	b. So as to supply deficiencies, defects, etc.	To fill up as any deficiencies happen. (1755 Johnson *Dict. Eng. Lang.*at *To Supply*)
1362	15.a. To or towards a person or place; so as to approach or arrive.	The Spring comes slowly up this way. (1816 S. T. Coleridge *Christabel* i. 4)
1513	b. To or towards a particular point or line.	To even up my account with his people. (1901 *Munsey's Mag.* **25** 371/1)
1535	c. To or into later life.	We were tried Friends: I from my Childhood up Had known him. (1814 Wordsworth *Excursion* i. 5)
a1622	d. So as to find, come upon, overtake, or keep on the track of.	I ... hit off the tracks of a large herd of bison and followed them up. (1879 F. T. Pollok *Sport Brit. Burmah* II. 204)
1623	16. To a stop or halt.	When the river is foggy, the boats have to bring up at night. (1891 C. Roberts *Adrift in Amer.* 214)

In the following section, we examine the historical development of each figurative lexical concept.

4.1.2.1. Increase in Number (Amount)

I argue that each lexical concept is derived from a number of ubiquitous physical scenes. In order to predict the derivational processes of this lexical concept, let us consider the following examples in chronological order[8]:

[OE][9]
(1.1) Meaning: Until or towards maturity (a900)
Example: a. [Hilarion] wæs *up* cymen in Palestina
b. The child, whiche hadde be secretely nourisshed and brought *vp* cam to his enherytaunce (1484)
c. As soon as they were grown *up* to be Men (1712)
[EME]
(1.2) Meaning: To a final or total sum or amount (?1200)
Example: a. Seofenn siþe sexe gan. Ȝiff þatt tu willt hemm sammnenn *Vpp* inn till fowwerrtiȝ & twa.
b. His deceased children were alive still in heaven; and the ten more given him here, make them *up* twenty (1629)
[LME]
(1.3) Meaning: By way of summation or enumeration (c1400)
Example: a. Clannesse who-so kyndly cowþe comende, & rekken *vp* alle þe resounz þat ho by riȝt askez.
b. But who can number *up* his labours? (1727)
[EModE]
(1.4) Meaning: To or at a greater or higher speed, rate, amount, etc. (1538)
Example: a. *Equus citatus*, a horse taken *vp*
b. Wool would go *up* a penny a pound (1883)
c. Carry had better hurry *up* and get that house in Park Street (1900)

Firstly, I argue that the 'until or towards maturity' usage was derived from the physical scenes illustrated in (1.1). That is, the close relation between approaching maturity and increasing height gave rise to the usage implying the notion of 'increase in number'. It is possible that this sort of experiential correlation functioned as a prompt giving rise to the lexical concept 'increase in number'. Another likely derivational process of this lexical concept relates to the derivation of the use of *up* in (1.2). As noticed by several scholars (Lakoff and Johnson 1980a; Grady 1997; Tyler and Evans 2003), it is more likely that the usage was produced due to the close relationship between the increase in number or amount in a container and the physically upward orientation of the level of liquid or other matter inside the container, as schematically depicted in Figures 4.3 and 4.4:

[8] As for the periodisation, I follow Thim (2012): 'Old English (OE)' (all English texts before 1100), 'Early Middle English (EME)' (up to 1340), 'Late Middle English (LME)' (up to 1500), 'Early Modern English (EModE)' (up to 1700), and 'Late Modern English (LModE)' (up to 1945).
[9] This means that this usage first appeared in Old English.

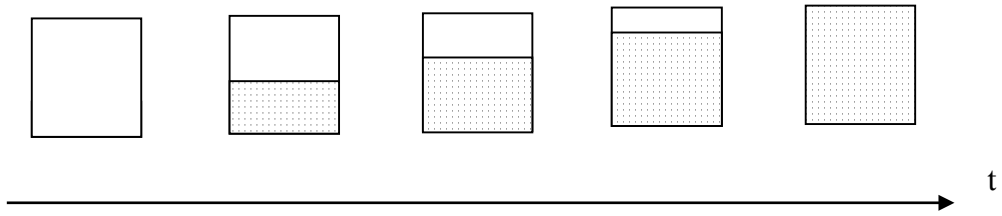


Figure 4.3. Schematic representation of the relationship between the increase in amount and physically upward orientation

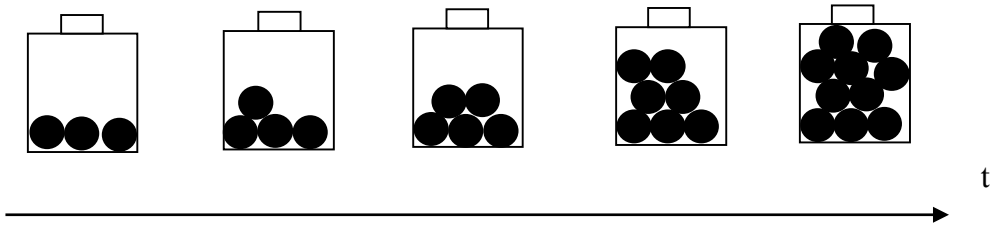


Figure 4.4. Schematic representation of the relationship between the increase in number and physically upward orientation

I speculate that this sort of experiential correlation gave rise to the [INCREASE IN NUMBER] lexical concept. The use of *up* in (1.3) can be considered to be a variant produced by the same type of physical scene relating to the usage of *up* in (1.2). With regard to the usages of *up* in (1.4), as pointed out by Lindner (1981), it seems that these are based on 'the relatively abstract association of greater degree with greater quantity' (p. 120). That is, it is arguable that certain experiential correlations exist, such as the experience of an increase in heart rate when a person runs at speed. It is therefore likely that humans tend to interpret greater degree in terms of greater quantity.[10]

Concerning a number of usages that are considered to include the same lexical concept, I propose the following hypothesis:

(h1) It is fundamental that each usage be derived from the physical scene relating to itself directly. When the usage(s) that share(s) the same lexical concept exist(s) in advance, the usage(s) that exist(s) in advance play(s) a role in validating a novel usage.

[10] This matter will be addressed in future research.

Employing this hypothesis, I assume that each usage tends to be derived from the physical scene directly relevant to itself and that the earlier usages sharing the same lexical concept (here, [INCREASE IN NUMBER]) play a role in validating novel usages.

Based on these observations, I claim that the semantics of the [INCREASE IN NUMBER] lexical concept were developed as shown in the following figure:

Increase in height → Increase in number/amount → Increase in degree

Figure 4.5. The semantic development of the lexical concept 'increase in number'

4.1.2.2. Ceasing to Interact

In the same way as in the case of the [INCREASE IN NUMBER] lexical concept, I assume that this lexical concept arose from interaction with a number of ubiquitous physical scenes. By way of illustration, let us consider the derivational processes of the following usages in chronological order:

[EME]
(1.5) Meaning: Into the hands or possession of another (1132)
Example: a. [The king] dide him gyuen *up* ðet abbotrice of Burch
b. Here y resyngn *op* þe crone ... of Engeland into þe Popis Hande (c1400)
c. He ... yielded himself *up* a prisoner (1801)
(1.6) Meaning: So as to relinquish, abandon, or forsake (c1290)
Example: a. He was neiȝ ope þe pointe þene gost *op* to ȝelde
'He was near the point to yield *up* to the terror'
b. Hauing taken out the artillerie, goods, victuals, and gold ... We gaue her *vp*, 25 degrees by North the line (1589)
c. Bad games are thrown-*up* too soon, Until th' are never to be won (1678)
d. So turn *up* the job, ... And leave it to me! (1885)

First of all, the earlier usage of *up* in (1.5) arose in connection with the combination of the verb *give* with *up* whose meaning is social prominence, that is, the *up* is closely related to higher social statuses. Based on the fact that, in earlier usages, those who become new possessors are always located higher in terms of social status, I speculate that the later use of *up* in (1.5) and the use in (1.6) were derived from the inseparable correlation between handing something over to a superior possessor and the complete disappearance of the interaction between its prior owner and the thing being handed over. It is possible that the usage in (1.5) prompted the creation of the [CEASING TO INTERACT] lexical concept. Concerning the usages related to this lexical concept, it is reasonable to think that some were derived from the use in (1.5), while

the others were derived from the meaning associated with a combination of a specific verb with *up*. For example, it is likely that the use of *up* in (1.6c) was derived from the inseparable relationship between throwing up something unnecessary (e.g., a failed lottery ticket) and abandoning it, and that the usage of *up* in (1.6d) was derived from the inextricable association between turning the soil to bring something up out of the ground (e.g., tulip bulbs) and abandoning it (as unnecessary). Employing the hypothesis relating to a number of usages sharing the same lexical concept (h1), I speculate that each usage has a tendency to be derived from the physical scene directly relevant to itself and that earlier usages play a role in validating novel usages sharing a lexical concept (here, the [CEASING TO INTERACT] lexical concept).

4.1.2.3. Positive Assessment

Similar to the earlier lexical concepts, I speculate that this lexical concept was derived as a consequence of human interaction with a number of ubiquitous scenes. To illustrate, let us consider the derivational processes of the following usages:

[OE]
(1.7) Meaning: From a lower to a higher status in respect of position, rank, or affluence (c825)
Example: a. Dryhten ... hefeð *up* ðe þæt ðu ineardie eorðan
'God lifts up or lives in the tomb'
b. I am come *up*, as a man is that from povertie is come to rychesse ... He his mervaylously come *up* within a yere or two (1530)
c. We are getting *up* in the world (1832)

[EModE]
(1.8) Meaning: Into (greater) repute, credit, or estimation (1627)
Example: a. When she *vp* is cride; Of all Angellique excellence the Prime
b. Instead of writing *up* the other Protestant Churches to the Church of England (1707)
c. [Queen Victoria] spoke ... of Roundell Palmer; I had a good opportunity of speaking him *up* (1863)

Firstly, from (1.7a), it can be supposed that the notion of positive assessment arose from the cultural belief that God resides in the heavens (or upward) and that his place of residence is good (positive assessment). In reality, it is also common for people of higher social status to live in elevated locations. Furthermore, I also argue that the instance of *up* in (1.7) derives from the close relationship between several physical and non-physical scenes and the upgrading of social status. For example, promotions in the workplace often result in an increase in salary (i.e., an increase in number/amount), resulting in the attainment of a higher standard of living (social prominence). In addition, due to higher status in the workplace, such people often need to do more work accompanied by more responsibility (an increase in amount). Furthermore,

since attaining higher social status often results in the receipt of positive assessments from others, it is plausible that this usage implies the [POSITIVE ASSESSMENT] lexical concept. The use of *up* that most clearly represents this lexical concept is that contained in (1.8). I argue that this use was derived from the usage of *up* as it appears in (1.7), or the following sort of inextricable association: when people view what they are about to say as important or favourable, they often express it in a louder voice, which in turn can be characterised by virtue of the abstract association of greater degree with greater quantity accompanied by a physically upward motion.

4.1.2.4. Positive Mentality

I assume that this lexical concept incorporates two variants: favourable and unfavourable positive mentality. In the following section, we consider the derivational processes of these two usages:

[EME]
(1.9) Meaning: To a state of greater cheerfulness, confidence, resolution, etc. (1297)
Example: a. ȝoure herten hebbeþ *vp* ... . Hopieþ al on god.
'Your heart lifts up… hopes all on God'
b. O thow ... that rayses *vp* my courage and abaites (c1600)
c. He brightens *up* and is wide awake when Homer is ... recited (1871)
[EME~LME]
(1.10) Meaning: Into a state of activity, commotion, excitement, or ferment (1340–70)
Example: a. Stiue stormus of þe wind stiren *vp* þe wawus.
b. She fired *up* at the arrogance of the squire (1824)
c. Work the crowds *up*, ... but don't get caught yourselves (1901)

Firstly, as suggested by both the example (1.9a) and by Kövecses (1991), the concept of favourable positive mentality originally arose from the cultural belief that God resides above the clouds (i.e., above or upwards), and if our souls could remain there, we would be happy. Based on Lindner (1981) and Kövecses (1991), I argue that this is also substantiated by the inseparable relationship between greater degree and greater amount. Put differently, feelings of happiness or courage are commonly accompanied by a rise in body temperature and an increase in pulse. It is possible that such physiological changes are interpreted in terms of the increase in number or amount, which can be characterised in terms of upward orientation. That is to say, the happier one feels, the more one's body temperature rises and pulse increases (although the maximum is limited). Furthermore, as noted by Grady (1997), it is also likely that the usage was affected by the connection between happiness and upright posture. This

insight is substantiated by the findings of behavioural science researchers (Peper et al. 2017), who have found that sitting up straight makes us more likely to recall positive memories or think positive thoughts of a more general nature. Furthermore, Kövecses (1991) implies that the following kinds of experiential correlations influenced the creation of this usage: when we are happy, we tend to smile, causing the corners of the mouth to turn upwards. Similarly, the feeling of happiness often causes us to want to jump upwards.

In the same way, I also argue that the usage of unfavourable positive mentality as in (1.10) was derived from a comparable physical experience, in which a person's pulse or body temperature increases or rises due to the physiological state of unfavourable positive mentality such as anger. In addition, when a person is angry, they tend to speak in a louder voice, which can be characterised in terms of upward orientation, as is often seen in cartoons.

Of course, it seems plausible to think that a vast number of VPCs (such as *brighten up* or *fire up*) came to be associated with this usage via conceptual metaphors (such as HAPPINESS IS LIGHT (Kövecses 1991) or ANGER IS HEAT (Kövecses 1986)) on the basis of the correspondences between these figurative and the original literal usages. To clarify, let us consider the following example:

(1.11) She *fired up* the kiln to make pottery (Lindner 1981)

Even when conceptual metaphors appear to be predominant factors in the derivation of a novel usage, it is reasonable to assume that a number of physical scenes affected the creation of figurative usages, as demonstrated below. When a person fires up a kiln, they usually experience heat due to the rise in temperature both within and around the kiln. As a result of this experience of heat, their body temperature usually rises and their face turns red. Comparable physiological changes are likely to occur when people are angered. Due to the established relationship between firing up equipment such as a kiln and the physiological changes accompanying this action, and between the same sorts of physiological changes and a descent into anger, the usage exemplified in (1.10b) can be derived.

Here, I claim that two types of the [POSITIVE MENTALITY] lexical concept arose from the same sorts of physical scenes relating to the physiological phenomena.

4.1.2.5. Proximity

I claim that this lexical concept was also derived from a number of ubiquitous physical scenes. Here, let us consider the derivational processes of the following usages:

[LME]
(1.12) Meaning: To or towards a person or place; so as to approach or arrive (1362)
Example: a. Þe lewede Men ... comen *vp* knelynge.
'the lay men ... come up kneeling'
b. The Spring comes slowly *up* this way (1816)
[EModE]
(1.13) Meaning: So as to find, come upon, overtake, or keep on the track of (a1622)
Example: a. Being out of hope to fetch *up* this shippe.
b. They enter ... with a view of ... hunting *up* the sturdy bear (1791)
c. I ... hit off the tracks of a large herd of bison and followed them *up* (1879)

I assume that the usage of *up* in (1.12) was derived in the context of the following daily experience: when a person is in a situation where someone is approaching them or they are approaching someone, the head of the other person appears to move upward (cf., Lakoff and Johnson 1980a). In addition, their footsteps tend to grow louder, and if they are wearing perfume, the smell grows stronger (the correlation of greater degree with greater amount). Due to the inseparable relationship between the approach of someone and the upward motion of their head, the more distinct sound of their footsteps, and their more distinct smell, *up* came to be associated with the action of approaching, culminating in the close correlation with the notion of 'proximity.' In (1.12), upward orientation is no longer included due to the abstract nature of the subject *spring*. Nevertheless, *up* is utilised to represent 'proximity' because of their established relationship. Furthermore, I assume that the usage of *up* in (1.13) was derived from the physical scenes relating to the derivation of the usage in (1.12). In other words, it is usual that, the closer someone or something becomes, the larger they appear, that is, the more elevated the top half of their body becomes, and the louder the sounds they make become. Since finding or following someone or something implies proximity to that entity, I argue that the inseparable relationship between physically upward orientation and finding or following someone or something influenced the creation of this usage.

4.1.2.6. Beginning of Event

This lexical concept, too, was arguably derived from a number of ubiquitous physical scenes. To illustrate, let us consider the following usage:

[EME~LME]
(1.14) Meaning: Into a state of activity, commotion, excitement, or ferment (1340–70)
Example: a. Stiue stormus of þe wind stiren *vp* þe wawus.
'The wind of stiff storms stir up that blow.
b. I shall write to my lawyers to stir *up* our detectives (1885)

We saw above that the instance of *up* in (1.14b) is closely associated with the [POSITIVE MENTALITY] lexical concept. However, taking into account the gradual nature of the mind, it seems to be common for one usage to incorporate a number of lexical concepts at the same time. Here, I predict that the usage of *up* in (1.14) also includes the [BEGINNING OF EVENT] lexical concept. More specifically, in the world in which we live, the beginning of an event or activity can frequently be characterised in terms of a physically upward orientation. For example, when a person manipulates a physical object in an upward orientation, it is usually to commence some kind of activity. If the object, for instance, is a tennis racket, the upward motion may herald the beginning of a game of tennis. Alternatively, when rising from a stooping posture, the person so rising is usually about to commence some kind of activity, such as going to work. As a consequence, I argue that the [BEGINNING OF EVENT] lexical concept was derived from the close association between physically upward orientation and the beginning of an event.

4.1.2.7. Completion of Event

In addition to the beginning of event, as is well known, it is also possible for *up* to designate the completion of event. This lexical concept can be identified among a large number of usages. By way of illustration, let us consider the derivational processes of the following usages in chronological order:

[EME]
(1.15) Meaning: With verbs other than those relating to consumption and destruction, denoting progress to or towards an end (1307)
Example: a. Oute taken girdels that er fully wroght upp.
b. Thei ... heled him *vp* with medycyns (c1400)
c. Y understond Lombardys has bowght ytt [*sc.* the wool] *up* yn Ynglond (1480)
d. He will commaunde the fathers ... to finish *vp* their work begon (1560)
e. Beat *up* the yolks of three eggs (a1756)
[LME]
(1.16) Meaning: With verbs denoting consuming or destroying (c1374)
Example: a. She made vp frete here corn.
'She made up divination'
b. Destroye *vp* bothe man and place (c1450)
c. Lyke humbledories, eating *vp* the hony of the bees (a1555)
d. The Indians killed *up* all their swine, so as Capt. Lovell had none (1636)

e. The spendthrift had ... sold *up* the remainder of his furniture (1894)

(1.17) Meaning: Into a close or compact form or condition; so as to be confined or secured (c1374)

Example: a. There as ... al þis heigh matere Towchyng here loue were at þe fulle vp bounde

b. Ty *vp* my louers tongue, bring him silently (1600)

c. Old Sophy ... bound *up* her long hair for her sleep (1861)

(1.18) Meaning: With verbs denoting cleaning, putting in order, or fixing in place (1419–20)

Example: a. Pro purgacione (*anglice* clensyng *uppe*) unius centene [arcuum].
‘ purify (cleansing up) one hundred arrows’

b. I polished *up* the handle of the big front door (1878)

c. We have cleaned *up* for the month of May, ... 760 tons (1900)

(1.19) Meaning: So as to sever or separate, esp. into many parts, fragments, or pieces (14…)

Example: a. *Anatene*, *up* cuttynge

b. Breake *vp* the Seales, and read (a1616)

c. Engaged in tearing *up* old newspapers ... into small pieces (1857)

(1.20) Meaning: Into a state of union, conjunction, or combination; so as to bring together (a1450)

Example: Thus thanne was knyt *vpe* the pes.
‘Thus at that time the peace was knit up’

(1.21) Meaning: Into a closed or enclosed state; so as to be shut or restrained (1490)

Example: a. I shall bryng hym agen wyth me vnto you all, were he shitte *vp* in X prisons

b. Take heede of a doore or window ...: yea, though it be nailed *vp* (1615)

c. The streets were barricadoed *up* with chaines, harrowes and wagons (1642)

[EModE]

(1.22) Meaning: To or towards a particular point or line (1513)

Example: a. [She] hir hornit bow has bent, Quharin onon the takyll vp is stent; Syne halis vp in ire and felloun haist

b. To even *up* my account with his people (1901)

(1.23) Meaning: So as to supply deficiencies, defects, etc. (a1568)

Example: a. Now to know, what Author doth medle onelie with some one ... member of eloquence, and who doth perfitelie make *vp* the whole bodie.

b. Such haue I to fill *vp* the roomes of them as haue bought out their seruices (1598)
‘Such have I to fill up the rooms of them as have bought out their services’

c. To fill *up* as any deficiencies happen (1755)

From the examples above, it is clear that the notion of completion can be created by a wide variety of physical scenes. For instance, in (1.15b), it is usual that when we recover from an illness, we are once again able to rise from our bed. Thus, it is reasonable to connect upward orientation with a complete recovery from illness. In (1.15c), the use of this *up* is seen as closely connected to the notion of social prominence, because the phrase *buy up* was originally used when those in authority bought something (e.g., farm produce) from ordinary people. This usage originally developed to indicate the complete purchase of entities. In (1.15e), two factors can be considered to affect this creation. The first is the direction of the action of beating. Usually, in order to beat eggs, it is necessary to repeat the upward motion of a hand and a mixing tool until the eggs are completely beaten. The upward orientation of the action can be indicated by *up*. Another factor is the final state of eggs as a result of having been thoroughly beaten. That is, when eggs have been thoroughly beaten, the upper level in the bowl rises due to the air that has been incorporated into the eggs. I argue that the usage was created due to the

close correlation between the physically upward orientation implied by the action of beating and the completion of the action. As for (1.16c), it is possible that this usage of *up* was produced due to the close association between the physically upward orientation implied by the action of eating and the completion of the action. More specifically, in order to eat something completely, the physically upward motion of hand, cutlery, and food must be repeated until nothing remains on the plate. The upward orientation of the action is indicated by *up*.[11] Alternatively, considering that the schematic representation depicted in Figure 4.3 can be mapped onto the state of a stomach that has been filled by eating something completely, the upward movement of the level of food in the stomach can be designated by *up*. As for (1.17), I predict that this use of *up* was derived from the same schematic representation, which may also relate to the usage in (1.16), as shown below:

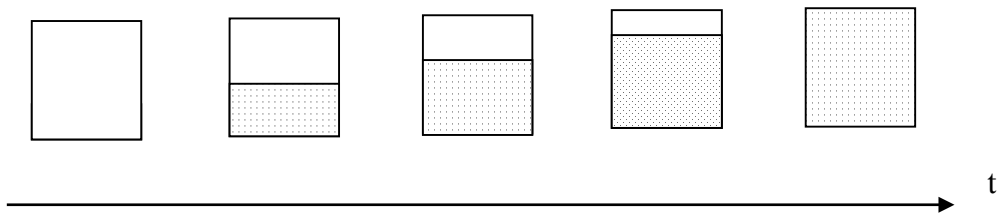


Figure 4.3. Schematic representation of the relationship between the increase in amount and physically upward orientation

That is, in (1.16) focusing on the spaces covered by dots, this schematic representation is likely to be interpreted as the process of the physical level rising towards a final amount, whereas in (1.17), the same representation may be construed differently: focusing on the blank spaces, the empty space is gradually filled until no gap remains. I view it as likely that the latter construal was mapped onto the construal of the usage in (1.17). In other words, *up* contributes to the notion of filling the gap implied by verbs such as *bind*. To clarify, let us consider the following example:

(1.24) Old Sophy bound her long hair for her sleep

In (1.17), Sophy binds her long hair, likely into a close knot on the back of her head so that no strand of hair remains loose, whereas, in the example in (1.24), she simply ties her hair with

[11] Based on the data collected by Tomasello (1982), it is reasonable to think that the lexical concept 'completion of event' clearly relating to physically upward orientation is acquired earlier than the one that does not imply it. This matter will be investigated in future research.

something like a rubber band, and her hair still appears to be in contact with her shoulders. The different interpretations here seem to result from the association of *up* with the notion of filling the gap, suggesting an alternative construal of the schematic representation depicted in Figure 4.3. It is also likely that the upward motion of putting her hair together into a knot influenced the compatibility of *bind* with *up*. As for (1.18), several factors can be considered to affect the creation. The first of these relates to the notion of positive assessment. In other words, polishing something, such as floors or shoes, is usually favourably assessed in the world in which we live, based on the common value that cleanliness is a virtue.[12] It is likely that such a commonly held value influences the compatibility of *up* with verbs such as *polish*. Relatedly, it is possible that another notion – positive mentality – contributed to the creation of this usage. That is, polishing something, such as floors or shoes, often makes those who engaged in the action, or those who walk on the floors or wear the shoes, feel better. Hence, the close link between polishing (cleaning) something and positive mentality may have influenced the creation of this usage. In (1.19), the factor that may have affected the creation of this usage is the increase in number. To clarify, let us consider the following example:

(1.25) Engaged in tearing up old newspapers … into small pieces.
(1857 T. Hughes Tom Brown's School Days i. vii. 162)

When an item such as a newspaper is torn up, it is usually divided into many parts, resulting in an increase in number. Since *up* is closely associated with the sense of an 'increase in number', as described above, it is plausible that the notion of the completion of the event carried by this usage was generated by the notion of the increase in number. The instance of *up* in (1.20) is likely to have been generated as a result of the established relationship between the accumulation of entities such as bricks (physically upward orientation) and their transformation into a state of union, as depicted in Figure 4.5:

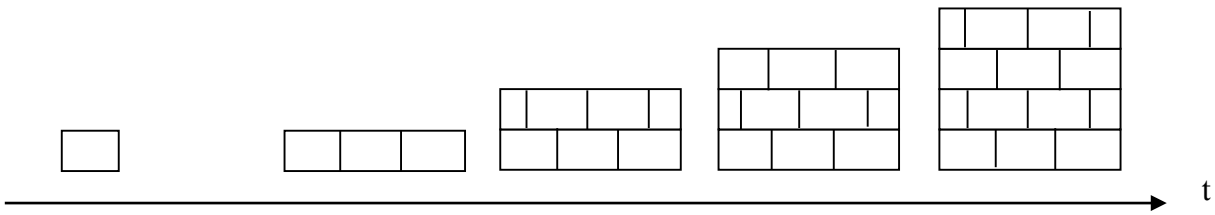


Figure 4.5. Schematic representation of the relationship between physically upward orientation and a state of union

[12] This type of common value is supposed to be underpinned by various sorts of reasons such as the one that cleanliness is closely associated with good hygiene.

Of course, it is also possible that both the 'increase in number' and 'proximity' usages affect this use of *up* because, as a state of union is created, not only do the number of bricks increase but the relationship between the bricks also changes to one of proximity. In (1.21), it is plausible that this instance of *up* was produced by the inseparable correlation between shutting someone up and the notion of filling a gap, as mentioned above. The following examples are illustrative:

(1.26) a. The Englishmen that were shut up in the castle
b. The Englishmen that were shut in the castle

Although both examples imply that the Englishmen cannot escape from the castle in which they are confined, there is a subtle difference between them. That is, in (1.26a), the Englishmen are considered to be shut in a small room in the castle so that their freedom is more restricted, whereas in (1.26b), they are simply seen to be confined within the castle, leaving them free to roam about the entire building, as illustrated by the following diagrams:

a. b.

Figure 4.6. The difference between *The Englishmen that were shut up in the castle* and *The Englishmen that were shut in the castle*

What is indicated by *up* here is the notion of the filling of a gap that is entailed by the physical scene of the Englishmen being shut in the castle. More specifically, *up* can be seen as reinforcing the notion of restriction by reducing the distance between people. In the sense that people are in a state of proximity, the notion of proximity mentioned above may also have affected the creation of this usage of *up*. It is likely that the usage of *up* in (1.22) came about as a result of the schematic representation extracted from the physical scenes of filling a container, which was established as the background image to the use of *up* and relatively neutralised in terms of the direction of the process. In (1.23), it is reasonable to consider that the usage of *up* resulted from a reinterpretation of the empty space in a container as a deficiency that needs to be supplied.

What is important to note here is that, in all the usages from (1.15) to (1.23) inclusive, *up*, regardless of its semantic implicature(s) and its derivational process(es), plays a crucial role in rendering the action designated by each verb complete. Based on the hypothesis relating to a number of usages sharing the same lexical concept (h1), I speculate that each usage tends to be derived from the physical scene directly relevant to itself and that the usage(s) sharing the same lexical concept (here, the [COMPLETION OF EVENT] lexical concept) that exist(s) in advance play(s) a role in determining if a novel usage is an appropriate one.

4.1.2.8. Accessibility

I argue that this lexical concept was also derived from several ubiquitous physical scenes. To illustrate, let us examine the derivational processes of the following usages:

[LME]
(1.27) Meaning: Into one's possession, charge, custody, etc. (a1400–50)
Example: Þan set þai þam ... a day ... , And þar-to tuke vp þaire trouthis.
'took up their truths'
[EModE]
(1.28) Meaning: So as to divulge, reveal, disclose, or let out (1593)
Example: a. That [the names of] all excommunicatis ... be gevin *wp* this daye viij dayes
b. A long article in the Quarterly Theological Review has fairly *shown up* the Yankee divine (1826)
c. If you own *up* in a genial sort of way the House will forgive anything (1880)
(1.29) Meaning: As a charge or accusation (1604)
Example: To speak ill of the dead or to cast up their demerits.

Firstly, I argue that the instance of *up* in (1.27) was derived from the inextricable link between taking up a physical object by hand and being able to access it. It is plausible that this type of experiential correlation prompted the [ACCESSIBILITY] lexical concept. On the other hand, the ways in which the usage of *up* in (1.28) was created seem slightly different in nature. In other words, based on the OED data, it is possible that this usage was produced by the close association between opening a door (of the old type, which opened by moving upwards) and the state of being open, and in turn between the state of being open and being able to perceive everything beyond the door. It is also plausible that the type of physical scene in which a pile becomes higher and consequently more accessible also played a role in the derivation of this use of *up*. Furthermore, it may be that the usage of *up* in (1.29) was generated by the same kinds of physical scenes that are more likely to give rise to the use of *up* in (1.28). Thus, it is likely that this usage arose from the established correlation between the state of being open (as

a result of opening a door) and the possibility of discerning an unfavourable fact beyond the door. I argue that all the usages from (1.27) to (1.29) share the [ACCESSIBILITY] lexical concept despite the differences among the contexts in which each usage appears or among the ways in which each usage was derived.

4.1.2.9. Social Prominence

This lexical concept may also have been derived from a number of ubiquitous physical scenes. By way of illustration, let us consider the derivational processes of the following usages:

[OE]
(1.30) Meaning: From a lower to a higher status in respect of position, rank, or affluence (c825)
Example: a. Dryhten ... hefeð up ðe þæt ðu ineardie eorðan.
b. I am come *up*, as a man is that from povertie is come to rychesse ... He his mervaylously come *up* within a yere or two (1530)
c. We are getting *up* in the world (1832)

[EME]
(1.31) Meaning: To the notice or consideration of a person or body of persons (*spec.* of one in authority) (a1122)
Example: a. Þær bær Godwine eorl *up* his mal
b. The byll of compleynt ... put *vppe* to the Kynges highnes (1529)
c. Ane paper which they send *wpe* to ȝour Majestie (c1633)
d. It would be Folly for Men to send *up* Prayers to a God that is not present to hear them (1709)

(1.32) Meaning: Into the hands or possession of another (1132)
Example: [The king] dide him gyuen *up* ðet abbotrice of Burch.

[LME]
(1.33) Meaning: In conventional uses (importance) (1382)
Example: a. Loo! we gon *vp* to Jerusalem.
b. Shee's come *vp* here, of purpose To learne the fashion (1612)
c. He took the opportunity of my company to ... go *up* with me. His business in London [etc.] (1794)

(1.34) Meaning: Before a judge, magistrate, etc. (c1440)
Example: a. Calle *vppe* Astrotte and A To giffe þer counsaille in þis case.
b. So the Fellow was had *up*, and Frank was had *up* for a Witness (1749)

First, I speculate on the basis of the example (1.30a) that the belief in God being resident in the heavens led people to believe those residing in higher places to be superior to themselves, which may have been connected to the notion of social prominence. Moreover, the use of *up* in (1.30) is more likely to have been derived as a result of the established relationship between a number of physical or non-physical scenes and the upgrading of social status, as described above. It is possible that this usage gave rise to the [SOCIAL PROMINENCE] lexical concept.[13]

[13] Here, 'social prominence' means outstanding social stature.

Moreover, I predict that all the usages in (1.31), (1.32) and (1.34) were derived from the use of *up* in (1.30). More specifically, it can be seen that all the actions expressed in these examples are directed toward a person or group located at a higher elevation in terms of social status. With regard to the use of *up* in (1.33), the close association between various sorts of notions relating to upward orientation (e.g., more people, merchandises, or entertainments get together in a big city like London) and social prominence may have affected its creation. I argue that all the usages from (1.30) to (1.34) share the [SOCIAL PROMINENCE] lexical concept.

4.1.2.10. Visual Prominence

I assume that this lexical concept also arose from human interaction with a number of ubiquitous physical scenes. To illustrate, the following section examines the derivational process of the following usage:

[OE]
(1.35) Meaning: Into existence, prominence, vogue, or currency; so as to appear or prevail (c1000)
Example: a. Ic eom hælende crist þe ... gedyde þæt leoht *up* asprang
b. The fire got *up* (1556)
c. Round knitt capps were the auncient mode before hatts came *upp* (a1679)
d. Hoping a Card might turn *up* to better their Fortunes (1704)
e. We shall have new men cropping *up* every session (1844)
f. Dinner ready .... Smyth, however, had not turned *up* (1902)

I speculate that this instance of *up* arose from a wide variety of experiential correlations. For instance, the established association between opening a door and being able to locate someone might have influenced the creation of this lexical concept. In addition, certain physical scenes, for instance, the higher a pile becomes, the more prominent it gets, may have helped to give rise to this lexical concept. Furthermore, it is also possible that the overall VPC *turn up* came to be associated with the 'into existence' usage due to the established relationships among turning the soil (the action of which itself includes upward orientation), the emergence of something, and its upward orientation, or between the turning up of a card and the appearance of the side that was previously hidden. Consequently, *up* came to be associated with the [VISUAL PROMINENCE] lexical concept.

What is critical to note is that the [VISUAL PROMINENCE] lexical concept can be abstracted from various types of physical scenes involving upward orientation. Put another way, this follows as this lexical concept has a strong relationship with physically upward orientation.

4.1.2.11. Auditory Prominence

I speculate that this lexical concept may also have been derived as a consequence of humans interacting with a number of ubiquitous physical scenes. By way of illustration, let us consider the following usage:

[LModE]
(1.36) Meaning: So as to cause sound to ascend, increase, or swell (c897)
Example: a. Hefe up ðine stefne sua ðes bime
b. Sound drummes & trumpets, sound vp cheerfully (1595)
(1.37) Meaning: So as to be heard (a1723)
Example: a. Speak *up*, jolly blade, never fear.
b. As when ... a burnish'd fly ... Tunes *up* amid these airy halls his song (1748)
c. The bell from the Pavilion strikes *up* (1853)

I speculate that the usages of *up* in (1.36) and (1.37) were derived from the close link between *up* and greater degree. It is also possible that this usage was derived from the following kind of experiential correlation: when a person picks up a cat, the animal's voice is easier to hear.

4.1.2.12. Active

I assume that this lexical concept was also derived from human interaction with a number of ubiquitous physical scenes. To illustrate, let us consider the following usage:

[EME~LME]
(1.38) Meaning: Into a state of activity, commotion, excitement, or ferment (1340–70)
Example: a. Stiue stormus of þe wind stiren vp þe wawus.
b. Their sounds ... Rouse *up* the astonished air (a1822)

We saw above that the instance of *up* in (1.38) is more likely to incorporate the [POSITIVE MENTALITY] and the [BIGINNING OF EVENT] lexical concepts at the same time. Here I assume that this usage also includes the [ACITIVE] lexical concept. By way of illustration, let us consider the following examples:

(1.39) Meaning: So as to raise a thing from the place in which it is lying, placed, or fixed.
Example: As soon as they could get up their Anchors they sailed away.
(1694 *London Gaz.* No. 3023/1)

(1.40) Meaning: Upon one's feet from a recumbent or reclining posture; *spec.* out of bed.
Example: I went to bed, and did not get up till the lamps were being lighted in Piccadilly.
(1865 L. Oliphant *Piccadilly* (1870) 317)

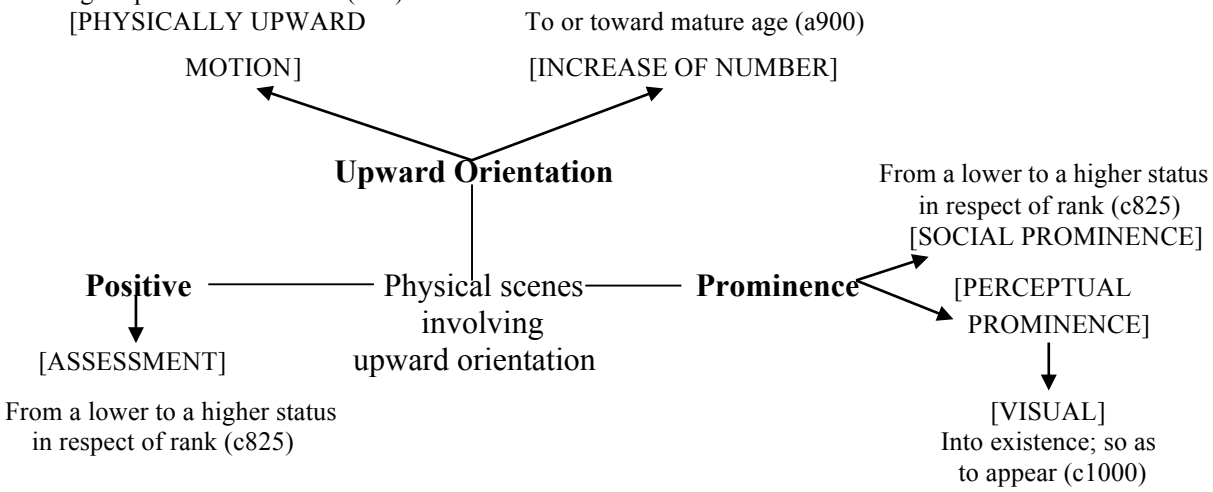
What can be inferred from (1.39) and (1.40) is that the physically upward motion designated by *get up* leads a ship in (1.39) and the speaker in (1.40) to a state of activity. More specifically, in (1.39), sailing becomes possible as a result of the anchors being hoisted, while in (1.40), some activity becomes possible as a result of a person arising from bed. I argue that the close association between physically upward orientation and a state of activity gave rise to the [ACTIVE] lexical concept.

4.2. Discussion

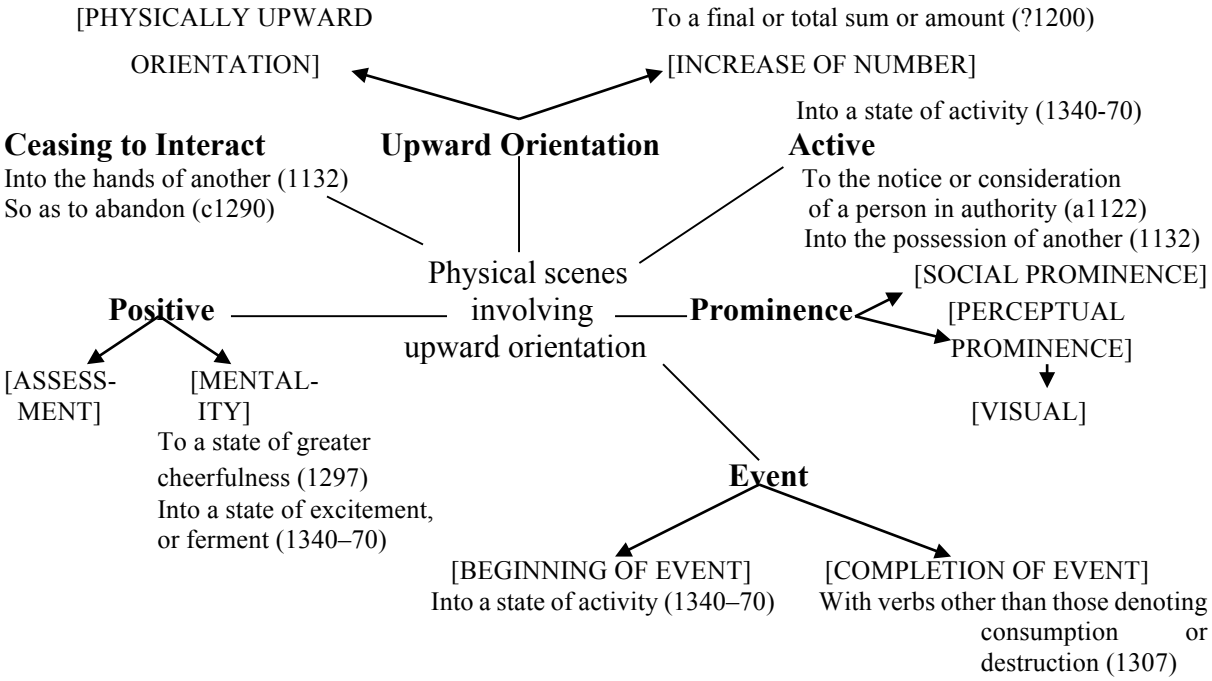
From the observations above, I argue that the following kinds of semantic networks were created historically.

[OE] (~1100)

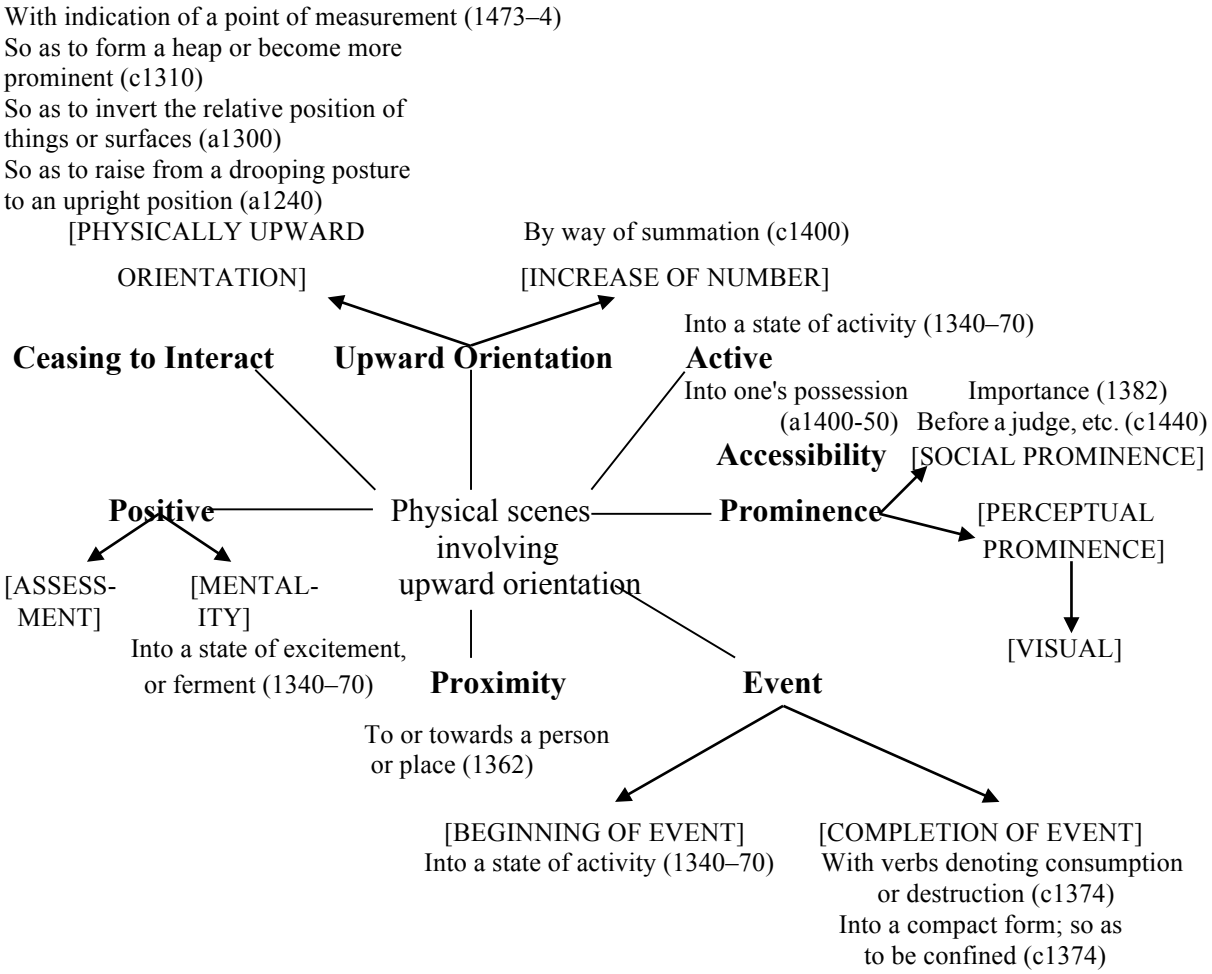
So as to detach from being fixed in the soil (a1100)
So as to rise from a sitting posture and assume an erect attitude (c1000)
From the stomach into the mouth; out of the sea on to the shore (c1000)
So as to be suspended aloft (c1000)
So as to direct the sight to a higher point (c900)
So as to rise by gradual ascent, in contact with a surface (c900)
Upon one's feet from a reclining posture; out of bed (c900)
So as to raise a thing from the place in which it is lying (c900)
So as to extend to a higher point (a900)
Towards the level of the shoulders or head (a900)
To some height above the ground; to a seat on horseback (c897)
So as to raise into a more erect position (c897)
On shore; from the sea; at land (c893) *Obs*.
From below the level of the earth to the surface (c888)
From beneath the horizon to the line of vision (c888)
Towards a point overhead (c888)
To a point higher than another (c888)
To a higher point within a river (847)



[EME] (~1340)



[LME] (~1500)



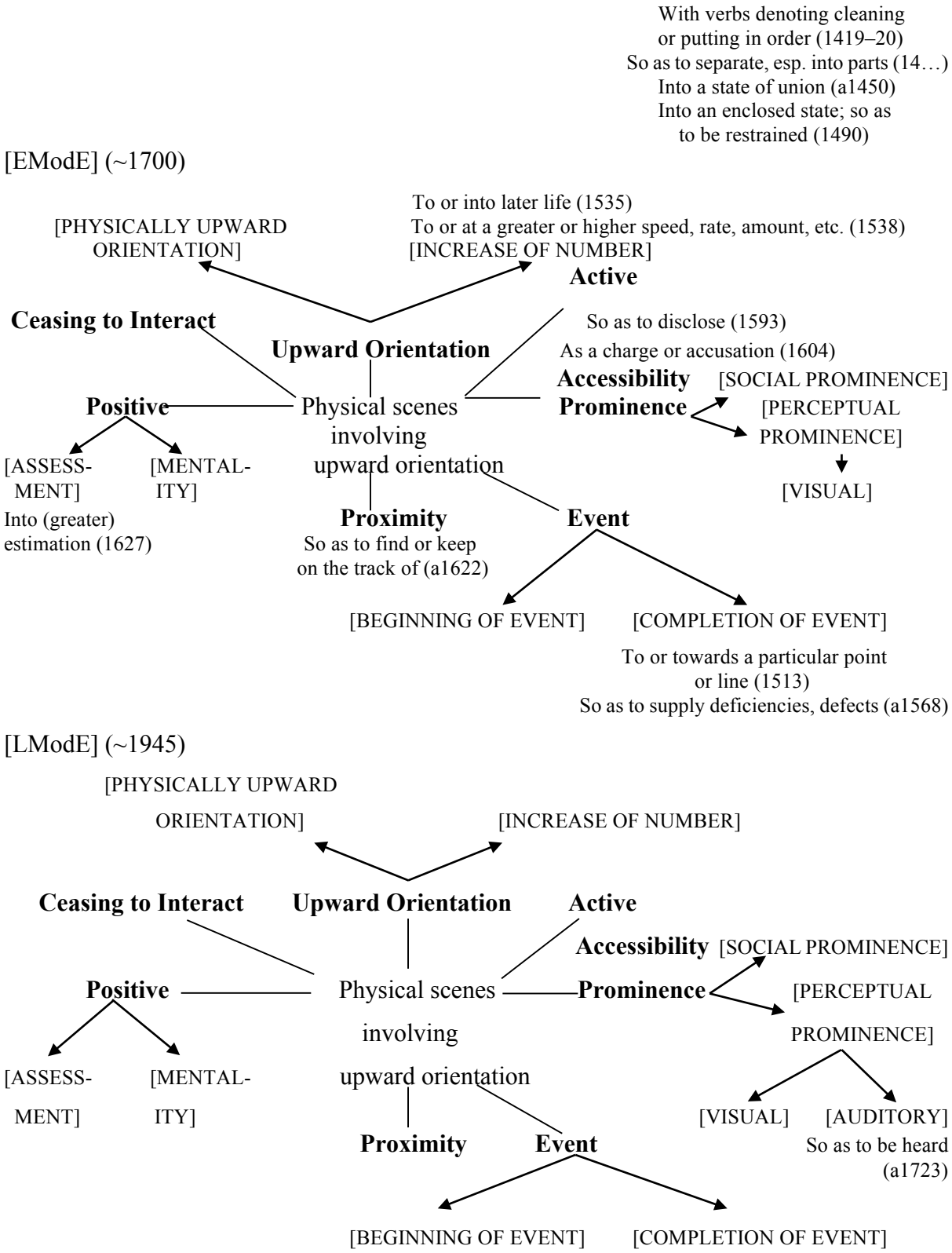


Figure 4.7. The historical development of the semantic network of *up* as a spatial particle within VPCs with the date of emergence of each lexical concept[14]

[14] The time at which a given linguistic meaning was established as a specific lexical concept is currently unknown. In other words, it may be difficult to identify whether a given linguistic meaning was already established as a specific lexical concept when one usage commenced or whether the linguistic meaning was instead gradually

As observed so far, I maintain that mainly seven types of lexical concepts came to be associated with *up* historically; Upward Orientation, Ceasing to Interact, Positive, Proximity, Event, Prominence (Accessibility), and Active. Some of them have two or more variants; Upward Orientation lexical concept includes [PHYSICALLY UPWARD ORIENTATION] and [INCREASE OF NUMBER] as its variants, Positive lexical concept involves [POSITIVE ASSESSMENT] and [POSITIVE MENTALITY], Event lexical concept contains [BEGINNING OF EVENT] and [COMPLETION OF EVENT], and Prominence (Accessibility) lexical concept encompasses [SOCIAL PROMINENCE] and [PERCEPTUAL PROMINENCE], which further comprises [VISUAL PROMINENCE] and [AUDITORY PROMINENCE]

From Figure 4.7, it is obvious that the usages associated with each lexical concept developed historically from more literal to more abstract meanings, which is compatible with the findings of earlier research (e.g., Hiltunen 1983). More specifically, in the Old English period, the uses associated with the [PHYSICALLY UPWARD ORIENTATION] lexical concept were predominant, with a few instantiations relating to the other lexical concepts. After the Early Middle English period, the usages associated with the lexical concepts other than [PHYSICALLY UPWARD ORIENTATION] began to increase significantly, and in the Early Modern English period, the uses associated with every lexical concept are almost established. Each lexical concept and its examples are summarised in Table 4.3:

Table 4.3. The lexical concepts associated with *up* as a spatial particle within VPCs and examples thereof

Date	Lexical concept	Example (chronological order)
847 a900	Physically Upward Motion Increase in Number	Almost all the examples raised in Table 4.1 To or towards mature age (a900) e.g., *His children, one of whom is growing up.* To a final or total sum or amount (?1200) e.g., *His deceased children were alive still in heaven; and the ten more given him here, make them up twenty.* By way of summation or enumeration (c1400) e.g., *All my years when added up are many.* To or into later life (1535)

established as a specific lexical concept through various sorts of usages (more specifically, through co-occurrence with a wide variety of words or phrases). If the former possibility is more accurate, the first emergence date shown in Figure 4.7 is viable. However, if the latter one is closer to reality, it follows that it is unclear when the specific lexical concept was fully established. It may be possible to consider a specific lexical concept, established at any stage, to be updated every time a novel usage emerges.

		e.g., *We were tried Friends: I from my Childhood up Had known him.*
		To or at a greater or higher speed, rate, amount, etc. (1538)
		e.g., *Carry had better hurry up and get that house in Park Street.*
1132	Ceasing to Interact	Into the hands or possession of another (1132)
		e.g., *They were assured that no harm should befal them if they gave up Bessus.*
		So as to relinquish, abandon, or forsake (c1290)
		e.g., *So turn up the job ... And leave it to me!*
c825	Positive Assessment	From a lower to a higher status in respect of position, rank, or affluence (c825)
		e.g., *We are getting up in the world.*
		Into (greater) repute, credit, or estimation (1627)
		e.g., *[Queen Victoria] spoke ... of Roundell Palmer; I had a good opportunity of speaking him up.*
1297	Positive Mentality	To a state of greater cheerfulness, confidence, resolution, etc. (1297)
		e.g., *He brightens up and is wide awake when Homer is ... recited.*
		Into a state of activity, commotion, excitement, or ferment (1340–70)
		e.g., *If I were to hear any body speak slightingly of you, I should fire up in a moment.*
1362	Proximity	To or towards a person or place; so as to approach or arrive (1362)
		e.g., *The Spring comes slowly up this way.*
		So as to find, come upon, overtake, or keep on the track of (a1622)
		e.g., *I ... hit off the tracks of a large herd of bison and followed them up.*
1340-70	Beginning of Event	Into a state of activity, commotion, excitement, or ferment (1340–70)
		e.g., *If I were to hear any body speak slightingly of you, I should fire up in a moment.*
1307	Completion of Event	With verbs other than those relating to consumption and destruction, denoting progress to or towards an end (1307)
		e.g., *Beat up the yolks of three eggs.*
		With verbs denoting consumption or destruction (c1374)
		e.g., *Destroye vp bothe man and place.*
		Into a close or compact form or condition; so as to be confined or secured (c1374)
		e.g., *Old Sophy ... bound up her long hair for her sleep.*
		So as to cover or envelop (c1400)
		e.g., *If the wound is covered closely up.*
		With verbs denoting cleaning, putting in order, or fixing in place (1419–20)
		e.g., *I polished up the handle of the big front door.*
		So as to sever or separate, esp. into many parts, fragments, or pieces (14…)
		e.g., *Breake vp the Seales, and read.*
		Into a state of union, conjunction, or combination; so as to bring together (a1450)
		e.g., *Your fame, your name, all mingled up in mine.*
		Into a closed or enclosed state; so as to be shut or

		restrained (1490) e.g., *The English men which were shut up in the Castel* To or towards a particular point or line (1513) e.g., *To even up my account with his people.* So as to supply deficiencies, defects, etc. (a1568) e.g., *To fill up as any deficiencies happen.*
a1400-50	Accessibility	Into one's possession, charge, custody, etc. (a1400–50) e.g., *Permission is hereby granted ... for to take vp a certaine piece of land for himself and his heires.* So as to divulge, reveal, disclose, or let out (1593) e.g., *A long article in the Quarterly Theological Review has fairly shown up the Yankee divine.* As a charge or accusation (1604) e.g., *To speak ill of the dead or to cast up their demerits*.
c825	Social Prominence	From a lower to a higher status in respect of position, rank, or affluence (c825) e.g., *We are getting up in the world.* To the notice or consideration of a person or body of persons (*spec.* of one in authority) (a1122) e.g., *The writ went up to the Lords.* In conventional uses (importance) (1382) e.g., *If I shulde com up to London the next terme.* Before a judge, magistrate, etc. (c1440) e.g., *I was unfortunately called up to give evidence against him.*
c1000	Visual Prominence	Into existence, prominence, vogue, or currency; so as to appear or prevail (c1000) e.g., *Dinner ready ... Smyth, however, had not turned up.*
a1723	Auditory Prominence	So as to be heard e.g., *The bell from the Pavilion strikes up.*
1340-70	Active	Into a state of activity, commotion, excitement, or ferment (1340–70) e.g., *If I were to hear any body speak slightingly of you, I should fire up in a moment.*

From these examples, it is clear that the element of physically upward orientation can be seen among a wide variety of physical scenes with which humans have interacted daily, probably since they first began to live as we do now. Consequently, it is plausible that the element of physically upward orientation that can be identified as common to such physical scenes came to be expressed by *up* in English-speaking countries, resulting in the establishment of the inseparable relationships between those physical scenes and the use of *up*.

Generally, as mentioned earlier (e.g., Grady 1997), most physical scenes tend to correlate to other physical or non-physical scenes or states due to the nature of our daily experience. Thus, it is difficult to assume that any experience we have in the real world can be independent

from other experiences. For instance, when we rise from a relaxed posture to an upright position, it is usual to begin to engage in some activity, such as reading, cooking, watching television, going to work, and so on. In our daily experience, it is rare to rise from a relaxed posture and then to do nothing. Hence, the physical scenes relating to raising a body are more likely to correlate to other scenes concerning the commencement of some activity. Similarly, when music rises in volume, we often feel more cheerful than usual. In this case, the physical scenes related to an increase in volume may correlate with the emotional states of not only the musician but also the audience. Of course, it is possible to assume that the joy experienced by the musician translates into the increase in sound of the musical instrument. Just as everything relating to human cognition is more likely to form a continuum, it can be assumed that the innumerable experiences humans have every day are also more likely to constitute a continuum because such experiences are the products always created through the human cognitive system, whether consciously or unconsciously. Due to the established relationships between particular physical scenes and *up*, the other physical scenes, or non-physical scenes or states that were correlated with the original ones in turn come to be correlated with *up*, giving rise to a new sense of *up*. I speculate that a large number of figurative senses associated with a given polysemous item arose from such correlations between one experience and another.

4.3. Summary

This chapter has been concerned with examining the historical development of the semantics of *up* within English verb-particle constructions. In particular, I have posited explanations for how each specific usage was derived historically to create a number of lexical concepts. The main conclusions arising from this study are as follows.

First, based on the detailed examination of historical data, it appears that thirteen distinct lexical concepts were created through the derivational processes of a number of specific usages. As for the derivational process of a specific usage, it is more likely that it was basically derived from the relevant physical scene(s) involving upward orientation, whether directly or indirectly. As for the derivational process of a lexical concept, it is possible that it was basically abstracted away from more than two specific usages that share a specific notion. As pointed out by Evans (2000), the lexical item *up*, originally associated with the notion of physically upward orientation, came to imply the other notions in bridging contexts, which in turn became associated with *up* as figurative meanings.

Secondly, I suggested the possibility that a number of lexical concepts associated with *up* form a continuum in terms of their semantic characteristics. Put differently, it is plausible that some lexical concepts can be created from other lexical concepts; as a result, they come to be inseparable. For example, as discussed above, the [COMPLETION OF EVENT] lexical concept may have been derived from a number of physical scenes involving other lexical concepts, such as that of [PROXIMITY], as contained in *shut up*. The strength of their connection implies that it is reasonable to consider them to form a continuum rather than to constitute a separate lexical concept.

In Chapter 5, I will focus on how the spatial particle *up* independent of a particular verb derived its large number of usages historically. The rationale for dealing with this type of *up* is as follows: I argue that each lexical concept is characterised by a distinct degree of context dependency, that is, the lexical concepts associated with *up* form a continuum in terms of their context dependency. Assuming that the usages of *up* independent of a particular verb were principally derived from the uses of *up* co-occurring with a verb within VPCs and that only some usages of the former *up* overlap with those of the latter *up*, it is likely that some lexical concepts are more context-dependent (that is, they always need to co-occur with particular verbs) while others are less context-dependent (that is, they can be independent from particular verbs, for example, they can be a complement of the verb to *be*). Comparing two variants of *up* may help verify this prediction.

Chapter 5 The historical development of the semantics of *up* independent of a specific verb

This chapter examines the historical development of the semantics of another type of *up* as a spatial particle, that is, an adverbial *up* independent of a specific verb. As in Chapter 4, I investigate how each specific usage was derived historically to contribute to the establishment of each distinct lexical concept associated with this type of *up*. The rationale for considering the historical development of usages or lexical concepts of *up* independent of a specific verb is outlined below. As mentioned in Chapter 4, due to the timing of their first appearance, it is reasonable to assume that the uses of *up* independent of a specific verb were derived from the uses of *up* within verb-particle constructions (VPCs)—or, at least, the latter uses significantly influenced the development of the former ones. Hence, in order to precisely capture the whole picture of the historical development of the semantics of *up* as a spatial particle, it is also necessary to examine the historical development of this type of *up*. To illustrate, let us consider the following examples:

(1) What … is your herte *vp*? yester daye ye ferd as though ye had dremed
'What … is your heart up? Yesterday you felt as though you had dreamed'
(1470–85[1] Malory *Morte d'Arthur* x. lxxv. 546)

(2) Th' exchaunge is *vp* agen above xxiiij[s] (1546 in H. Ellis *Orig. Lett. Eng. Hist.* (1827) 2nd Ser. II. 175)

(3) The name of Caius Cæsar was *up*, for eloquence, and spirit
(1619 E. M. Bolton tr. Florus *Rom. Hist.* (1636) 265)

(4) Are we to suppose the game already *up*? (1787 T. Jefferson *Writings* (1859) II. 283)

(5) I did not mention a word to Lucy but she must have guessed something was '*up*'.
(1838 E. C. Gaskell *Let.* 19 Aug. (1966) 37)

According to the *Oxford English Dictionary* (OED), the usage of *up* is considered to be associated with the meanings 'in a state of agitation, excitement, exaltation, or confidence' in (1), 'advanced, increased, or high in number, value, or price' in (2), 'much or widely spoken of, whether favourably or (latterly) unfavourably' in (3), 'completion (coming to a fruitless or undesired end)' in (4), and 'occurring (as a special, unusual, or undesirable event)' in (5).

These examples illustrate that this type of *up* developed a wide variety of uses historically, coming to exhibit polysemy. In the same way as *up* within VPCs, while some scholars (e.g., Cuyckens 1999) have argued for the importance of examining the historical development of a polysemous item to substantiate the analysis of the semantic network that resides in a contemporary language user, there have been few semantic network approaches to focus on the

[1] The date indicated here is the one on which each instance of *up* appeared first (at least, among the data available to the OED compilers).

historical backgrounds. Therefore, employing the functional approach adopted by a number of scholars (e.g., Vandeloise 1991, 1994; Tyler and Evans 2003; Evans 2009, 2011), this chapter investigates how each usage associated with this type of *up* was derived to contribute to the creation of a number of distinct lexical concepts historically, and furthermore how the usages of *up* within VPCs affected its historical development.

According to the OED, this type of *up* is classified into 23 main groups, each of which contains several instantiations, on the basis of their semantic differences.[2] Among these, nine groups are considered to include *up* relating to physically upward orientation, while the remaining 14 groups are regarded as involving figurative uses of *up*. As is evident from the examples provided there, there are two types of *up* independent of a specific verb: *up* as an adverb specifying the adverbial phrase that follows, and *up* serving as a complement of *to be*. Each of these is dealt with in turn.

This chapter consists of three sections: Section 1 deals with the historical development of *up* as an adverb specifying the adverbial phrase that follows, while section 2 addresses the historical development of *up* as an adverb serving as a complement of *to be*. Section 3 provides a brief summary.

5.1. Lexical concepts associated with *up* as an adverb specifying the adverbial phrase that follows

The following section examines each lexical concept in turn.

5.1.1. Physically Upward Orientation

The OED divides the meanings of this type of *up* relating to physically upward orientation into six groups. These are summarised in Table 5.1:

[2] Here, 'the semantic differences' are not precisely synonymous with the differences among the distinct senses meant to be associated with *up*. The OED appears to classify those instances with *up* into many more groups than expected by our criteria to distinguish among the distinct senses associated with a polysemous item.

Table 5.1. The classification of the meanings of *up* relating to physically upward orientation (OED)

Date	Meaning	Example
c897	1.a. At some distance above the ground or earth; high in the air; on high; aloft.	The time when ... clouds are highest *up* in air. (1851 Tennyson *Lady Clare* (rev. ed.) in *Poems* (ed. 7) 350)
c897	2. On high or (more) elevated ground; more inland; further from the coast or sea.	The City ... is 20 mile *up* in the Country. (1697 W. Dampier *New Voy. around World* viii. 218)
c1405	3.b. In fig. phrases or expressions.	There I stood, my Heart *up* at my Mouth. (1740 S. Richardson *Pamela* I. xxxi. 199)
1819	d. On horseback; riding.	A man who is 'in swell-street', that is, having plenty of money, is said to be '*up* in the stirrups'
1911	e. Of a woman's hair: worn tied or pinned on top of or at the back of the head, not hanging down; *spec.* as an indication of entry into adult society.	I was now ready to 'come out'. My hair was 'up', which at that period meant ... large knots of curls high *up* on the head. (*a*1976 A. Christie *Autobiogr.* (1977) iv. i. 166)
1835	c. On or above the surface of the ground or water	*Up*, on the bank, or on the surface. (1883 W.S. Gresley *Gloss. Terms Coal Mining* 268)
1297	6.a. In a standing posture; on one's feet; standing (and delivering a speech).	They ... are so quickly *up* in a *brauado*. (1613 G. Wither Abuses Stript i. v. sig. E6^{v})
1600	8.a. Further away from the mouth towards the source of a river, the inner part of a bay, etc.	Wee ... arriued in the Easter-side thereof some ten leagues *vp* within the Bay. (1600 R. Hakluyt *Princ. Navigations* (new ed.) III. 194)
1845	d. At or in a place of importance (*spec.* London).[3]	You'll be *up* in London by the 10th of next month. (1866 Trollope *Claverings* iv)
	9. In miscellaneous uses	
1886	c. With the surface broken or removed.	There was a good deal of traffic in the road, part of which was *up* for repairs. (1908 *Times* 28 July 2/6)

I argued in Chapter 4 that the primary lexical concept associated with *up* as an adverb co-occurring with a particular verb within VPCs is [PHYSICALLY UPWARD ORIENTATION]. Here, I also argue that the primary lexical concept associated with *up* as an adverb specifying the adverbial phrase that follows is [PHYSICALLY UPWARD ORIENTATION]. To illustrate, let us consider the following diagram:

[3] As pointed out in Chapter 4, it is plausible to consider this usage figurative.

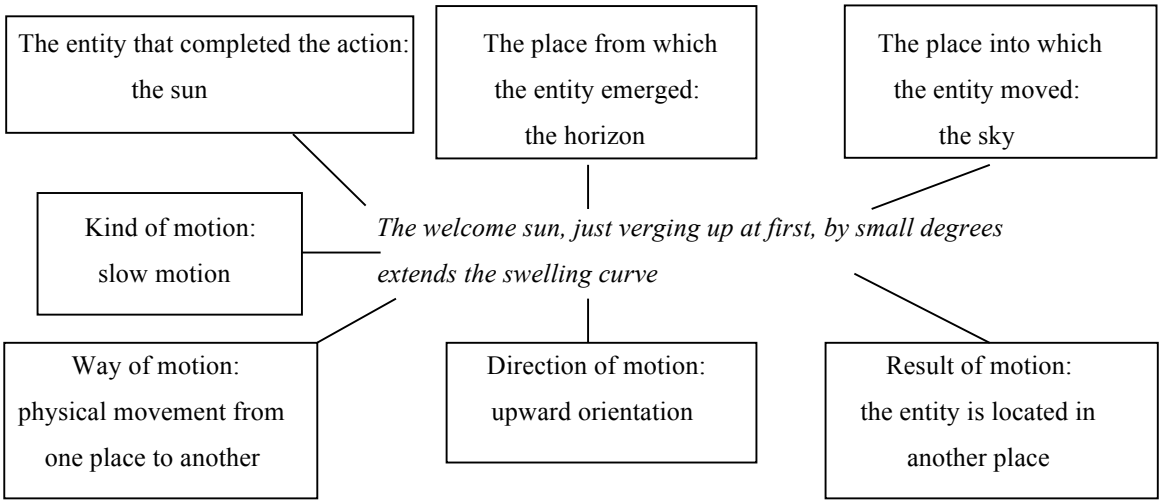


Figure 5.1. The conceptual information evoked by the physical scene *The welcome Sun, just verging up at first, By small Degrees extends the swelling Curve*

We saw in Chapter 4 that all of the conceptual information evoked by a wide variety of physical scenes from which the lexical concepts associated with *up* within VPCs are derived include the element of physically upward orientation as the direction of the actual or fictive motion designated by each verb, as illustrated in Figure 5.1. Since the physical scene designated using *up* as an adverb specifying the adverbial phrase that follows is associated with the final state of the whole action or change involving upward orientation, it seems not to include the element of physically upward orientation on its own. However, I also assume that all the conceptual information evoked by a large number of physical scenes relating to this type of *up* include the element of physically upward orientation, but in a different way from the case of *up* within VPCs. By way of illustration, let us consider the following diagram:

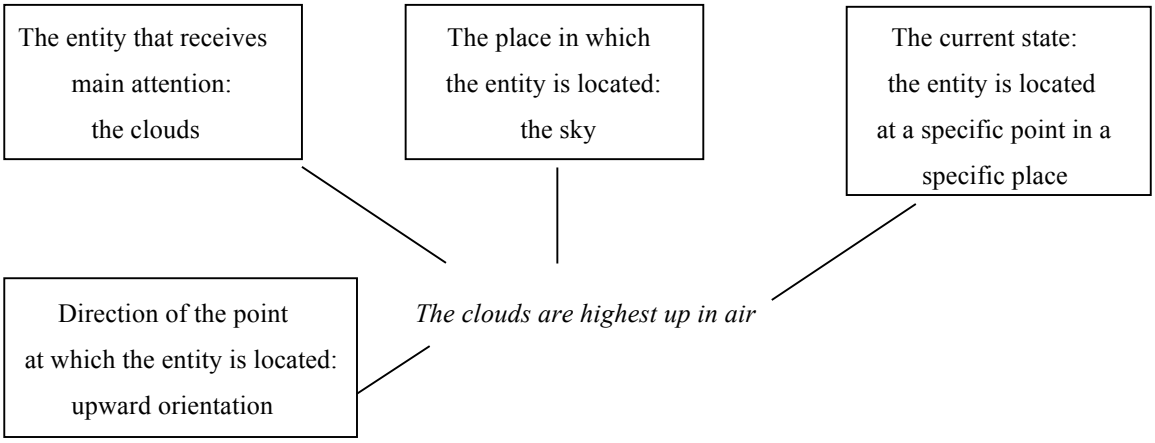


Figure 5.2. The conceptual information evoked by the physical scene *The clouds are highest up in air*

Figure 5.2 represents the conceptual information evoked as a result of interacting with the physical scene in which the clouds are highest up in the air either directly or via a linguistic resource. Due to the assumption that the conceptual system is componential in nature (e.g., Barsalou 1999), it is plausible that the conceptual information associated with the physical scene consists of (at least) four components: the entity that is the principal focus (the clouds), the place in which that entity is located (the sky), the current state of the entity (the entity is located at a specific point in a specific place), and the direction of the point at which the entity is located (upward orientation). What should be noticed here is that 'physically upward orientation' can be extracted as one component. The reason for the element being included in the conceptual information whose original physical scene seems not to include it might be as follows: the default situation of humans may affect the use of *up* in this type of example. That is, since it is usual for humans to be situated on the ground, especially when seeing the clouds, clouds are always located above the viewer from the human perspective. Hence, the upward orientation of the point at which the clouds are located can be indicated by *up*.

5.1.2. Figurative meanings

Having investigated the meanings relating to physically upward orientation in the previous section, let us now examine the figurative meanings of *up*. These are summarised in Table 5.2.

Table 5.2. The classification of the figurative meanings of *up* (OED)

Date	Meaning	Example
1656	1.a. In a state of disorder, tumult, revolt, or insurrection; risen in rebellion.	People that are *up* in commotion. (1656 Earl of Monmouth tr. T. Boccalini *Ragguagli di Parnasso* (1674) ii. xi. 150)
c1590	b. up in arms, risen, levied, or marshalled as an armed host.	The public-house keepers ... were *up* in arms to raise as much opposition as possible. (1893 W. Forbes-Mitchell *Reminisc. Great Mutiny* 108)
1870	e. Bound *for* (a place); ready *for* (something).	Christie was quite *up* for it. She loved a bit of skirmish. (1894 R. D. Blackmore *Perlycross* I. xvi. 243)
1887	e. Amiss or wrong *with* a person, etc.	There's something *up* with that girl. (1887 H. R. Haggard *Jess* vii)
	3. In senses denoting completion.	
1668	c. (At) the number or limit agreed upon as the score or game.	The game was twelve *up*. (1873 J. Bennett & 'Cavendish' *Billiards* 5)
1509	4.a. Higher in the ascending scale in respect of position, rank, fortune, etc.; in a position of affluence or influence.	I shall be apt to be rather *up* in the world, as the folks say, if I tope on at this rate? (1791 F. Burney *Diary* 4 June (1842) V. 207)
1546	c. Advanced, increased, or high in number, value, or price.	The price of £100 stock was *up* to £340. (1887 A. Birrell *Obiter Dicta* 2nd Ser. 93)
a1822	d. Advanced *in* years.	Though *up* in life, I'll get a wife. (*a*1822 A. Boswell *Old Beau* iii)
1894	e. (So many points, etc.) in advance of a competitor.	When the adversaries are 28 *up*. (1900 'J. Doe' *Bridge Man.* 61)
1902	f. At a high or lofty pitch.	He has a giggle right *up* in the treble. (1905 E. Glyn *Vicissitudes Evangeline* 81)
1921	b. Offered or exposed publicly.	His business is to set a value on the teas *up* for sale. (1921 *Conquest* Sept. 480/1)

5.1.2.1. Increase in Number (Amount)

We observed in Chapter 4 that [INCREASE IN NUMBER] was derived from a number of ubiquitous physical scenes, ending in its close association with *up* within VPCs. It is plausible that, as the combination of *up* with a particular verb implying this lexical concept experienced further development, it became possible for *up* to be associated with [INCREASE IN NUMBER] independently from the verb with which it originally co-occurred, but while still being accompanied by the adverbial phrase that is relevant to the lexical concept, as seen in the following examples:

[EModE]

(1.1) Meaning: Advanced, increased, or high in number, value, or price (1546)

Example: a. Th' exchaunge is *vp* agen above xxiiij^{s}

b. The price of £100 stock was *up* to £340 (1887)

(1.2) Meaning: In senses denoting completion ((at) the number or limit agreed upon as the score or game (1680)

Example: Of Trucks ... The Game, because it is sooner *up* than Billiards, is Nine, and sometimes Fifteen.

[LModE]

(1.3) Meaning: Advanced *in* years (a1822)

Example: a. Though *up* in life, I'll get a wife.

b. Gentlemen who are somewhat *up* in years (1884)

(1.4) Meaning: (So many points, etc.) in advance of a competitor (1894)

Example: They were two *up* at the third hole

As observed in Chapter 4, it is likely that [INCREASE IN NUMBER] arose from certain types of physical scenes; for instance, as a child approaches maturity, their height increases, as evident in (1.5):

[OE]

(1.5) Meaning: To or towards mature age, or proficiency in some art, etc. (a900)

Example: [Hilarion] wæs *up* cymen in Palestina.

Since approaching maturity implies an increase in number (age), the ubiquity of such scenes can be considered as the starting point for the development of the 'increase in number' lexical concept. As time passed, a number of usages implying this lexical concept developed, as seen in (1.6) to (1.9), upgrading the contexts in which the lexical concept can occur.

[EME]

(1.6) Meaning: To a final or total sum or amount (?1200)

Example: Seofenn siþe sexe gan. Ȝiff þatt tu willt hemm sammnenn *Vpp* inn till fowwerrtiȝ & twa

(1.7) Meaning: By way of summation or enumeration (c1400)

Example: Clannesse who-so kyndly cowþe comende, & rekken *vp* alle þe resounz þat ho by riȝt askez

[LME]

(1.8) Meaning: To or into later life (1535)

Example: All these haue I kepte fro my youth *vp*

(1.9) Meaning: To or at a greater or higher speed, rate, amount, etc. (1538)

Example: *Equus citatus*, a horse taken *vp*

I assume that the instance of *up* in (1.1) arose as a consequence of the established relationship between *up* and [INCREASE IN NUMBER] reinforced by the previous examples. As for (1.2), it is common, as a game proceeds, for its participants to gain an increasing number of points

and for the game to approach its end (the completion of the event). It is also possible to view games as being characterised in terms of the time elapsed (i.e., increase in number). The strong association between games and an increase in number, and furthermore between the increase in number and the completion of a game, produced this usage of *up*. The instance of *up* in (1.3) is more likely to have been derived from the corresponding use associated with *up* in (1.8). In (1.4), the use of *up* can be regarded as another variant relating to games but focusing on a different aspect from (1.2), that is, the superiority of a competitor in terms of the points they achieve in a game. Although the context in which each usage of *up* appears varies, the above observations imply that it is plausible to assume that all the examples from (1.1) to (1.4) inclusive can be characterised in terms of [INCREASE IN NUMBER].

5.1.2.2. Positive Assessment

My observations indicate that it is likely that this lexical concept is more context-dependent than the other ones, that is, it seems difficult for this lexical concept to exist independently from the particular verb with which it originally co-occurred, even with the adverbial phrase that is relevant to it. Only one example of this usage is found in the OED:

[EModE]

(1.10) Meaning: Much or widely spoken of, whether favourably or (latterly) unfavourably (1619)
Example: The name of Caius Cæsar was *up*, for eloquence, and spirit

I argue that this usage of *up* was created from a number of usages associated with the [SOCIAL PROMINENCE] lexical concept, some of which are repeated below:

[OE]

(1.11) Meaning: From a lower to a higher status in respect of position, rank, or affluence (c825)
Example: a. Dryhten ... hefeð *up* ðe þæt ðu ineardie eorðan
'God lifts up or lives in the tomb'
b. I am come *up*, as a man is that from povertie is come to rychesse ... He his mervaylously come *up* within a yere or two (1530)

[EME]

(1.12) Meaning: To the notice or consideration of a person or body of persons (*spec.* of one in authority) (a1122)
Example: a. Þær bær Godwine eorl *up* his mal
b. The byll of compleynt ... put *vppe* to the Kynges highnes (1529)

[LME]

(1.13) Meaning: Before a judge, magistrate, etc. (c1440)
Example: Calle *vppe* Astrotte and A To giffe þer counsaille in þis case.

In reality, it is usual for individuals of higher status to receive more assessment from a wider variety of people due to their fame and consequent public visibility. Of course, this assessment may be either favourable or unfavourable. The inseparable relationship between social prominence (here, being located at a higher point in terms of social status) and the receipt of both favourable and unfavourable assessments from a large number of people produced the instance of *up* seen in (1.10).

5.1.2.3. Positive Mentality

I also argue that this lexical concept was derived in the same way. Let us consider the following examples:

[EModE]
(1.14) Meaning: Up in arms, risen, levied, or marshalled as an armed host (1576)
Example: The Protestantes that were *vp* in armes in other places
(1.15) Meaning: In a state of disorder, tumult, revolt, or insurrection; risen in rebellion (1656)
Example: People that are *up* in commotion.[4]

I predict that the usage of *up* in (1.14) was derived from the usage exemplified in (1.16), repeated below:

[LME]
(1.16) Meaning: Into a state of activity, commotion, excitement, or ferment (1340–70)
Example: a. Stiue stormus of þe wind stiren *vp* þe wawus
b. They have their hearts so fired *up* thereby with a holy zeal for him, that [etc.] (1654)

We saw in Chapter 4 that the instance of *up* in (1.16b) may have arisen as a result of the close links between strong emotional states, the notion of the beginning of an event, and the increase in such physiological phenomena as pulse and body temperature. Due to the fact that [POSITIVE MENTALITY], [BEGINNING OF EVENT], and [ACTIVE] have a close relationship with physically upward orientation at this time, it is plausible that *up* came to be associated with all of these lexical concepts independently from any action verb with which it originally co-occurred. It is also possible that this use of *up* was derived from the following usage:

[4] As will later be seen, there is a possibility that these usages of *up* were derived subsequent to that of *up* as a complement of *to be*.

(1.17) Meaning: So as to rise from a sitting, stooping, or kneeling posture and assume an erect attitude. (c1000)

Example: Se hælend abeah nyþer; ... þa aras he *upp*

That is to say, it is plausible that the correlation between rising from a sitting or stooping posture and engaging in some activity influenced its creation. Essentially, the usage of *up* in (1.14) may have arisen as a result of the inseparable association between positive mentality and the chaotic states resulting from social uprisings, giving rise to the other usages in (1.15).

5.1.2.4. Accessibility

This lexical concept appeared relatively recently via the same process as the other lexical concepts. Let us consider the following example:

[LModE]
(1.18) Meaning: Offered or exposed publicly (1921)
Example: His business is to set a value on the teas *up* for sale.

I predict that this usage of *up* was created from a number of usages associated with [ACCESSIBILITY], repeated below:

[LME]
(1.19) Meaning: Into one's possession, charge, custody, etc. (a1400–50)
Example: Þan set þai þam ... a day ... , And þar-to tuke vp þaire trouthis.
'took up their truths'
[EModE]
(1.20) Meaning: So as to divulge, reveal, disclose, or let out (1593)
Example: a. That [the names of] all excommunicatis ... be gevin *wp* this daye viij dayes
b. A long article in the Quarterly Theological Review has fairly *shown up* the Yankee divine (1826)
c. If you own *up* in a genial sort of way the House will forgive anything (1880)
(1.21) Meaning: As a charge or accusation (1604)
Example: To speak ill of the dead or to cast up their demerits.

We saw in Chapter 4 that this instance of *up* arose from the close links between taking a physical object in hand and being able to access it. I argue that the instance of *up* in (1.18) arose as a consequence of the inseparable correlation between accessibility and being well known publicly.

5.1.2.5. Social Prominence

I argue that this lexical concept was derived in the same way as the previous lexical concepts. Let us consider the following examples:

[LModE]

(1.22) Meaning: Higher in the ascending scale in respect of position, rank, fortune, etc.; in a position of affluence or influence (1791)
Example: I shall be apt to be rather *up* in the world, as the folks say, if I tope on at this rate?
(1.23) Meaning: At or in a place of importance (*spec.* London) (1845)
Example: a. 'Dick Cromwell and his Wife' seem to be *up* in Town on a visit
b. You'll be *up* in London by the 10th of next month (1866)

It is more likely that the usage of *up* in (1.22) was derived as a result of the established correlation between *up* and the notion of social prominence, as seen in the following examples:

[EModE]

(1.24) Meaning: From a lower to a higher status in respect of position, rank, or affluence (1530)
Example: I am come *up*, as a man is that from povertie is come to rychesse ... He his mervaylously come *up* within a yere or two
(1.25) Meaning: To the notice or consideration of a person or body of persons (*spec.* of one in authority) (1529)
Example: The byll of compleynt ... put *vppe* to the Kynges highnes
(1.26) Meaning: Before a judge, magistrate, etc. (1753)
Example: I was unfortunately called *up* to give evidence against him.

I speculate that the inextricable relationship between social prominence and physically upward orientation (i.e., people of social prominence, for instance, royalty occupies elevated locations). In (1.23), it is more likely that this usage was derived from the usage exemplified in (1.27):

(1.27) Meaning: In conventional uses (importance) (1516)
Example: If I shulde com up to London the next terme.

5.1.2.6. Active

Finally, I argue that this lexical concept was produced in the same manner. Let us consider the following example:

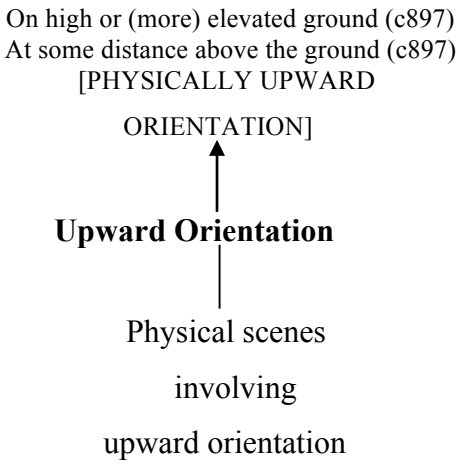
[LModE]
(1.28) Meaning: Bound *for* (a place); ready *for* (something) (1894)
Example: Christie was quite *up* for it. She loved a bit of skirmish.

In (1.28), the usage of *up* may have been derived from the strong connection between *up* and the beginning of an event. That is to say, the inseparable relationship between rising from a sitting or stooping posture and engaging in some activity may have affected the creation of the usage.

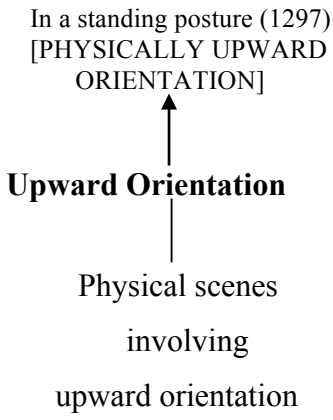
5.1.3. Summary

The historical development of the semantics of *up* as an adverb specifying the adverbial phrase that follows is summarised in the following figure:

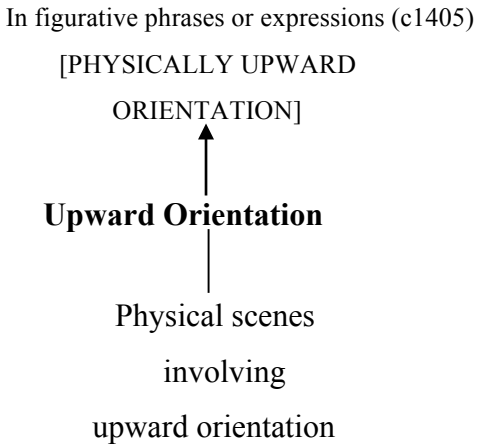
[OE] (~1100)



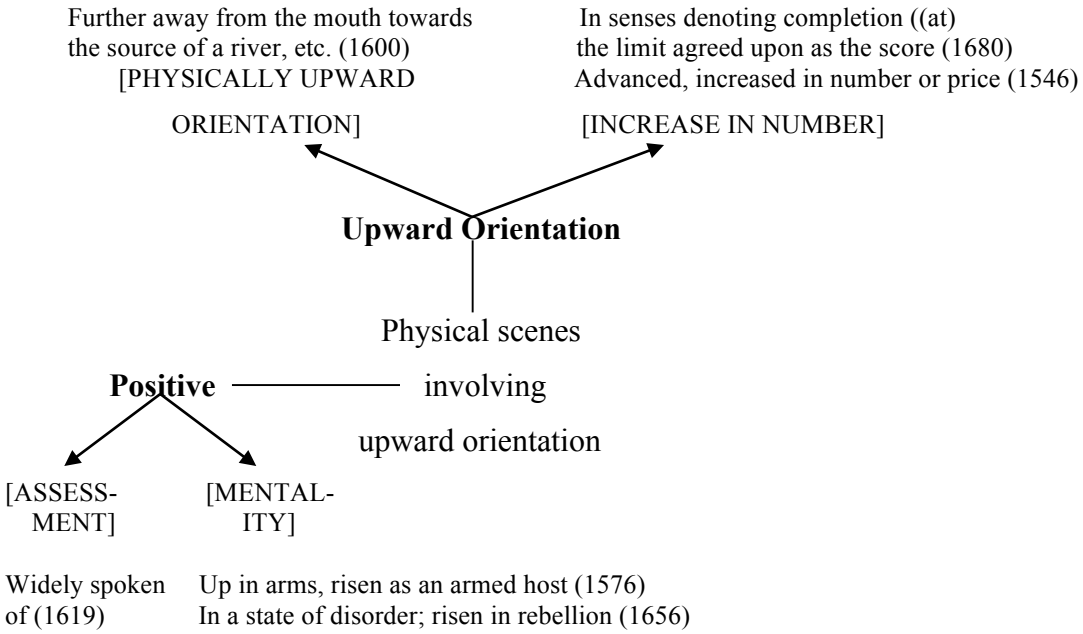
[EME] (~1340)



[LME] (~1500)



[EModE] (~1700)



[LModE] (~1945)

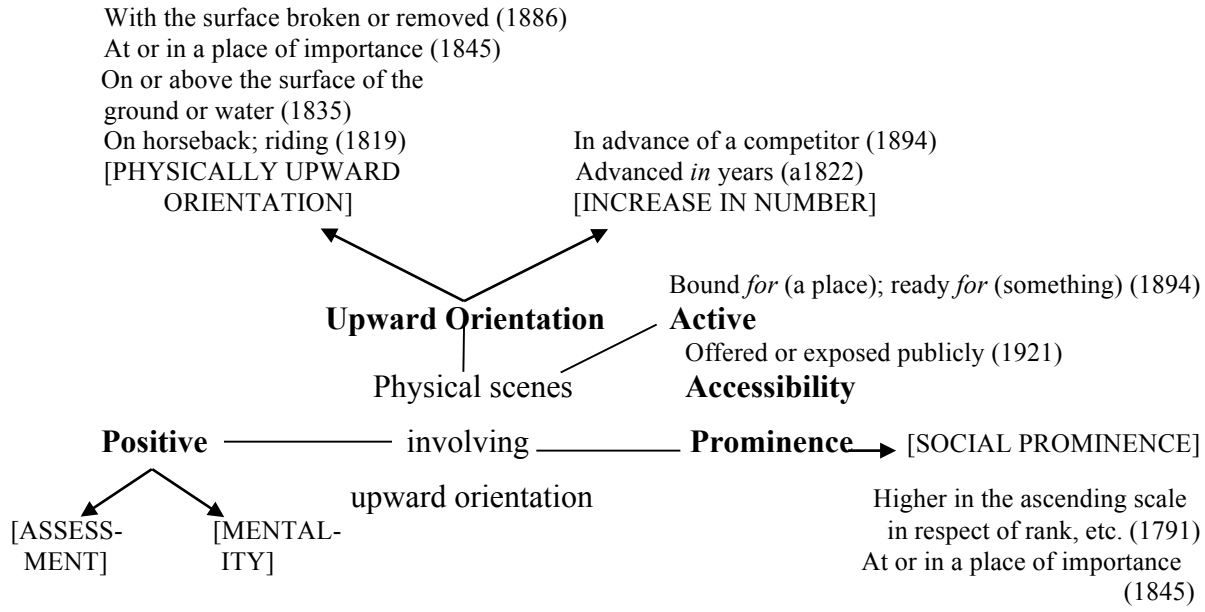


Figure 5.3. The historical development of the semantic network of *up* serving as an adverb specifying the adverbial phrase that follows with the date of first emergence of each lexical concept

Compared to the historical development of the semantics of *up* as an adverb co-occurring with a verb within VPCs (Figure 4.7), it is evident that this type of *up* developed its usages much later. More specifically, as is apparent from earlier studies (i.e., Hiltunen 1983), the usages of *up* within VPCs first appeared in the Old English period. Increasing gradually, they flourished during the Early and Late Middle English periods and were almost completely established by the time of Early Modern English. On the other hand, as for this type of *up*, almost all of the usages appeared after the advent of Early Modern English, increasing gradually at the time of Early and Late Modern English, though they are not as plentiful. Therefore, it is plausible that the uses of *up* as an adverb specifying the adverbial phrase that follows were basically derived from the uses of *up* within VPCs, or at least that its development was influenced significantly by that of *up* within VPCs.

In the following section, another type of *up*, that is, *up* as an adverb serving as a complement of *to be*, is addressed.

5.2. Lexical concepts associated with *up* as an adverb serving as a complement of *to be*

In the following section, I will deal with each lexical concept in turn.

5.2.1. Physically upward orientation

The OED divides the meanings of this type of *up* relating to physically upward orientation into nine groups. These are summarised in Table 5.3.

Table 5.3. The classification of the meanings of *up* relating to physically upward orientation (OED)

Date	Meaning	Example
1634	1.a. At some distance above the ground or earth; high in the air; on high; aloft	The ringing of basons, … which I haue often heard when a swarme is *up*, or in rising.
a1000	.b. Of the heavenly bodies: risen above the horizon; ascended into the sky.	The moon is *up*; by Heaven a lovely eve. (1812 Byron *Childe Harold: Cantos I & II* ii. xxi. 71)
1764	3.a. In an elevated position; at some distance above a usual or natural level.	He never brought them … a birth till the christening was over; nor a death till the hatchment was *up*.
1600	c. Of an adjustable (esp. sliding) device or part: raised.	Pistolls flashing firy cock is *vp*.
1856	d. *colloq.* On horseback; riding.	His running in a sweepstakes, when Sam [the jockey] was not '*up*'. (1856 H. H. Dixon *Post & Paddock* vi. 93)
1911	e. Of a woman's hair: worn tied or pinned on top of or at the back of the head, not hanging down; *spec.* as an indication of entry into adult society.	Her hair, tied back at the nape of her neck, would very soon be '*up*'
1390	4. Of a gate, door, etc.: open. *Obs.*	The dore is *up*, and he in wente. (1390 J. Gower *Confessio Amantis* III. 336)
a1387	5.a. High, in respect of the river-bank or shore.	Seuarne is ofte *vppe* and passeþ þe brynkes
1579	b. Out of the stomach, etc.	If I giue them a Pil to purge their humor, they Neuer leaue belking till it bee vp. (1579 S. Gosson *Apol. Schoole of Abuse* in *Ephemerides Phialo* f. 82)
1835	c. On or above the surface of the ground or water.	By remaining perfectly quiet when the animal is '*up*' the spectator is enabled to attain an excellent view of its movements in the water. (1835 *Trans. Zoological Soc.* I. 234)
1657	6.a. In a standing posture; on one's feet; standing (and delivering a speech).	I only stood up first, to speak to the orders of the House. But now I am *up*, I desire [etc.].
1742	c. Erected, built.	Of the Rings for Races … A third is yet *up* … though half-ruined. (1742 Leoni in Leoni *Palladio's Archit.* II. 69)
1942	d. *Baseball*. At bat.	Koenig was *up* next, a precision machine at getting a man along to second with hit or sacrifice. (1942 P. Gallico *Lou Gehrig* viii. 97)
c1390	7.a. Out of bed; risen.	We … must be *vp* with the lark.

		(1607 T. Dekker & J. Webster *West-ward Hoe* ii. i. sig. B4)
a1535	b. Not gone to bed; not yet abed.	I was in hopes that some of the servants were still *up*. (1779 J. Warner in J. H. Jesse *G. Selwyn & his Contemp.* (1844) IV. 274)
a1616	c. Of game: roused, started.	Hearke, the Game is rows'd … The Game is *vp*. (*a*1616 Shakespeare *Cymbeline* (1623) iii. iii. 117)
1817	d. In various colloq. phrases: up and about, around , active, moving about, esp. of a person who has been ill, no longer in bed; up and doing, busy and active.	It was not unusual to hear her up and about in the middle of the night, checking on a seriously ill patient. (1978 *Lancashire Life* Sept. 88/2)
1600	8.a. Further away from the mouth towards the source of a river, the inner part of a bay, etc.	By taking the current a little farther up, the rest of the family got safely over. (1766 O. Goldsmith *Vicar of Wakefield* I. iii. 30)
1821	b. Pointing or directed to the stream.	Then he recollects there is a punt head up in Mill-hole tier. (1821 *Acc. Peculations Coal Trade* 7)
1623	c. Towards a place or position; forward; advanced in place.	'Is my chariot up?' said the captain … 'Next to the duchess of Belgrave's, sir.' (1806 T. S. Surr *Winter in London* II. v. 133)
1847	e. *colloq.* At or in school or college.	The permission to remain *up* during the vacation. (1886 *Law Times' Rep.* **53** 664/2)
1839	f. Of a foxhound or a follower of the hunt: keeping *up* pace with the fox; present at its death.	Biggest ole dog-fox what ever I see! … Nobody but the Master an' me! (1908 *Punch* 8 Apr. 267/1)
	9. In miscellaneous uses	
1683	a. Facing upward.	The skin is stretched over this, with the grain side up. (1852 C. Morfit *Tanning & Currying* (1853) 289)
1866	b. Off the ground; in store; in a proper place or receptacle.	Our hay has been all *up* these three weeks. (1866 Trollope *Belton Estate* I. iii. 58)

In the same way as *up* as an adverb specifying the adverbial phrase that follows, this lexical concept is considered to be the primary one for this type of *up*. It is obvious that all the other lexical concepts are either directly or indirectly connected to this lexical concept.[5]

5.2.2. Figurative meanings

Having examined the meanings relating to physically upward orientation in the previous section, let us move on to the examination of the figurative meanings of *up*. These are summarised in Table 5.4.

[5] I assume that underlined meanings can be regarded as figurative, so these meanings will be addressed in the next section.

Table 5.4. The classification of the figurative meanings of *up* (OED)

Date	Meaning	Example
c1460	1.c. Actively stirring or moving about.	They pursued him: the hue and cry was raised: … the whole country was up. (1855 T. B. Macaulay *Hist. Eng.* IV. xxii. 714)
1470-85	d. In a state of agitation, excitement, exaltation, or confidence.	My spirit was up, my thoughts were full of hope. (*a*1807 Wordsworth *Prelude* (1959) iii. 70)
1362	2.a. In a state of prevalency, performance, or progress	Bot ȝif Meede make hit þi Mischef is vppe
1541	b. In power or force. *Obs.*	They are such beasts as while the Law was up … furnished Gods Altar with Sacrifices. (1641 J. Jackson *True Evangelical Temper*ii. 89)
1619	c. Much or widely spoken of, whether favourably or (latterly) unfavourably.	Your name's up in the town. (1824 L. L. Cameron *Pink Tippet* iii. 16)
1838	d. *colloq.* Occurring (as a special, unusual, or undesirable event); taking place, going on; amiss, wrong (very freq. from c1850).	We constantly thought that something was going to be up. (1908 *Times* 29 May 15/6)
1887	e. Amiss or wrong *with* a person, etc.	There's something up with that girl. (1887 H. R. Haggard *Jess* vii)
1941	f. Of food, drink, etc.: ready, served; freq. (tea up!, etc.) as an indication that something is ready to be served, eaten, or drunk. *colloq.*	'Tea up.' Wooley … carrying a steaming pot. (1981 J. Wainwright *All on Summer's Day* 14)
	3. In senses denoting completion.	
c1400	a. Of a period of time, etc.: completed, ended, expired, over.	As his leave was nearly up, he … would be off in the morning. (1889 'J. S. Winter' *Mrs. Bob* xxi)
1632	b. Of an assembly: risen; adjourned; over.	The Chancellor is, within these ten minutes, 'up' for the long vacation. (1853 Dickens *Bleak House* xxxix. 387)
1668	c. (At) the number or limit agreed upon as the score or game.	The game … is 'up' or won when the number of casts agreed on have been obtained by the winning side. (1876 *Encycl. Brit.* IV. 180/2 (Bowls))
1787	d. Come to a fruitless or undesired end; 'played out'. Usu. with *game*.	He feared the game was up. (1838 Dickens *Oliver Twist* I. xix. 318)
1825	e. all up, completely done or finished; quite over.	That's all up now. (1825 C. M. Westmacott *Eng. Spy* I. 322)
1883	f. In other applications.	*Up* … in *printing*, finished; noting completion of a task: as the chapter is up, the paper is up. (1909 *Cent. Suppl.* (at cited word))
1509	4.a. Higher in the ascending scale in respect of position, rank, fortune, etc.; in a position of affluence or influence.	For in our windy world What's up is faith, what's down is heresy. (1877 Tennyson *Harold* i. i)
a1549	b. Increased in power, force, strength, or vigour; actually blowing; ready for action. Also (in *Computing*), in working condition. Freq. in phr. up and running.	Steam is up, and the boat is soon ready to leave her dock. (1889 A. C. Gunter *That Frenchman!* xxi. 298)
1894	e. (So many points, etc.) in advance of a competitor.	When the adversaries are 28 up. (1900 'J. Doe' *Bridge Man.* 61)
1902	f. At a high or lofty pitch.	He has a giggle right *up* in the treble. (1905 E. Glyn *Vicissitudes Evangeline* 81)
	14.a. Before a magistrate, etc., in court.	

5.2.2.1. Increase in Number

As mentioned above, this lexical concept first arose in the context of VPCs. Once established as the lexical concept of *up* within VPCs, it began to be used to specify the adverbial phrase that follows. Parallel to this shift, or almost contemporaneous with it, this lexical concept began to be used as a complement of *to be*, that is, it became completely independent of both verbs and adverbial phrases, as in the following examples:

[LModE]

(1.1) Meaning: Advanced, increased, or high in number, value, or price (1855)

Example: a. A head full of sums, an idea that tallow is '*up*'

b. Six shillings a couple for ducks, and four for teal, as they're *up* now (1891)

(1.2) Meaning: In senses denoting completion ((at) the number or limit agreed upon as the score or game) (1876)

Example: The game … is '*up*' or won when the number of casts agreed on have been obtained by the winning side

5.2.2.2. Positive Assessment

From my observations, it is likely that this lexical concept is more context-dependent than the other ones, that is, it seems difficult for this lexical concept to exist independently from a particular verb with which it originally co-occurred. Only one example of this usage is found in the OED:

[EModE]

(1.3) Meaning: Much or widely spoken of, whether favourably or (latterly) unfavourably (1680)

Example: His name being *up*, he may lie abed till noon

I predict that this usage of *up* arose from a number of usages associated with [SOCIAL PROMINENCE], some of which are repeated below:

[OE]

(1.4) Meaning: From a lower to a higher status in respect of position, rank, or affluence (c825)

Example: a. Dryhten ... hefeð *up* ðe þæt ðu ineardie eorðan
'God lifts up or lives in the tomb'

b. I am come *up*, as a man is that from povertie is come to rychesse … He his mervaylously come *up* within a yere or two (1530)

[EME]

(1.5) Meaning: To the notice or consideration of a person or body of persons (*spec.* of one in authority) (a1122)

Example: a. Þær bær Godwine eorl *up* his mal

b. The byll of compleynt … put *vppe* to the Kynges highnes (1529)

[LME]
(1.6) Meaning: Before a judge, magistrate, etc. (c1440)
Example: Calle *vppe* Astrotte and A To giffe þer counsaille in þis case.

In reality, it is usual for people of higher status to be subjected to public scrutiny by a wider variety of people due to their fame and public stature. Of course, these assessments may be either favourable or unfavourable. The instance of *up* in (1.3) arose from the inseparable relationship between social prominence (here, elevated social status) and the receipt of both favourable and unfavourable assessment from a large number of people.

5.2.2.3. Positive Mentality

According to the data in the OED, unlike the usages associated with the other lexical concepts, it appears that this use of *up* emerged before those with the relevant adverbial phrases, as in the following examples:

[LME]
(1.7) Meaning: In a state of disorder, tumult, revolt, or insurrection; risen in rebellion (c1400)
Example: a. Fro þe seggez haden souped … Er euer þay bosked to bedde þe borȝ was al *vp*
'From who said had eaten … or ever they prepared to put to bed the fort (castle) was all up'

[EModE]
(1.8) Meaning: Up in arms, risen, levied, or marshalled as an armed host (1576)
Example: The Protestantes that were *vp* in armes in other places
(1.9) Meaning: In a state of disorder, tumult, revolt, or insurrection; risen in rebellion (1656)
Example: People that are *up* in commotion.

This may have been the case because the situation described by the expression *the fort is up* could imply people being either up in arms or in commotion.

5.2.2.4. Proximity

This lexical concept, too, was derived in the same way. Let us consider the following examples:

[LModE]
(1.10) Meaning: Towards a place or position; forward; advanced in place (1806)
Example: 'Is my chariot up?' said the captain … 'Next to the duchess of Belgrave's, sir.'
(1.11) Meaning: Of a foxhound or a follower of the hunt: keeping pace with the fox; present at its death (1839)
Example: Biggest ole dog-fox what ever I see! … Nobody up but the Master an' me!

(1.12) Meaning: Of food, drink, etc.: ready, served; freq. (tea up!, etc.) as an indication that something is ready to be served, eaten, or drunk. *colloq*. (1941)
Example: 'Tea up.' Wooley … carrying a steaming pot.

I predict that the usage of *up* in (1.10) was derived from the usage exemplified in (1.13).

(1.13) Meaning: To or towards a person or place; so as to approach or arrive (1362)
Example: Vp comes toward them the other frigat (1589)

What is indicated by *come up* in (1.13) is the entire action of a warship approaching people. The instance of *up* in (1.10) can be seen as having been derived from an emphasis on the final state of the whole action designated by *come up* in (1.13), more precisely, the final state of the warship being with people. As for (1.11), I argue that this use of *up* was derived from the usage seen in (1.14):

(1.14) Meaning: So as to find, come upon, overtake, or keep on the track of (a1622)
Example: I … hit off the tracks of a large herd of bison and followed them up.
(1879 F. T. Pollok *Sport Brit. Burmah* II. 204)

As seen in Chapter 4, it is more likely that the usage of *up* in (1.14) arose as a consequence of the experiential correlation between following or finding someone or something and physically upward orientation (the top part of the entity looks higher). The instance of *up* in (1.11) likely arose as a result of having emphasised the final state of the entire action designated by *follow up* in (1.14), more specifically, the final state of the speaker being proximate to the large herd of bison. As for (1.12), there is a possibility that [PROXIMITY] relates to this use of *up*. To illustrate, let us consider the following description:

(1.15) *Up*. This is usually added to another as 'coffee up' 'waitress up' or 'bread up' and designates the want or approach of a person or thing.
(1941 J. Smiley *Hash House Lingo* 55)

It is common for food, once prepared either at home or in a restaurant, to be carried from the place in which it is prepared (often, a kitchen) to the place in which it is then eaten (often, a dining room). That is, the inseparable relationship between the approach of food and being able to eat it may have influenced the creation of the use of *up* in (1.12).

5.2.2.5. Beginning of Event

I argue that this lexical concept, too, was derived from human interaction with a number of ubiquitous physical scenes, resulting in the close association with *up* within VPCs. In only a limited number of cases can [BEGINNING OF EVENT] be associated with *up* independently from a verb with which it originally co-occurred, as illustrated in the following examples:

[EModE]
(1.16) Meaning: Of game: roused, started (a1616)
Example: Hearke, the Game is rows'd … The Game is *vp*
[LModE]
(1.17) Meaning: *Colloq.* Occurring (as a special, unusual, or undesirable event); taking place; going on; amiss, wrong (very freq. from c1850) (1838).
Example: I did not mention a word to Lucy but she must have guessed something was '*up*'

I predict that the usage of *up* in (1.16) was derived from the usage seen in (1.18).

(1.18) Meaning: Into a state of activity, commotion, excitement, or ferment (1340–70)
Example: a. Stiue stormus of þe wind stiren *vp* þe wawus.
b. She fired *up* at the arrogance of the squire (1824)

We saw above that there is a possibility that a number of lexical concepts are implied by *stir up/fire up* in (1.18): [POSITIVE MENTALITY], [BEGINNING OF EVENT], and [ACTIVE]. Let us imagine the beginning of a game (any game will do, whether a football game, a video game, or a chess game). Usually, when a game commences, both the players and the audience tend to experience excitement (positive mentality). Considering that the volume frequently begins to rise after the start of a game, it is plausible that [AUDITORY PROMINENCE] is also relevant to this use of *up*. Moreover, when a game starts, players become active. In many cases, spectators also become active, for instance, by beginning to cheer for their team. Based on these observations, I argue that the instance of *up* in (1.16) was derived from the usages relating to a number of lexical concepts. As for (1.17), I argue that this instance of *up* was derived from the usage illustrated in (1.18). That is to say, I speculate that the usage in (1.18) produced the implicature that something unfavourable occurs, substantiated by such a physiological phenomenon as a rise in pulse or body temperature, which can be characterised in terms of upward orientation, giving rise to the use of *up* in (1.17).

5.2.2.6. Completion of Event

I also speculate that this lexical concept was derived from a number of ubiquitous physical scenes, culminating in a close association with *up* within VPCs. In the case of completion of event, the uses associated with *up* within VPCs experienced co-evolution with those associated with *up* as a complement of *to be*, giving rise to a wide variety of usages supported by various contexts. In the following examples, the uses associated with the latter *up* are summarised in chronological order:

[LME]
(1.19) Meaning: In senses denoting completion (of a period of time, etc.: completed, ended, expired, over) (c1400)
Example: a. When the tyme was ourtyrnyt, and þe tru *vp*, Agamynon þe grekys gedrit in þe fild
b. He should want a second mate before the voyage was *up* (1840)
[EModE]
(1.20) Meaning: In senses denoting completion (of an assembly: risen; adjourned; over) (1632)
Example: a. The court is *vp*, make way
b. Yet perhaps it may not be 'till Parliament is *up* (1711)
(1.21) Meaning: In senses denoting completion ((at) the number or limit agreed upon as the score or game) (1680)
Example: a. Of Trucks … The Game, because it is sooner *up* than Billiards, is Nine, and sometimes Fifteen
b. I had all four Honours the first time, and we were *up* at one Deal (1740)
c. The game was twelve *up* (1873)
d. The game … is '*up*' or won when the number of casts agreed on have been obtained by the winning side (1876)
[LModE]
(1.22) Meaning: In senses denoting completion (come to a fruitless or undesired end; 'played out'. Usu. with *game*) (1787)
Example: a. Are we to suppose the game already *up*?
b. He feared the game was *up* (1838)
(1.23) Meaning: In senses denoting completion (In other applications) (1883)
Example: a. A stall or heading is said to be *up* when it is driven or worked up to a certain line … beyond which nothing further is to be worked
b. *Up* … in *printing*, finished; noting completion of a task: as in the chapter is *up*; the paper is *up* (1909)

The use of *up* in (1.19) may have arisen due to the established relationship between *up* and the completion of an event or the increase in number, as seen in the following examples.

[EME]
(1.24) Meaning: With the verbs other than those relating to consumption and destruction, denoting progress to or towards an end (1307)
Example: a. Oute taken girdels that er fully wroght upp.
b. Thei … heled him *vp* with medycyns (c1400)
c. Y understond Lombardys has bowght ytt [*sc.* the wool] *up* yn Ynglond (1480)
d. He will commaunde the fathers … to finish *vp* their work begon (1560)

e. Beat *up* the yolks of three eggs (a1756)

(1.25) Meaning: To or towards a state of completion or finality (with verbs denoting consumption or destruction) (c1374)

Example: a. She made vp frete here corn.
'She made up divination'
b. Destroye *vp* bothe man and place (c1450)
c. Lyke humbledories, eating *vp* the hony of the bees (a1555)
d. The Indians killed *up* all their swine, so as Capt. Lovell had none (1636)
e. The spendthrift had … sold *up* the remainder of his furniture (1894)

(1.26) Meaning: To a final or total sum or amount (?1200)

Example: a. Seofenn siþe sexe gan. Ȝiff þatt tu willt hemm sammnenn *Vpp* inn till fowwerrtiȝ & twa.
b. His deceased children were alive still in heaven; and the ten more given him here, make them *up* twenty (1629)

(1.27) Meaning: By way of summation or enumeration (c1400)

Example: a. Clannesse who-so kyndly cowþe comende, & rekken *vp* alle þe resounz þat ho by riȝt askez.
b. But who can number *up* his labours? (1727)

This use is perhaps closely related to the notion of an increase in number because that notion is critical to the characterisation of time. As for (1.20), this instance of *up* can be seen as a variant of (1.19) which recaptures a period of time in respect of assemblies extending for a certain amount of time. In (1.21), it is likely that the usage of *up* arose from the inextricable correlation between games and increases in number, and furthermore between such increases in number and the completion of a game. As far as (1.22) is concerned, the use of *up* can be regarded as a variant of (1.21) which focuses on a different aspect, that is, the unfavourable result of a game.[6] The instance of *up* in (1.23) can be considered to be a more generalised variant of (1.19) which applies to contexts other than those previously discussed.[7]

5.2.2.7. Social Prominence

This lexical concept, too, was derived from human interaction with a number of ubiquitous physical scenes, culminating in a close association with *up* within VPCs. As the combination of *up* with a particular verb implying this lexical concept evolved, *up* came to be associated with [SOCIAL PROMINENCE] independently from a verb with which it originally co-occurred, as illustrated in the following examples:

[6] The association of *up* with unfavourable dimensions of experiences despite its association with various types of favourable experiences in our daily life might be attributed to the notion of negativity bias (Rozin & Royzman 2001), according to which negative information has a far stronger influence on a person's behaviour and cognition than positive information—something critical to survival.

[7] Of course, even this more generalised variant has limited applicability due to the semantic compatibility of *up* with a given context. I will deal with this matter in future research.

[EModE]
(1.28) Meaning: In power or force. *Obs.*(a1616)
Example: a. To know, when two Authorities are *vp*, … How soone Confusion May enter
b. They are such beasts as while the Law was up … furnished Gods Altar with Sacrifices (1641)
(1.29) Meaning: Much or widely spoken of, whether favourably or (latterly) unfavourably (1680)
Example: His name being up, he may lie abed till noon.
[LModE]
(1.30) Meaning: *colloq.* At or in school or college (1866)
Example: The boys were still '*up*', that is, in school [=Eton]
(1.31) Meaning: Higher in the ascending scale in respect of position, rank, fortune, etc.; in a position of affluence or influence (1877)
Example: For in our windy world What's *up* is faith, what's down is heresy.

It is more likely that the usage of *up* in (1.28) arose from the established correlation between *up* and the notion of social prominence, as seen in the following examples:

(1.32) Meaning: From a lower to a higher status in respect of position, rank, or affluence (c825)
Example: We are getting up in the world.
(1.33) Meaning: To the notice or consideration of a person or body of persons (*spec.* of one in authority) (a1122)
Example: The writ went up to the Lords.
(1.34) Meaning: Before a judge, magistrate, etc. (c1440)
Example: I was unfortunately called up to give evidence against him.

As for (1.28), it is likely that the use of *up* was created due to not only the close association of *up* with social prominence but also the fact that the law is socially influential (i.e., prominent). I speculate that the instance of *up* in (1.29) arose from the inextricable relationship between social prominence and the receipt of both favourable and unfavourable assessment from a large number of people. Concerning (1.30), the usage of *up* is likely to have been derived due to the established association between social prominence and colleges (at the time). The instance of *up* in (1.31) arose as a consequence of the inseparable correlation between social prominence and *up*.

5.2.2.8 Active

Finally, this lexical concept was derived by means of a similar mechanism as the others. To clarify, let us consider the following examples:

[LME]

(1.35) Meaning: In a state of prevalency, performance, or progress (1362)
Example: a. Bot ȝif Meede make hit þi Mischef is *vppe*
b. In formation against John Hogon, who, going about the country with a 'crowde' or a fiddle … sang a song with these words, 'The hunt is *up*', etc. (1537)

(1.36) Meaning: In a state of disorder, tumult, revolt, or insurrection; risen in rebellion (c1400)
Example: a. Fro þe seggez haden souped … Er euer þay bosked to bedde þe borȝ was al *vp*
b. All the Realme was *vp*, and by open Proclamacion commaunded to make warre agaynst hym (1548)
c. The eastern counties were *up* (1849)

(1.37) Meaning: Actively stirring or moving about (c1460)
Example: a. 'Farewell,' quod I; 'þe deuyll ys *wppe*'
b. They pursued him: the hue and cry was raised: … the whole country was *up* (1855)

[EModE]

(1.38) Meaning: Increased in power, force, strength, or vigour; actually blowing; ready for action. Also (in *Computing*), in working condition. Freq. in phr. up and running (a1549)
Example: a. Yf the winde be any thyng *vp*
b. Steam is *up*, and the boat is soon ready to leave her dock (1889)
c. British Steel's giant private packet-switched network is *up*—and running successfully (1978)

[LModE]

(1.39) Meaning: *Baseball*. At bat (1942)
Example: Koenig was up next, a precision machine at getting a man along to second with hit or sacrifice.

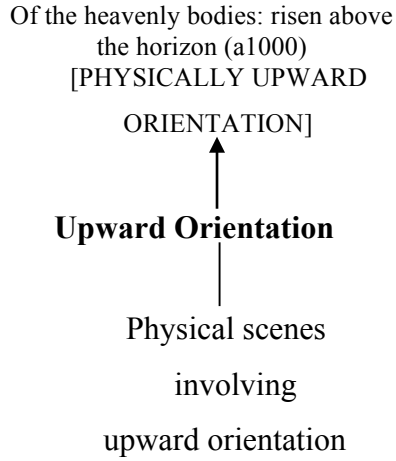
(1.40) Meaning: Of food, drink, etc.: ready, served; freq. (tea up!, etc.) as an indication that something is ready to be served, eaten, or drunk. *colloq*. (1941)
Example: a. *Up*. This is usually added to another as 'coffee up' 'waitress up' or 'bread up' and designates the want or approach of a person or thing
b. 'Tea *up*.' Wooley ... carrying a steaming pot.

In (1.35), the usage of *up* may have been derived due to the strong connection between *up* and the beginning of an event. As for (1.36) and (1.37), as mentioned above, it is possible that the notion of positive mentality implied by VPCs such as *fire up*, or the inseparable relationship between rising from a sitting or stooping posture and engaging in some activity, affected the creation of the usage. The instance of *up* in (1.38) arose due to the inextricable link between the state of steam being emitted continuously (in a physically upward orientation) and the ability to move a boat with a steam engine. As for (1.39), the association between assuming a standing posture and being ready for the action of batting is more likely to have given rise to this use of *up*. Concerning (1.40), this instance of *up* might have been derived from the close association between the approach of food (proximity), the state of steam rising from food, the rise of the temperature of the pan containing the food or the food itself (physically upward orientation), and the state of readiness for the act of eating.

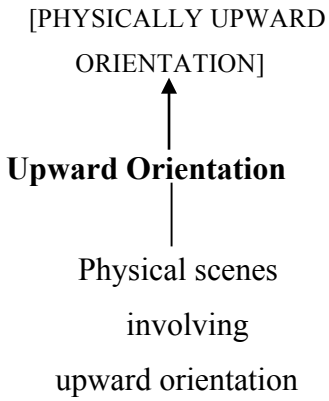
5.2.3. Summary

The historical development of the semantics of *up* as a complement of *to be* is summarised in the following figure:

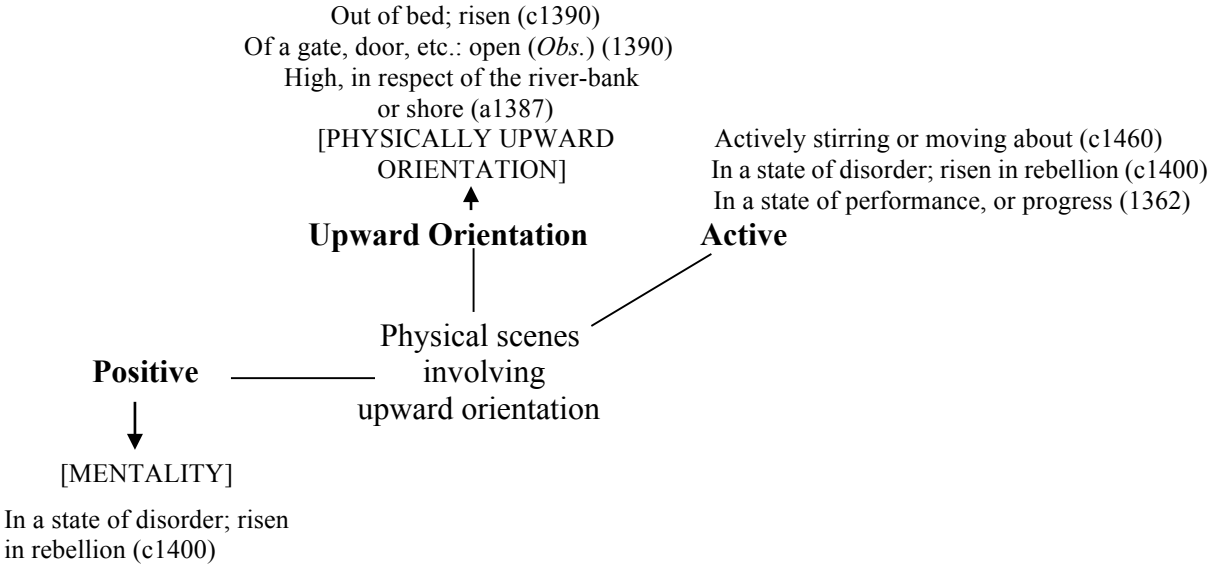
[OE] (~1100)



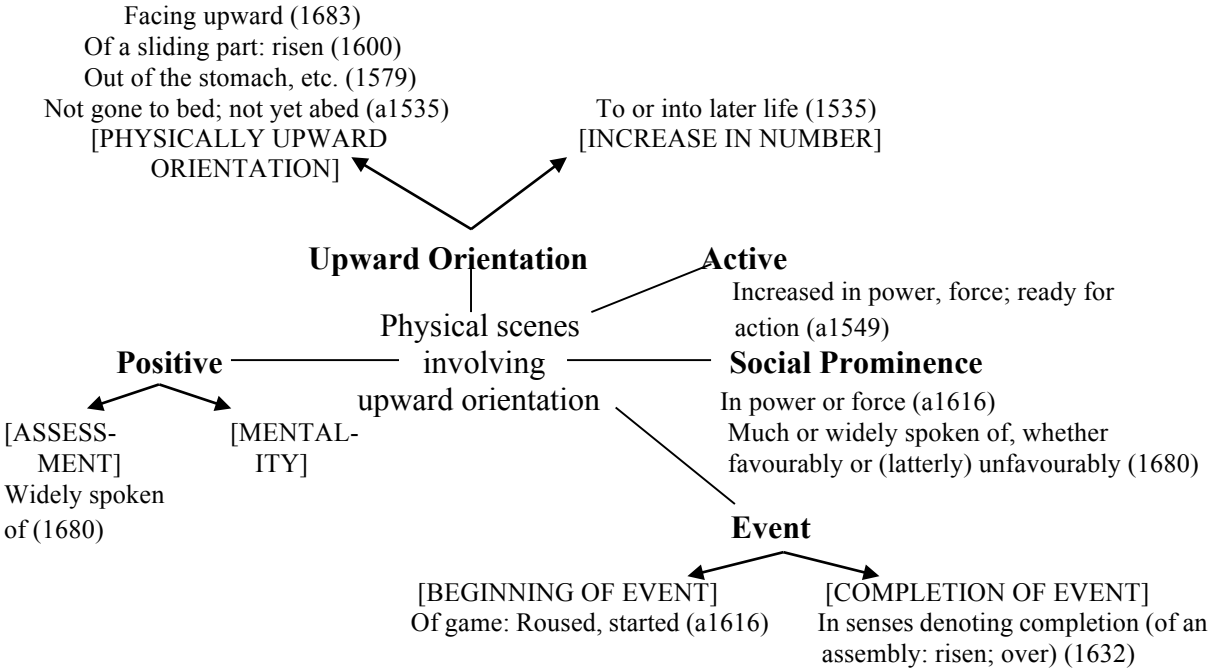
[EME] (~1340)



[LME] (~1500)



[EModE] (~1700)



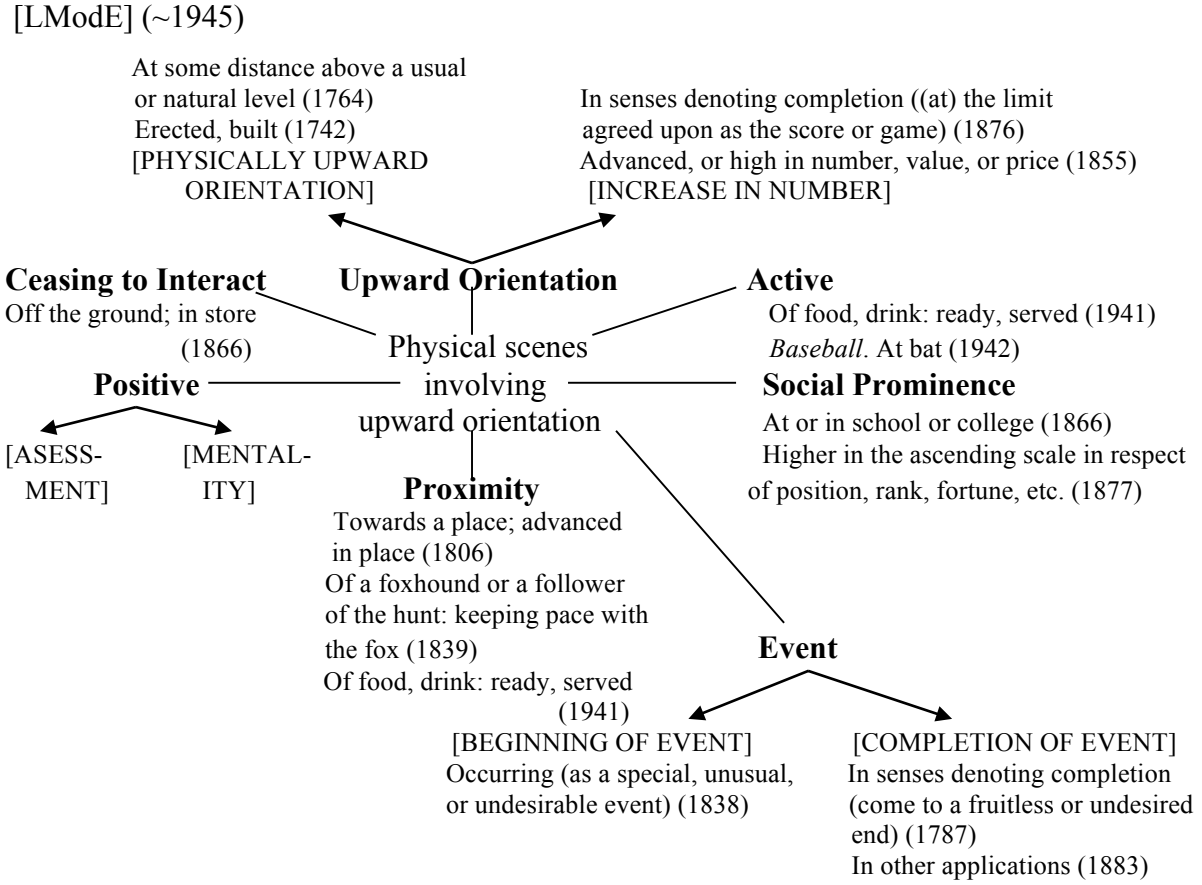


Figure 5.3. The semantic network of *up* as a spatial particle as a complement of *to be* with the date of first emergence of each lexical concept

Compared to the historical development of *up* as an adverb specifying the adverbial phrase that follows, the emergence of usages of this type of *up* seems relatively late. More specifically, almost all of the usages associated with this type of *up* first appeared around the time of Late Middle English, increasing significantly in Early Modern English, and flourishing in Late Modern English. It is evident that the uses of *up* as an adverb specifying the adverbial phrase that follows and serving as a complement of *to be* co-developed, and the historical development of each influenced that of the other as well as that of *up* within VPCs. I speculate that, just as the usages of *up* within VPCs affected the creation of the usages of *up* as an adverb specifying the adverbial phrase that follows, the usages of this type of *up* arose as a consequence of *up* becoming associated with a specific meaning by co-occurring with a specific verb within VPCs or adverbial phrases. Furthermore, I believe that there is a difference among these three types of *up* in terms of their context dependency. Put differently, this follows as the uses of *up* within VPCs are the most context dependent, while the uses of *up* as an adverb serving as a complement of *to be* are the most context independent, with the uses of up as an adverb

specifying the adverbial phrase that follows lying between these two extremes, as depicted in Figure 5.4.

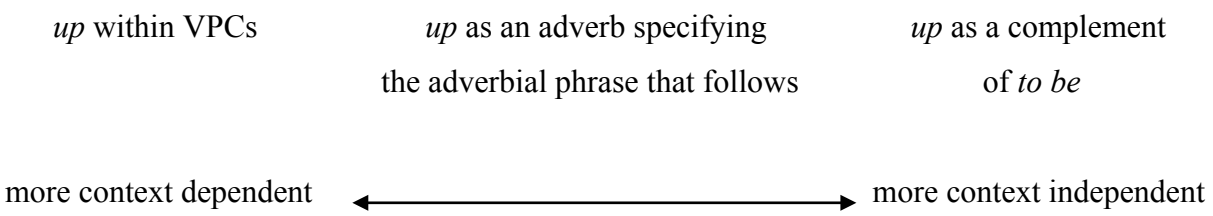


Figure 5.4. Difference in context dependency among *up* within VPCs, as an adverb specifying the adverbial phrase that follows, and as a complement of *to be*.

5.3. Discussion

Each lexical concept associated with *up* (both within VPCs and as an adverb independent of a specific verb) and its examples are summarised in Table 5.5.

Table 5.5. Lexical concepts associated with *up* (both within VPCs and as an adverb independent of a specific verb) and their examples

Date	Lexical concept	Example (chronological order)
847	Physically Upward Orientation	Almost all the examples raised in Table 5.1 Most of the examples raised in Table 5.3
a900	Increase in Number	To or towards mature age (a900) e.g., *His children, one of whom is growing up.* To a final or total sum or amount (?1200) e.g., *His deceased children were alive still in heaven; and the ten more given him here, make them up twenty.* By way of summation or enumeration (c1400) e.g., *All my years when added up are many.* To or into later life (1535) e.g., *We were tried Friends: I from my Childhood up Had known him.* To or at a greater or higher speed, rate, amount, etc. (1538) e.g., *Carry had better hurry up and get that house in Park Street.* Advanced, increased, or high in number, value, or price (1546) e.g., *The price of £100 stock was up to £340.* In senses denoting completion ((at) the number or limit agreed upon as the score or game) (1668)

		e.g., *The game … is 'up' or won when the number of casts agreed on have been obtained by the winning side.*
		Advanced *in* years (a1822)
		e.g., *Though up in life, I'll get a wife.*
		(So many points, etc.) in advance of a competitor (1894)
		e.g., *When the adversaries are 28 up.*
1132	Ceasing to Interact	Into the hands or possession of another (1132)
		e.g., *They were assured that no harm should befal them if they gave up Bessus.*
		So as to relinquish, abandon, or forsake (c1290)
		e.g., *So turn up the job … And leave it to me!*
c825	Positive Assessment	From a lower to a higher status in respect of position, rank, or affluence (c825)
		e.g., *We are getting up in the world.*
		Into (greater) repute, credit, or estimation (1627)
		e.g., *[Queen Victoria] spoke … of Roundell Palmer; I had a good opportunity of speaking him up.*
1297	Positive Mentality	To a state of greater cheerfulness, confidence, resolution, etc. (1297)
		e.g., *He brightens up and is wide awake when Homer is … recited.*
		Into a state of activity, commotion, excitement, or ferment (1340–70)
		e.g., *If I were to hear any body speak slightingly of you, I should fire up in a moment.*
		In a state of disorder, tumult, revolt, or insurrection; risen in rebellion (c1400)
		e.g., *People that are up in commotion.*
		In a state of agitation, excitement, exaltation, or confidence (1470–85)
		e.g., *My spirit was up, my thoughts were full of hope.*
		Up in arms, risen, levied, or marshalled as an armed host (c1590)
		e.g., *The public-house keepers … were up in arms to raise as much opposition as possible.*
1362	Proximity	To or towards a person or place; so as to approach or arrive (1362)
		e.g., *The Spring comes slowly up this way.*
		So as to find, come upon, overtake, or keep on the track of (a1622)
		e.g., *I … hit off the tracks of a large herd of bison and followed them up.*
		Towards a place or position; forward; advanced in place (1623)
		e.g., *'Is my chariot up?' said the captain … 'Next to the duchess of Belgrave's, sir.'*
		Of a foxhound or a follower of the hunt: keeping pace with the fox; present at its death (1839)
		e.g., *Biggest ole dog-fox what ever I see! … Nobody up but the Master an' me!*
		Of food, drink, etc.: ready, served; freq. (tea up!, etc.) as an indication that something is ready to be served, eaten, or drunk. *colloq*. (1941)
		e.g., *'Tea up.' Wooley … carrying a steaming pot.*
1340–70	Beginning of Event	Into a state of activity, commotion, excitement, or ferment (1340–70)
		e.g., *If I were to hear any body speak slightingly*

of you, I should fire up in a moment.

Of game: Roused, started (a1616)

e.g., *Hearke, the Game is rows'd ... The Game is vp.*

Colloq. Occurring (as a special, unusual, or undesirable event); taking place; going on; amiss, wrong. (Very freq. from *c*1850.) (1838)

e.g., *We constantly thought that something was going to be up.*

1307 Completion of Event

With the other verbs than those relating to consumption and destruction, denoting progress to or towards an end (1307)

e.g., *Beat up the yolks of three eggs.*

With verbs denoting consumption or destruction (c1374)

e.g., *Destroye vp bothe man and place.*

Into a close or compact form or condition; so as to be confined or secured (c1374)

e.g., *Old Sophy ... bound up her long hair for her sleep.*

So as to cover or envelop (c1400)

e.g., *If the wound is covered closely up.*

With verbs denoting cleaning, putting in order, or

In senses denoting completion (of a period of time, etc.: Completed, ended, expired, over) (c1400)

e.g., *As soon as morning school was up, there was a general rush ... to breakfast.*

fixing in place (1419–20)

e.g., *I polished up the handle of the big front door.*

So as to sever or separate, esp. into many parts, fragments, or pieces (14…)

e.g., *Breake vp the Seales, and read.*

Into a state of union, conjunction, or combination; so as to bring together (a1450)

e.g., *Your fame, your name, all mingled up in mine.*

Into a closed or enclosed state; so as to be shut or restrained (1490)

e.g., *The English men which were shut up in the Castel*

To or towards a particular point or line (1513)

e.g., *To even up my account with his people.*

So as to supply deficiencies, defects, etc. (a1568)

e.g., *To fill up as any deficiencies happen.*

In senses denoting completion (of an assembly: Risen; adjourned; over) (1632)

e.g., *The Duke said ... that ... all men being upon their feet, and out of their places, he conceived the House had been Up.*

In senses denoting completion ((at) the number or limit agreed upon as the score or game) (1668)

e.g., *The game ... is 'up' or won when the number of casts agreed on have been obtained by the winning side.*

In senses denoting completion (come to a fruitless or undesired end; 'played out'. Usu. with *game*) (1787)

e.g., *I feared that the game was up.*

In senses denoting completion (In other applications) (1883)

e.g., *Up ... in printing, finished; noting completion of a task: as in, the chapter is up; the paper is up.*

a1400–50 Accessibility

Into one's possession, charge, custody, etc. (a1400–50)
e.g., *Permission is hereby granted ... for to take vp a certaine piece of land for himself and his heires.*

So as to divulge, reveal, disclose, or let out (1593)
e.g., *A long article in the Quarterly Theological Review has fairly shown up the Yankee divine.*

As a charge or accusation (1604)
e.g., *To speak ill of the dead or to cast up their demerits*.

c825 Social Prominence

From a lower to a higher status in respect of position, rank, or affluence (c825)
e.g., *We are getting up in the world.*

To the notice or consideration of a person or body of persons (*spec.* of one in authority) (a1122)
e.g., *The writ went up to the Lords*.

In conventional uses (importance) (1382)
e.g., *If I shulde com up to London the next terme.*

Before a judge, magistrate, etc. (c1440)
e.g., *I was unfortunately called up to give evidence against him.*

Higher in the ascending scale in respect of position, rank, fortune, etc.; in a position of affluence or influence (1509)
e.g., *For in our windy world What's up is faith, what's down is heresy.*

In power or force. *Obs*. (1541)
e.g., *They are such beasts as while the Law was up ... furnished Gods Altar with Sacrifices.*

Much or widely spoken of, whether favourably or (latterly) unfavourably (1619)
e.g., *Your name's up in the town.*

At or in a place of importance (*spec.* London) (1845)
e.g., *You'll be up in London by the 10th of next month.*

colloq. At or in school or college (1847)
e.g., *The permission to remain up during the vacation.*

c1000 Visual Prominence

Into existence, prominence, vogue, or currency; so as to appear or prevail (c1000)
e.g., *Dinner ready ... Smyth, however, had not turned up.*

a1723 Auditory Prominence

So as to be heard
e.g., *The bell from the Pavilion strikes up.*

1340–70 Active

In a state of prevalency, performance, or progress (In later use mainly with *keep* v.) (c1290)
e.g., *In formation against John Hogon, who, going about the country with a 'crowde' or a fiddle ... sang a song with these words, 'The hunt is up', etc.*

Into a state of activity, commotion, excitement, or ferment (1340–70)
e.g., *If I were to hear any body speak slightingly of you, I should fire up in a moment.*

In a state of disorder, tumult, revolt, or insurrection; risen in rebellion (c1400)
e.g., *People that are up in commotion.*

Actively stirring or moving about (c1460)
e.g., *They pursued him: the hue and cry was raised: ... the whole country was up.*

Increased in power, force, strength, or vigour; actually blowing; ready for action. Also (in *Computing*), in working condition. Freq. in phr. up and running (a1549)

e.g., *Steam is up, and the boat is soon ready to leave her dock.*

up in arms, risen, levied, or marshalled as an armed host (c1590)

e.g., *The public-house keepers ... were up in arms to raise as much opposition as possible.*

Baseball. At bat (1862)

e.g., *Koenig was up next, a precision machine at getting a man along to second with hit or sacrifice.*

Bound *for* (a place); ready *for* (something) (1870)

e.g., *Christie was quite up for it. She loved a bit of skirmish.*

Of food, drink, etc.: ready, served; freq. (tea up!, etc.) as an indication that something is ready to be served, eaten, or drunk. *colloq*. (1941)

e.g., *'Tea up.' Wooley ... carrying a steaming pot.*

In this chapter, I investigated how the spatial particle *up*, independent of a specific verb, broadened its semantic repertory historically. More specifically, I attempted to provide a detailed characterisation of the derivational process(es) of each usage of *up* based on the assumption that the usages of this type of *up* were principally derived from the uses of *up* co-occurring with a particular verb within VPCs. On the basis of the observations above, each use of *up* independent of a specific verb may have been derived in one of the following ways:

(h2) The use of *up* independent of any particular verb is derived as a consequence of highlighting the final state of the entire action or change encoded by the combination of a given action or change of state verb with *up*

(h3) The use of *up* independent of any particular verb is derived as a consequence of highlighting the final state of the physical scene involving upward orientation or the final state of the entire action or change encoded by a given particular verb implying upward orientation

From the examinations in the previous sections, it is apparent that most of the uses of *up* independent of a specific verb were derived subsequent to the uses of *up* within VPCs being fully or partially established. This may be attributable to the cognitive bias of humans according to which dynamic states receive much more attention than static ones (e.g., Talmy 2002). That is to say, it is plausible that, when interacting with a physical scene involving upward

orientation such as the one in which a person rises from a sitting posture, people tend to pay much more attention to the whole action of the person rising from a sitting posture than the final state of that person being an upright position, resulting in the encoding of the entire action preceding that of the final state. Thus, it is plausible to think that the uses of *up* within VPCs associated with such whole actions tended to emerge earlier than the uses of *up* independent of a specific verb associated with the final state.[8] Based on this assumption, I proposed the hypothesis concerning the relationship between the uses of *up* within VPCs and independent of any particular verb (h2). On the other hand, not all of the usages of *up* independent of a specific verb necessarily have the corresponding usages of *up* associated with VPCs. That is to say, as stipulated in (h2), some usages are more likely to have been created as a result of an emphasis on the final states of entire actions or changes encoded by the corresponding VPCs. However, it is likely that the other usages were derived as a consequence of an emphasis on the final states of the physical scenes involving upward orientation (the direct derivations from original physical scenes) or the final states of the entire actions or changes encoded by particular verbs implying upward orientation (the derivations via particular verbs), as specified in (h3).

Secondly, on the basis of the presumed derivational process(es) of each usage of *up*, I tried to identify the lexical concepts associated with particular usages in an attempt to illuminate the connections among various types of usages. As with the uses of *up* within VPCs, [PHYSICALLY UPWARD ORIENTATION] can be seen as the primary lexical concept shared by all the physical scenes from which the other lexical concepts were derived either directly or indirectly. Furthermore, it was also revealed that the lexical concepts other than that of physically upward orientation are also interconnected in various ways, rather than being clearly independent from each other.

5.4. Summary

In Chapters 4 and 5, I dealt with the historical development of the semantics of *up*. Although *up* developed its semantic repertoire via various sorts of grammatical roles, in order to confine these to their roles as spatial particles, only two of these were addressed: *up* as an adverb co-

[8] The fact that *up* tends to be associated with the completion of an event more than the beginning of an event might also be attributable to the same sort of cognitive bias, according to which the final state of an event receives much more attention than its initial state, probably because, in our daily lives, the final state of an event has more impact on us than its initial state.

occurring with a particular verb within VPCs, and *up* as an adverb which is independent of a specific verb. From the observations above, it is evident that both types of *up* share most of the lexical concepts I proposed here, with [PHYSICALLY UPWARD ORIENTATION] being the primary one, though the derivational processes and the semantic quality of each lexical concept seem to differ.

Before proceeding to the consideration of the semantic network of *up* in the mind of a contemporary language user, one point is worth mentioning: the context dependency of each lexical concept. I suggested in the previous chapter that each lexical concept might be characterised by a different level of context dependency, that is to say, the lexical concepts associated with *up* might form a continuum in terms of context dependency. In order to identify the degree to which each lexical concept depends on its context, it may be useful to reinterpret each lexical concept in terms of the following criteria:

i) whether each lexical concept can maintain its semantic quality when it is independent of a particular verb
ii) whether each lexical concept can co-occur with various kinds of verbs or appear in a wide variety of contexts

We saw above that both types of *up* share almost all the lexical concepts I proposed in Chapters 4 and 5. Based on the observations above, however, it appears that certain lexical concepts maintain their semantic quality even when they are independent of a particular verb, whereas others do not. I argue that the lexical concepts that can maintain their semantic quality when independent of a particular verb are more context-independent than those which cannot. For instance, some lexical concepts, such as [INCREASE IN NUMBER] or [PROXIMITY], appear to preserve their semantic quality, whereas others, such as [CEASING TO INTERACT], do not.[9] As for [VISUAL PROMINENCE], no instance is found as a complement of *to be*. From the observations above, it seems likely that [CEASING TO INTERACT] and [VISUAL PROMINENCE] are more context-dependent than [INCREASE IN NUMBER] and [PROXIMITY] in the sense that the former pair almost always need to co-occur with a particular verb to exhibit their semantic content.

With regard to ii), I speculate that the lexical concepts that can co-occur with a greater variety of verbs or appear in a wider variety of contexts might be regarded as being more context-independent. Employing this criterion, [CEASING TO INTERACT] is more context-

[9] According to my informant, the use of *up* as a complement of *to be* implying [CEASING TO INTERACT] is so colloquial that it seems difficult for most native speakers to use it in a normal way.

dependent than [COMPLETION OF EVENT] because the contexts in which the former lexical concept can appear are much more limited than those in which the latter lexical concept can appear. Among the lexical concepts associated with *up* within VPCs, [COMPLETION OF EVENT] can be seen as the most context-independent due to its ability to appear in heterogeneous contexts. In addition, it is important to note that the variety of contexts in which each lexical concept can appear is changeable depending on whether it is associated with uses within VPCs or independent of a specific verb. In other words, it follows that a given lexical concept appears in more or fewer contexts than another lexical concept when it is associated with the uses within VPCs, whereas the converse is true when that lexical concept is associated with the uses independent of a specific verb. [ACTIVE] is a good example. It seems that this lexical concept appears in a limited number of contexts when it is associated with uses within VPCs, while it appears in a wide variety of contexts when it is associated with the uses independent of a specific verb. This fact might be underpinned by the semantic compatibility of each lexical concept with a specific type of *up*. For instance, [ACTIVE] can be considered to be more compatible with the uses of *up* independent of a specific verb because this lexical concept, which is more likely to have been derived from the final state of a physical scene involving upward orientation, has a semantic compatibility with the uses of *up* that focus on the final state. I speculate that the context dependency of each lexical concept may affect the meaning-construction processes of VPCs. In other words, it may be plausible that the lexical concepts of *up* that are more context-dependent tend to be activated simultaneously with the lexical concepts of the verbs with which they co-occur within VPCs, as if the former ones are included in the latter ones, while the lexical concepts that are more context-independent tend to be activated more independently. This matter will be examined in future research.

Before progressing to the next chapter, it may be worth revisiting why historical analysis is important for predicting the semantic network of *up* in the mind of a contemporary language user. As will be shown in Chapter 6, I assume that, the more psychologically realistic the correlation between two types of experience is among language users, the more influential it is for the derivation of a novel usage associated with a given lexical item. It is reasonable to conclude that it is the historical development of a lexical item that tells us the psychological tendency of a significant number of people, because the more people agree on a correlation between two experiences, the more established the linguistic expression that can be regarded as created by that correlation should be.

Therefore, based on the observations made in Chapters 4 and 5, Chapter 6 will focus on how a number of lexical concepts associated with *up* are derived and connected to each other in the mind of a contemporary language user.

Finally, what should be noticed here is that, as pointed out by some scholars (e.g., Thim 2012), the data of the OED is incomplete in many respects, just as the data of other resources. Nevertheless, the OED is one of the most reliable resources in relation to the English language in the world, and I believe that the historical analysis I set out here provides an adequate reflection of the tendencies in the historical development of a lexical item even if it cannot be completely precise.

Chapter 6 The semantic network of the spatial particle *up*

This chapter is concerned with providing the semantic network of *up* in the mind of a contemporary language user. In particular, I identify distinct lexical concepts associated with *up* by employing the methodology explained in Chapter 3, and provide a detailed explanation of the predicted derivational process(es) for each lexical concept.

Since the first successful attempt against the traditional view to demonstrate that grammatical markers such as spatial particles are meaningful in their own right, many researchers, particularly in the field of cognitive linguistics, have paid much attention to the semantic characterisation of various kinds of spatial particles (e.g., Brugman 1981; Lindner 1981; Herskovits 1986; Lakoff 1987; Vandeloise 1991; Kreitzer 1997; Cuyckens 1999, 2002; Tyler & Evans 2003; Evans 2009, 2010). While each researcher has attempted to provide a better characterisation of the semantics of spatial particles and some improvements have been made, the following question has remained unsolved: Which type of linguistic information associated with a given spatial particle makes a semantic contribution to the overall expression in which it appears? To illustrate, let us consider the following examples:

(1) The rocket shot *up*
(2) Prices went *up*
(3) He is really moving *up* in the world
(4) My long-lost book just turned *up*!
(5) We gave *up* hope (Lindner 1981)

All the examples from (1) to (5) include the same spatial particle *up*. However, they appear to relate to a distinct sense associated with *up*. In other words, it seems that each use of *up* makes a semantic contribution to the depiction of the scene in which the rocket moved quickly in an upward direction in (1), prices rose by virtue of number in (2), a man moved from a lower to a higher position in terms of social status in (3), a long-lost book came into the vision of the viewer in (4) and several people ceased to interact with an entity (hope) in (5).

These examples illustrate that a spatial particle such as *up* appears to be associated with a number of distinct lexical concepts to exhibit polysemy. In previous studies, there has been a lack of consensus regarding the following three questions: Which linguistic information associated with a given spatial particle should be included in the mental lexicon? How is each

lexical concept derived in the mind of a contemporary language user? Which lexical concept makes a semantic contribution to the overall expression in which it appears?

Therefore, the aim of this chapter is to pursue a more plausible characterisation for the semantics of spatial particles focusing on *up* on the basis of both the historical evidence I provided in the previous chapters and that which has been revealed in previous studies. More specifically, I investigate the kinds of lexical concepts with which the spatial particle *up* is conventionally associated by taking the functional approach adopted by a number of scholars (e.g., Vandeloise 1991, 1994; Tyler & Evans 2003; Evans 2009, 2010). As proposed in Chapter 3, I will adopt an alternative criterion to identify each lexical concept, as well as the primary lexical concept. Furthermore, drawing on historical evidence, I suggest how one lexical concept may be connected to another in the mind. As pointed out by Mahpeykar and Tyler (2015), in order to characterise the semantics of verb-particle constructions (VPCs) precisely, it is important to clarify which semantic properties associated with a verb and a particle, respectively, make a semantic contribution to the informational characterisations produced by the overall VPCs, although it might not always be easy to do so due to the continuity not only among the distinct lexical concepts associated with the same lexical item, but also between the lexical concepts and the corresponding cognitive models. Moreover, there is a possibility that it will be difficult to distinguish the lexical concepts associated with VPCs as a whole from those associated with the particles. While such difficulties pertain to the job of identifying purely linguistic meanings such as lexical concepts, it should be possible partly because, as argued by Evans (2009; based on Talmy 2000), linguistic meanings and the corresponding conceptual information from which those linguistic meanings are derived are assumed to constitute quite distinct representational systems, although they are inseparable in nature. I argue that the identification of the minimal lexical concepts associated with *up* enables us to elucidate which semantic properties exhibited by *up* contribute to the informational characterisations associated with the overall VPC.

This chapter consists of five sections: Section 1 provides an overview of what is revealed by the historical formation of the semantic network of *up*, based on which I argue that it is possible to predict the derivational process(es) of each lexical concept in the mind of a contemporary language user more precisely. Section 2 reintroduces the methodology for identifying distinct lexical concepts. Section 3 identifies the distinct lexical concepts for *up* and examines how each lexical concept is produced/acquired and connected to the others in the mind. Section 4 proposes the semantic network of *up*. Section 5 provides a brief summary.

6.1. What is revealed by the historical analysis

In Chapters 4 and 5, I made a prediction concerning how each usage of *up* was derived historically and how each lexical concept had been created via the derivational processes of various types of uses. Based on the observations made in the previous chapters, three main types of derivational processes can be identified:

i) A given usage of *up* is derived from a physical scene involving an upward direction,
ii) A given usage of *up* is derived from the physical scene encoded by the combination of *up* with a particular verb within VPCs, and
iii) A given usage of *up* is derived as a consequence of the repeated co-occurrence with a particular verb within VPCs.

By way of illustration, let us consider the derivational processes of the uses of *turn up*.

(1.1) Meaning: Into existence, prominence, vogue, or currency; so as to appear or prevail.
Example: Dinner ready… Smyth, however, had not turned up.
(1902 T. W. Webber *Forests Upper India* xiii. 156)

(1.2) Meaning: So as to relinquish, abandon, or forsake.
Example: So turn up the job,..And leave it to me! (1885 *Punch* 13 June)

As argued in Chapter 4, it might be considered that the usages of *up* in (1.1) and (1.2) were derived via various types of derivational processes. For example, the use of *up* in (1.1) may have been created based on the kinds of daily experiences in which someone is found as a result of looking up or a door being opened (an old type of door that opens by moving itself upward)[1], or that the higher the sun rises/a heap becomes/a plant grows/a person's posture becomes, the more likely they will be perceived as having appeared in front of a viewer. I assume that these types of physical scenes involving an upward orientation enabled *up* to become associated with the 'into existence' usage in (i). The other possible derivational processes for this use may relate to (ii). In other words, there is a possibility that the entire VPC *turn up* has become associated with this usage via the kinds of ubiquitous experiences in which something can be found as a result of turning the soil (this action usually includes an upward orientation)[2] or the face of a card that has not been seen thus far can be seen as a result of turning it over - this

[1] This usage is identified in the following example in the OED: The dore is up, and he in wente (1390)
[2] This usage was first identified in the following example in the OED:
They do wickedly, whiche doe turne vp the auncient terries of the fieldes (1563)

action also includes an upward orientation[3]. I also assume that the "into existence" usage of *up* may have been abstracted away from a number of physical scenes associated directly with *turn up*, or that the derivational processes as specified in (iii) might have influenced the creation of a novel usage. For example, the usage of *up* in (1.2) may have been produced as an indirect consequence of *up* having begun to be associated with the "to hand over" usage due to its repeated co-occurrence with a particular verb such as *give* within VPCs. In other words, it may be possible to consider that the usage created due to the repeated co-occurrence of *up* with *give* was taken over by *up* within *turn up* in a more evolved way.[4] Based on the observations above, I argue that these three types of derivational processes also affect the derivation of each usage in the mind of a contemporary language user.

6.2. A methodology for identifying distinct lexical concepts

Before proceeding to the detailed analysis of each lexical concept, I reintroduce a methodology for identifying distinct lexical concepts explained in Chapter 3. As argued in Chapter 3, in order to identify distinct lexical concepts associated with a given lexical item in a more precise way, two types of criteria are needed: 1) the criterion to distinguish one lexical concept from another associated with a given lexical item, and 2) the criterion to identify which lexical concept is included in a given example.

As far as the criterion in 1) is concerned, as noted in previous studies (e.g., Tyler & Evans 2003), various types of experiential correlations can be regarded as playing a crucial role in creating distinct lexical concepts associated with a given lexical item. For example, it might be considered that the [INCREASE IN NUMBER] lexical concept of *up* as in *prices went up* is produced due to the experiential correlation between the increase in the number of some entities such as sweets in a container and the upward orientation of the upper level inside the container. I assume that the more psychologically real the correlation between two types of experiences is among language users, the more influential it is for the derivation of a novel usage associated with a given lexical item.[5] To put this another way, it follows that the stronger the correlation is, the more likely the experience that implies a non-physical meaning, or that has not yet been associated with the lexical item, becomes associated with it as a novel usage. With regard to

[3] This usage was first identified in the following example in the OED:

The most coldest that euer turn'd vp Ace (a1616)

[4] I hypothesise that one usage can be created through various types of derivational processes and that the more derivational processes can be considered to create a usage, the more the usage can be established in the mind.

[5] It might be possible to validate the extent to which one experience correlates to the other via psychological experiments.

VPCs, I hypothesise that the more VPCs can express a given experience, the more the notion relating to the experience tends to be established as an independent lexical concept of a spatial particle that appears in those VPCs.[6] For example, as will be shown later, it seems that the notion of proximity is shared by a number of VPCs such as *walk up*, *cuddle up*, and *gather up*; as a result, it is likely that *up* in these VPCs developed a stronger association with the notion of proximity, giving rise to the [PROXIMITY] lexical concept. In other words, it might be considered that the recurring conceptualisation of the same experience by a wide variety of VPCs enables language users to establish the notion relating to the experience as a more robust lexical concept of the spatial particle.

As for the criterion in 2), as pointed out in Chapter 3, while the methodology proposed by Evans (2009) is useful in some respects (for example, it may be possible to judge that the use of *up* co-occurring with the lexical item *price* or numbers is likely to be related to the [INCREASE IN NUMBER] lexical concept), it is insufficient in that sentential contexts in situated language use are miscellaneous, as pointed out by Taylor (2010). Therefore, in order to supplement the criterion, both psychological and neuroscientific considerations may be beneficial. For example, from the psychological point of view, experiments might enable us to prove that each lexical concept can exist independently (for example, in order to confirm if *dress up* includes the [POSITIVE ASSESSMENT] or [COMPLETION OF EVENT] lexical concepts, it may be effective to ask subjects to compare *dress up* with *dress* and answer a question about the element that is included in *dress up* and that is not included in *dress*, and so on). Furthermore, from the neuroscientific point of view, it might be possible to show which area in the brain is activated or what type of substance is secreted when a given example is processed in the mind.[7] Although it is difficult to utilise these types of evidence in an adequate way at present, as also noticed by Evans (2009), this kind of converging evidence is essential to identify the distinct lexical concepts associated with a given lexical item precisely. Hence, in this chapter, drawing on the work in cognitive psychology and neuroscience currently available, in addition to the methodology proposed by Evans (2009), I attempt to identify the distinct lexical concepts associated with the spatial particle *up*.

[6] I speculate that the fact that a given experience (or a notion implied by the experience) can be shared by many VPCs reflects the reality that there are many daily experiences that include the notion.

[7] For example, in the future, it may become possible to identify which area in the brain is activated depending on whether a given VPC includes the notions of [PHYSICALLY UPWARD ORIENTATION], [INCREASE IN NUMBER], [POSITIVE ASSESSMENT] and so on.

6.3. Lexical concepts associated with *up* as a spatial particle

Having reviewed what was revealed via postulating the historical formation of the semantic network of *up*, let us examine how each lexical concept is derived and connected to another in the mind. In the following, I identify the distinct lexical concepts associated with *up* by employing the methodology explained above (Section 3.1). I will then provide a more detailed explanation for each lexical concept in turn (Section 3.2).

6.3.1. Identification of distinct lexical concepts for *up*

I claim that the spatial particle *up* is associated with thirteen distinct lexical concepts. By way of illustration, let us consider the following examples:

(2.1) The rocket shot *up*	[PHYSICALLY UPWARD ORIENTATION]
(2.2) Prices went *up*	[INCREASE IN NUMBER]
(2.3) We gave *up* hope	[CEASING TO INTERACT]
(2.4) She cried *up* his skills as a writer	[POSITIVE ASSESSMENT]
(2.5) Mary was cheered *up* by the thought	[POSITIVE MENTALITY]
(2.6) The kitty cuddled *up* to me	[PROXIMITY]
(2.7) She took *up* tennis at the age of eleven	[BEGINNING OF EVENT]
(2.8) He ate the sandwich *up*	[COMPLETION OF EVENT]
(2.9) I met *up* with him outside	[ACCESSIBILITY]
(2.10) He is really moving *up* in the world	[SOCIAL PROMINENCE]
(2.11) My long-lost book just turned *up*!	[VISUAL PROMINENCE]
(2.12) Turn the volume *up*	[AUDITORY PROMINENCE]
(2.13) The computer is *up*	[ACTIVE]

(Lindner 1981)

In the first example in (2.1), *up* appears to relate to the upward orientation of physical objects such as *rockets*. Thus, the lexical concept that sanctions this instance of *up* might be glossed as [PHYSICALLY UPWARD ORIENTATION]. In (2.2), the lexical concept sanctioning *up* might be glossed as [INCREASE IN NUMBER]. This follows because *up* relates to the increase in number implied by the lexical item *price*. In (2.3), the lexical concept that sanctions this use of *up* appears to relate to ceasing to interact with an entity such as *hope*. Thus, the lexical concept involved here might be glossed as [CEASING TO INTERACT]. In (2.4), the lexical concept that

sanctions this use of *up* appears to relate to a positive assessment of a person in terms of the skill of the other person. Thus, the lexical concept involved here might be glossed as [POSITIVE ASSESSMENT]. In (2.5), the lexical concept sanctioning *up* might be glossed as [POSITIVE MENTALITY]. This follows because *up* relates to the favourable mental condition of a person.[8] In (2.6), the lexical concept that sanctions this instance of *up* appears to relate to a proximal state between a person and a cat. Thus, the lexical concept involved here might be glossed as [PROXIMITY]. In (2.7), the lexical concept sanctioning *up* might be glossed as [BEGINNING OF EVENT]. This follows because *up* relates to the beginning of an activity designated by the lexical item *tennis*. In (2.8), the lexical concept that sanctions this use of *up* appears to relate to the completion of an event encoded by *eat the sandwich*. Thus, the lexical concept involved here might be glossed as [COMPLETION OF EVENT]. In (2.9), the lexical concept sanctioning *up* might be glossed as [ACCESSIBILITY]. This follows because *up* relates to the moment at which the speaker gains access to someone. In (2.10), the lexical concept that sanctions this instance of *up* appears to relate to the social upgrading of a man. Thus, the lexical concept involved here might be glossed as [SOCIAL PROMINENCE]. In (2.11), the lexical concept sanctioning *up* might be glossed as [VISUAL PROMINENCE]. This follows because *up* relates to the moment at which the entity in the subject position, *a book*, came into the view of the speaker. In (2.12), the lexical concept that sanctions this instance of *up* appears to relate to an increase of the volume of something such as a television or music. Thus, the lexical concept involved here might be glossed as [AUDITORY PROMINENCE]. In (2.13), the lexical concept sanctioning *up* might be glossed as [ACTIVE]. This follows because *up* relates to the active state of a *computer*.

In order to confirm whether the uses of *up* in the above examples are sanctioned by distinct lexical concepts, I begin by applying the formal selectional criterion. From my observations, it seems that all the usages of *up* from (2.1) to (2.13) inclusive can appear in VPCs, although the way in which each use appears in a given VPC differs. For example, the instances of *up* in (2.1), (2.2), (2.4)-(2.8) and (2.12) can appear in both transitive and intransitive VPCs, as in (2.14)-(2.21):

(2.14) a. Lift *up* your head (transitive)

b. The rocket shot *up* (intransitive) [PHYSICALLY UPWARD ORIENTATION]

[8] What is meant by the term 'positive' here is that a certain condition (a strong emotional state) is present. Thus, it can indicate both positive and negative states.

(2.15) a. The girl grew *up* in London (transitive)[9]

b. Prices went *up* (intransitive) [INCREASE IN NUMBER]

(2.16) a. She cried *up* his skills as a writer (transitive)[10]

b. He is really moving *up* in the world (intransitive)[11]

[POSITIVE ASSESSMENT]

(2.17) a. Mary was cheered *up* by the thought (transitive)

b. He brightened *up* after you began talking with him (intransitive)

[POSITIVE MENTALITY]

(2.18) a. He gathered *up* his tools (transitive)

b. He walked *up* and said hello (intransitive) [PROXIMITY]

(2.19) a. She took *up* tennis at the age of eleven (transitive)

b. A storm blew *up* (intransitive) [BEGINNING OF EVENT]

(2.20) a. He ate the sandwich *up* (transitive)

b. The ice floe broke *up* (intransitive) [COMPLETION OF EVENT]

(2.21) a. Turn the volume *up* (transitive)

b. We can't hear you. Speak *up*! (intransitive) [AUDITORY PROMINENCE]

On the other hand, the uses of *up* in (2.3), (2.9) and (2.13) can only appear in transitive VPCs, as in (2.22)-(2.24):

(2.22) We gave *up* hope (transitive) [CEASING TO INTERACT]

(2.23) He connected *up* the phone (transitive) [ACCESSIBILITY]

(2.24) The speech fired *up* the crowd (transitive) [ACTIVE]

Furthermore, the uses of *up* in (2.10) and (2.11) can only appear in intransitive VPCs, as in (2.25) and (2.26):

(2.25) He is really moving *up* in the world [SOCIAL PROMINENCE]

(2.26) My long-lost book just turned *up*! [VISUAL PROMINENCE]

[9] As will be shown later, this example can be considered to be a bridging context (Evans & Wilkins 2000) in which two distinct lexical concepts, [PHYSICALLY UPWARD ORIENTATION] and [INCREASE IN NUMBER], are included at the same time.

[10] This example can be seen as a bridging context in which two distinct lexical concepts, [AUDITORY PROMINENCE] and [POSITIVE ASSESSMENT], are included at the same time.

[11] This example can be regarded as a bridging context in which two distinct lexical concepts, [SOCIAL PROMINENCE] and [POSITIVE ASSESSMENT], are included at the same time.

Moreover, as seen in the above examples, the instances of *up* in (2.6) and (2.9) can co-occur with a prepositional phrase, as repeated below:

(2.27) The kitty cuddled *up* to me [PROXIMITY]
(2.28) I met *up* with him outside [ACCESSIBILITY]

In addition, the instances of *up* in (2.1), (2.2), (2.5), (2.8), (2.10), (2.11) and (2.13) can function as adverbs independent of a specific verb, as in (2.27)-(2.33):

(2.29) The moon is *up* [PHYSICALLY UPWARD ORIENTATION]
(2.30) United was 3-1 *up* at half time [INCREASE IN NUMBER]
(2.31) Teachers are *up* in arms about new school tests [POSITIVE MENTALITY]
(2.32) Your time is *up* [COMPLETION OF EVENT]
(2.33) Give me a ring when you're *up* in London [SOCIAL PROMINENCE]
(2.34) The sun was already *up* when they set off [VISUAL PROMINENCE]
(2.35) The computer is *up* [ACTIVE]

From the above observations, it is clear that the formal selectional criterion is insufficient to distinguish one lexical concept from others in that the formal selectional tendencies associated with several usages overlap. Therefore, we need to rely on the semantic selectional criterion.

As for the [PHYSICALLY UPWARD ORIENTATION] lexical concept, physical entities always fill the subject and/or object positions of VPCs, or the subject positions of adjectival usages. The [INCREASE IN NUMBER] lexical concept can co-occur with the lexical items relating to numbers such as *prices*, or relating to an increase in amount/extent such as *hurry* or *sweeten*.[12] This lexical concept can also apply to VPCs that imply an increase in number as a whole, such as *grow up*.[13] With regard to the [CEASING TO INTERACT] lexical concept, the following semantic selectional tendencies are exhibited: The subject positions are always filled by humans. In addition, this lexical concept can appear in VPCs that suggest ending the interaction with some entity designated by the object such as *give up*. Moreover, this lexical

[12] As will be explained later, the reason that the [INCREASE IN NUMBER] is related closely to the increase in amount/extent is because an [INCREASE IN NUMBER] often leads to an increase in amount in our daily experiences, which in turn can be reinterpreted metaphorically as an increase in extent.
[13] As will be shown later, the reason that the VPC *grow up* is associated closely with the [INCREASE IN NUMBER] is because the phenomenon of growing up is always accompanied by an increase in age (that is, number) in our daily experiences.

concept can apply to VPCs such as *put up* (*a jar of jam*) that indicate the results of the entities designated by the objects ending the interaction with humans encoded specifically by the subjects. The [POSITIVE ASSESSMENT] lexical concept can co-occur with verbs relating to expressing one's opinion, such as *cry*. In addition, it is possible to consider that this lexical concept can appear in VPCs such as *move up* that suggest the upgrading of social status. This follows because the notion of [POSITIVE ASSESSMENT] is always implied by the upgrading of social status.[14]With regard to the [POSITIVE MENTALITY] lexical concept, the following semantic selectional tendencies are exhibited: Entities that bring humans into a positive mind set fill the subject or object positions. Moreover, this lexical concept can co-occur with lexical items relating to bringing humans into a state of positive mentality such as *cheer*, *fire* and *in arms*. In addition, this lexical concept can apply to verb phrases such as *pluck up courage* that designate bringing humans into a state of positive mentality. Moreover, there are cases in which the identification of the lexical concept is possible due to its sentential context that leads a person to be in a state of positive mentality, as in (2.36):

(2.36) After receiving the award, the performer was really *up*

The [PROXIMITY] lexical concept can co-occur with verbs relating to movement, such as *walk* and *come*, or that designate unifying more than two entities, or two parts of the same entity such as *cuddle* and *bend*. The [BEGINNING OF EVENT] lexical concept can apply to verb phrases that indicate the beginning of some activity/event as a whole, such as *take up tennis* and *strike up a friendship*. As for the [COMPLETION OF EVENT] lexical concept, the following semantic selectional tendencies are exhibited: In the case of adjectival usage, lexical items relating to time and events such as *a game* fill the subject positions. In the case of VPCs, this lexical concept can co-occur with verbs that are semantically compatible with the completive *up*; that is to say, verbs that result in their completion as a consequence of the upward orientation of the activity encoded by them such as *eat*, verbs that imply a state of proximity such as *shut*, verbs that indicate the notion of completion such as *finish*, or verbs relating to an increase in terms of number, such as *break*.[15] The [ACCESSIBILITY] lexical concept can apply to verb phrases that encode situations in which one entity becomes connected to another, such

[14] According to the notion of a gradient of activation (Evans 2009), it might be considered that the [SOCIAL PROMINENCE] lexical concept achieves greater activation than does the [POSITIVE ASSESSMENT] lexical concept in this example.

[15] As will be shown later, the reason that verbs relating to the increase in number such as *break* are semantically compatible with the completive *up* is that the completion of the activity encoded by *break* can be characterised in terms of the division of some entity into more than two parts.

as *connect up the phone*, situations in which the likelihood of accessibility increases as a result of the activity designated by them, such as *gather up tools*, or verb phrases that make the entities encoded by the objects public, such as *show up one's effort as a waste of time*. In addition, this lexical concept can co-occur with lexical items relating to the notion of accessibility, such as *for sale*. Moreover, there are cases in which the identification of the lexical concept is possible due to its sentential context that makes the activity designated by the subject public, as in (2.37):

(2.37) When the police found the body in his garden, the game was *up*

It can be considered that this usage of *up* is connected closely not only to the [ACCESSIBILITY] but also to the [COMPLETION OF EVENT] lexical concepts. I will address this issue later. As for the [SOCIAL PROMINENCE] lexical concept, the following semantic selectional tendencies are exhibited: In the case of adjectival usages, this lexical concept can co-occur with lexical items relating to major cities such as *London*. In the case of VPCs, this lexical concept can apply to verb phrases that indicate the upgrading of social status, such as *move up in the world*. The [VISUAL PROMINENCE] lexical concept can apply to VPCs in which entities encoded by the subjects come into view, such as *turn up*, or verb phrases that make the entities designated by the subject or object visually prominent as a result of the activity indicated by them, such as *dress up as Santa Claus*. It may also be possible to consider that adjectival usages as in *the sun is up* imply the visual prominence of entities encoded by the subjects. The [AUDITORY PROMINENCE] lexical concept can co-occur with lexical items relating to sound, such as *volume*, or verbs relating to sound, such as *speak*. Finally, the [ACTIVE] lexical concept can co-occur with lexical items such as *computer*, the active state of which can be characterised by virtue of the lexical concepts associated with *up*,[16] phrases such as *for some activity* that imply a positive attitude towards starting some activity and *in arms* which, as described above, has a close relationship with the notion of [POSITIVE MENTALITY], which is also related closely to the mentally active state of the people encoded by the subject. Moreover, there are cases in which the identification of the lexical concept is possible due to its sentential context, which substantiates the fact that a state designated by *up* has to do with an active state, as in (2.38):

[16] As for the relationship between a computer and the lexical concepts associated with *up*, I will explain this in detail later.

(2.38) There are two on (base) and Babe Ruth is *up*[17]

From the above applications, it is obvious that each of the instances of *up* from (2.1) to (2.13) inclusive, based on the semantic and formal selectional criteria, behaves as if sanctioned by distinct lexical concepts with distinct lexical profiles. Table 6.1 summarises the semantic and formal selectional tendencies that comprise the lexical profiles for the lexical concepts considered:

Table 6.1. Lexical profiles associated with lexical concepts that sanction the considered uses of *up*

Gloss	Brief description of conceptual content	Nature of semantic selectional tendencies	Nature of formal selectional tendencies
[PHYSICALLY UPWARD ORIENTATION]	Upward orientation of a moving/static physical entity	Physical entities e.g., *a bone*	Transitive/intransitive VPCs, adjectival uses
[INCREASE IN NUMBER]	Increase in number/ amount/extent	Number, e.g., *price* Increase in amount/ extent, e.g., *sweeten* Implication of number, e.g., *grow up*	Transitive/intransitive VPCs, adjectival uses
[CEASING TO INTERACT]	Loss of interaction between two entities	Human agents Loss of interaction, e.g., *give up*	Transitive VPCs
[POSITIVE] two variants:	Presence of a certain condition		
[POSITIVE ASSESSMENT]	Presence of a favourable assessment	Human agents Vocalisation, e.g., *cry* Implication of a favourable assessment, e.g., *move up*	Transitive/intransitive VPCs
[POSITIVE MENTALITY]	Presence of a favourable/unfavourable mental condition	Change of a mental state, e.g., *cheer*, *fire*, *pluck up courage*	Transitive/intransitive VPCs, adjectival uses

[17] In this example, the sentential context suggests that a person designated by the subject position is in an active state in that he is standing on the mound and preparing to hit a ball.

[PROXIMITY]	Proximal state between two entities	Movement, e.g., *walk* Unification of more than two entities, e.g., *cuddle*	Transitive/intransitive VPCs *to*-phrase
[EVENT] two variants:	Aspect of an event/ some activity		
[BEGINNING OF EVENT]	Inchoative aspect	Beginning of some activity, e.g., *take up tennis*	Transitive/intransitive VPCs
[COMPLETION OF EVENT]	Completive aspect	Completion of an activity e.g., *finish* Completion of an activity characterised by the lexical concepts of *up*, e.g., *eat up* Time/event (adjectival)	Transitive/intransitive VPCs, adjectival uses
[ACCESSIBILITY]	Increase of Accessibility	Increase of accessibility between two entities, e.g., *gather up*	Transitive VPCs *with*-phrase
[PROMINENCE] two variants:	Cognitive highlighting		
[SOCIAL PROMINENCE]	Upgrading of social status Social importance	Upgrading of social status, e.g., *move up* Social importance, e.g., *in London*	Transitive/intransitive VPCs
[PERCEPTUAL PROMINENCE] two variants:	Perceptual highlighting		
[VISUAL PROMINENCE]	Visual highlighting	Appearance, e.g., *turn up* Visual prominence, e.g., *dress up*	Transitive/intransitive VPCs, adjectival uses
[AUDITORY PROMINENCE]	Auditory highlighting	Increase in auditory prominence, e.g., *turn the volume up*	Transitive/intransitive VPCs
[ACTIVE]	Active states Change into active states	Computing systems Implication of active states, e.g., *in arms*, *for some activity* Change into active	Transitive VPCs, adjectival uses

6.3.2. Derivational processes of distinct lexical concepts for *up*

Having identified the distinct lexical concepts associated with *up* in the previous section, I will now provide a more detailed explanation of the derivational process(es) for each lexical concept in turn.

6.3.2.1. Physically Upward Orientation

As argued in the previous chapters, among the distinct lexical concepts associated with *up* as a spatial particle, this lexical concept is considered to be the primary one shared by a wide selection of physical scenes from which all the other lexical concepts are derived directly or indirectly. To illustrate, let us consider the following examples:

(3.1) The rocket shot *up*
(3.2) Pile *up* the bricks
(3.3) Lift *up* your head
(3.4) Did I get you *up*?
(3.5) Let's hang *up* your coat
(3.6) Deep in the Leukon Valley, the magnificent Wilder Kaiser mountains soar *up* one side, with Hartkaiser and Astberg looming on the other

The use of *up* seems to indicate the upward orientation of the rocket shot into the sky in (3.1), the piling process of bricks in (3.2), the head being raised into a more upright position in (3.3), the action of getting out of bed in (3.4), the action of hanging a coat in (3.5), and the sight of a viewer accompanied by the upward motion of the eyeballs and head in (3.6). Although all the usages from (3.1) to (3.6) inclusive appear in various types of sentential contexts, I argue that the lexical concept shared by all the examples is [PHYSICALLY UPWARD ORIENTATION]. The reason that I argue this is the case is that when the conceptual information evoked by the physical scene in which each usage appears is dissolved into components according to the psychological assumption concerning the conceptual system (e.g., Barsalou 1999), it always includes physically upward orientation as a component. To clarify this point, let us consider the following diagram:

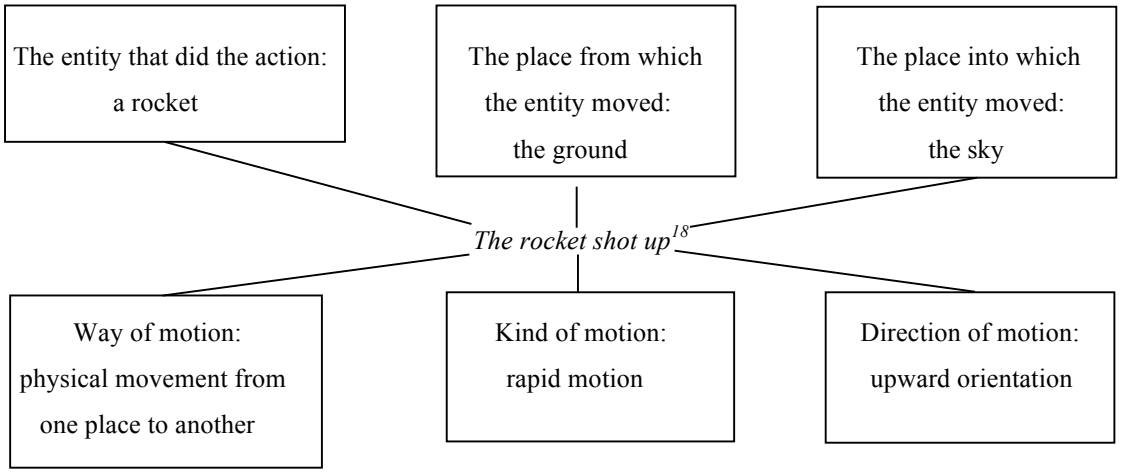


Figure 6.1. The conceptual information evoked by the physical scene *The rocket shot up*

Figure 6.1 represents the conceptual information evoked as a result of interacting with the physical scene in which a rocket shot up directly or via a linguistic resource. Taking into account that, due to the cognitive ability of selective attention, the conceptual system is componential in nature (e.g., Barsalou 1999), it is plausible to assume that the conceptual information associated with this physical scene consists of (at least) six components: the entity that performed the action (a rocket), the place from which the entity moved (the ground), the place into which the entity moved (the sky), the way of motion (physical movement from one place to another), the kind of motion (rapid motion) and the direction of motion (upward orientation). What should be noted here is that physically upward orientation can be extracted as one component. I argue that the same is true for all the examples above. Although the physical scene relating to (3.6) does not seem to include the element of physically upward orientation on its own, it can be interpreted as involving the element via the human cognitive system. To illustrate this, let us consider the following diagram:

[18] This Italics signify the physical scene represented by the linguistic expression.

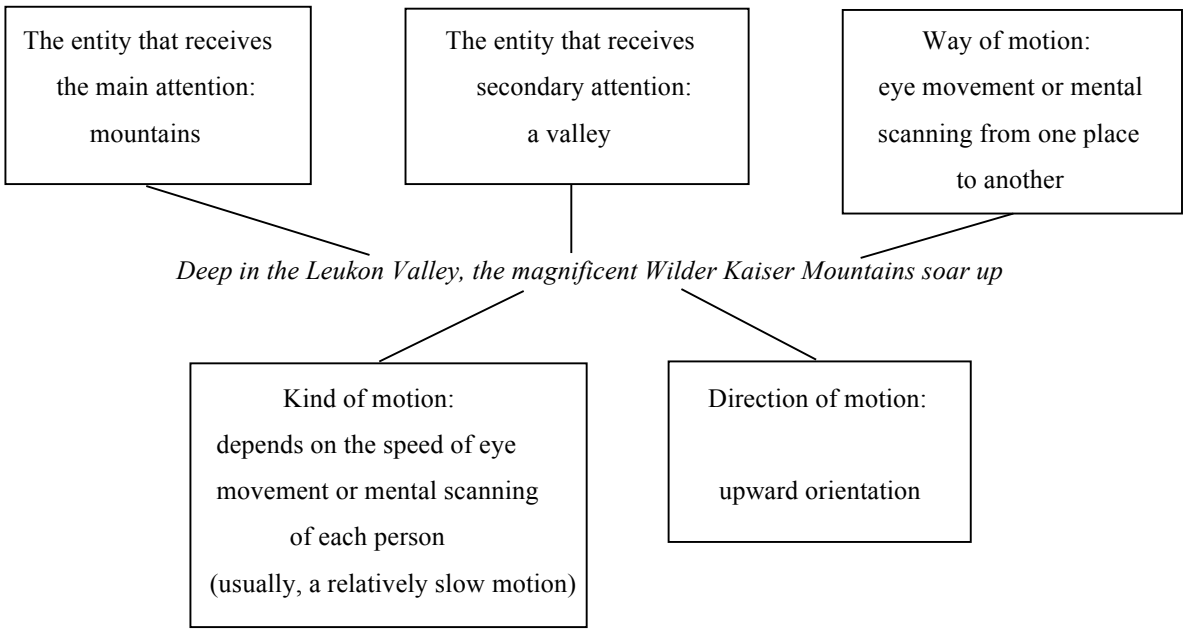


Figure 6.2. The conceptual information evoked by the physical scenario *Deep in the Leukon Valley, the magnificent Wilder Kaiser Mountains soar up*

Figure 6.2 represents the conceptual information evoked as a result of interacting with the physical scene that deep in the valley are mountains directly or via a linguistic resource. What is important to note here is that the element of motion is included among the cognitive models associated with the physical scene despite the scene itself not implying any motion. When attempting to model how this kind of physical scene is processed in the mind, it is crucial to pay attention to how humans capture the scene, but the scene itself. As is obvious from the choice of the verb *soar* to represent this physical scene, the person who produced the expression captured the scene in terms of motion. I argue that the element of upward orientation can be extracted not only from physical scenes that include actual motion, but also from physical scenes that include fictive motion (Talmy 2000).

6.3.2.2. Increase in Number (Amount)

I argue that this lexical concept is likely to have been created through the derivational processes of various types of usages. By way of illustration, let us consider how each usage of *up* is derived in the mind or acquired and incorporated into the existing semantic network, as well as how the [INCREASE IN NUMBER] lexical concept is created based on these derivational/incorporative processes:

(3.7) The girl grew *up* in London

(3.8) Prices went *up*

(3.9) Hurry *up*! You're going to be late

(3.10) United was 3-1 *up* at half time

(3.11) I sweetened *up* the sauce

Firstly, I speculate that the instance of *up* in (3.7) is derived from the following type of physical scene: when children change towards mature age, it is usual that they become taller than they were previously. Due to the inseparable relationship between changing towards mature age and the increase in their bodily height, *up* may come to be associated with the increase in age. There is a possibility that this sort of experiential correlation functions as a prompt, giving rise to the [INCREASE IN NUMBER] lexical concept.

As for (3.8), the usage may be derived from the following types of daily experiences relating to the correlation between physically upward orientation and the increase in number[19]: the greater the bodily height of a child becomes, the closer they become to maturity/the more bricks are piled, the more their height increases and so on.

With regard to (3.9), it is likely that *hurry up* is acquired as a whole due to its idiomatic nature. I speculate that this usage of *up* is incorporated into the existing semantic network via the abstract association of a greater degree with a greater quantity (see Lindner 1981). As mentioned in Chapter 4, it is arguable that certain experiential correlations exist, such as the experience of an increase in heart rate when a person runs at speed. It is therefore likely that humans tend to interpret a greater degree in terms of a greater quantity.

As far as (3.10) is concerned, this usage is likely to be derived from the association of *up* with the increase in number being established fully in the mind of a language user due to the daily experiences described above.

Moreover, since the action of sweetening implies the addition of more sugar (or similar substances), the instance of *up* in (3.11) may be derived from the daily experience in which the greater the amount of something becomes, the higher its height becomes, as illustrated schematically in Figure 6.3:

[19] In the event that this usage is acquired via a linguistic resource, it might be incorporated into the existing semantic network via the same kinds of daily experiences.

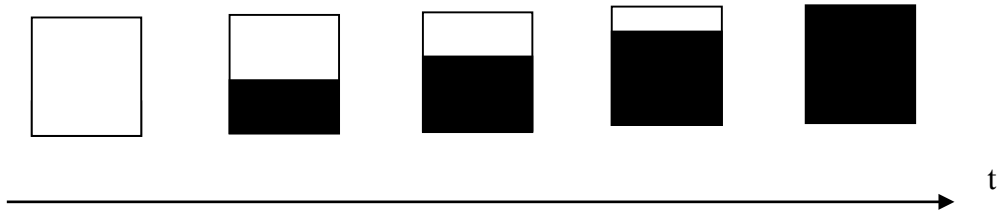


Figure 6.3. Schematic representation of the relationship between an increase in an amount and physically upward orientation

Concerning a number of usages that are considered to include the same lexical concept, I propose the following hypothesis:

(H1) Hypothesis relating to a number of usages sharing the same lexical concept:
It is fundamental that each usage is derived from the physical scene relating directly to itself. When the existing usage shares the same lexical concept as a novel usage, the existing usage plays a role in validating this novel usage.

Employing the hypothesis described above, I assume that each usage tends to be derived from the physical scene relevant directly to itself and that the existing usage sharing the same lexical concept (here, the [INCREASE IN NUMBER] lexical concept) plays a role in warranting a novel usage.

6.3.2.3. Ceasing to Interact

In the same way as for the case of the [INCREASE IN NUMBER] lexical concept, I argue that this lexical concept has been created through the derivational processes of various types of usages. By way of illustration, let us consider the derivational process(es) for each usage of *up* in the following examples:

(3.12) We gave *up* hope
(3.13) They threw *up* the whole city lifestyle
(3.14) I put *up* six jars of jam

I assume that the usage of *up* in (3.12) is derived from the kind of daily experience in which what has to be *given up* tends to be located higher in respect of one's ability or accessibility. For example, when a child gives a toy to a parent (because playtime is over), it becomes

difficult for the child to access it. Parents are always much taller than their very young children; thus, when children give something to their parents, the movement is always in the upward direction. It is likely that such an experiential correlation influences the creation of this usage.

In (3.13), the use of *up* may be created from the following kind of daily experience: When a person throws something (for example, a losing ticket) upwards, this often means that s/he does no longer needs it.

In (3.14), the usage of *up* can be incorporated into the existing semantic network via the following type of daily experience: When a person has something s/he finds unnecessary at present, it is usual that s/he puts the item on a shelf (upward orientation).

6.3.2.4. Positive Assessment

Similar to the previous lexical concepts, I speculate that this lexical concept has been created via the derivational processes of various types of usages. To illustrate this, let us consider the derivational process(es) of each usage of *up* in the following examples:

(3.15) He is really moving *up* in the world
(3.16) She got dressed *up*
(3.17) The candidate talked *up* his own plan
(3.18) She cried *up* his skills as a writer

I speculate that the usage of *up* in (3.15) has been derived from the inseparable correlations between experiencing the upgrading of social status and a higher salary/a higher lifestyle/more work accompanied by more responsibilities and so on. It is also reasonable to assume that people with a higher social status live in higher places such as castles or tall buildings. Furthermore, since the upgrade of social status often leads to being assessed positively by other people, it may be possible to think that this usage implies the [POSITIVE ASSESSMENT] lexical concept.

In (3.16), *dress up* usually means 'to dress formally.' The reason that this is the case is as follows: It can be considered that dressing in formal clothes relates to a number of daily experiences involving notions relating to an upward orientation. For example, when a woman wears formal clothes, which tend to be higher in terms of price than are casual clothes,[20] it is usual that she puts on makeup and sets her hair more carefully than usual (cf. Lindner 1981),

[20] In our daily lives, it is also more likely that higher prices correlate closely with higher quality and better appearance.

resulting in a better appearance accompanied not only by a positive mentality but also by a positive assessment from other people.[21] In addition, formal clothes are related closely to those who are located higher in terms of social status because there are many more opportunities for these people to wear such clothes.[22] The instance of *up* in (3.16) may have been derived from the daily experiences described above.

As for (3.17) and (3.18), the usage of *up* may have been derived from the established correlation between *up* and the notion of auditory prominence. That is, I assume that when a person considers what s/he is going to say to be important or favourable, s/he tends to express it in a louder voice. It is obvious when looking at a cartoon that the bigger a letter is, the louder the sound that is indicated by it. This follows because a louder voice is associated closely with an upward direction. Hence, there is a possibility that such a daily experience gave rise to this usage associated closely with the [POSITIVE ASSESSMENT] lexical concept.

6.3.2.5. Positive Mentality

In the same way as for the previous lexical concepts, I assume that this lexical concept was created via the derivational processes of various kinds of usages. To clarify this point, let us consider the derivational process(es) for each usage of *up* in the following examples:

(3.19) His smile brightened *up* my day
(3.20) Mary was cheered *up* by the thought
(3.21) The speech fired *up* the crowd
(3.22) He finally plucked *up* courage to do a parachute jump
(3.23) After receiving the award, the performer was really *up*
(3.24) Teachers are *up* in arms about new school tests

Based on Lindner (1981) and Kövecses (1991), I argue that the usages of *up* in (3.19), (3.20) and (3.23) are derived from the inseparable relationship between a greater degree and a greater

[21] A number of neuroscientific studies (e.g., O'Doherty et al. 2003) have revealed that, when a person sees a beautiful entity, the amount of blood flow increases in a part of the brain called the orbitofrontal cortex (a prefrontal cortex region in the frontal lobes) relating to emotion and reward in decision making. It is well known (e.g., Wise & Rompre 1989) that, when the brain judges an input as a reward, a hormone called dopamine is secreted, resulting in the increase/rise of such physiological phenomena as pulse rate or body temperature. This kind of a greater amount that can be characterized in terms of physically upward orientation may relate to the creation of this usage.

[22] Neuroscientific research (Zerubavel et al. 2015) has demonstrated that, when someone sees a person who is located higher by virtue of popularity in their community, the neuron network concerning social evaluation is activated. In the world in which we live, those who are located higher by virtue of social status tend to be more popular than are those who are not. It may be possible that this sort of upward orientation affected the creation of this usage.

amount. To put this another way, when a person feels happy, it is usual that his or her body temperature rises and pulse rate increases. There is a possibility that such physiological changes are interpreted by virtue of the increase in the number or amount that can be characterised in terms of upward orientation. Furthermore, as pointed out by Grady (1997), it is also likely that the inextricable correlation between feeling happy and having an upright posture affected this usage. This insight is substantiated by work in the field of behavioural science (Peper et al. 2017) that proved that, when we sit up straight, we are more likely to recall positive memories or think of something positive in general. In addition, Kövecses (1991) implies that the following kinds of experiential correlations influenced the creation of this usage: When we feel happy, we often smile, causing the sides of the mouth to turn upwards, or when we feel happy, we often want to jump up. Moreover, he suggests that shining white teeth (that is, brightness) caused by smiling could be associated with happiness. Of course, it is possible to consider that entire VPCs such as *brighten up* became associated with this usage via conceptual metaphors on the basis of the similarities between the figurative and the original literal usages. To clarify this point, let us consider the following example:

(3.25) The sky brightened *up*

Even a case such as this, it seems plausible to assume that a number of physical scenes substantiate conceptual metaphors. That is to say, when the sky brightens, it is likely that the sun is located higher in the sky. The sun may be in the middle of rising from the horizon or appearing from behind a cloud. When the sun becomes located higher in the sky, the temperature is likely to increase due to the strong influence of the sunlight. As a result, the people's body temperatures may rise, and they may even sweat. Moreover, there is a possibility that the brightening of the sky may make people feel happy or excited, particularly if they are going to a picnic! I assume that, even in a case in which conceptual metaphors may have affected the derivation of a usage as exemplified in (3.19), the series of physical scenes described above continued to influence the process.[23]

It can be considered that the same holds for (3.21), (3.22) and (3.24). When a person feels more passionate or excited, as in (3.21), or prepares him/herself emotionally to tackle an

[23] Furthermore, neuroscientific research (e.g., Young 2007) has suggested that looking at natural sunlight facilitates the secretion of serotonin, a hormone that serves as a neurotransmitter involved in the control of pain perception, the sleep-wake cycle and mood, resulting in making those who do so feel happy. Moreover, it is also demonstrated in the field of neuroscience (Sato *et al*. 2015) that the happier a person feels, the bigger a part of the right brain called the precuneus (the medial area of the superior parietal cortex) becomes. It is possible that these types of upward orientation affected the production of this usage.

overwhelming task, as in (3.22), or is very upset about something, as in (3.24), his or her body temperature is likely to rise and the pulse rate to increase.[24] In addition, as pointed out by some scholars (e.g., Lakoff 1987), negative feelings such as anger are related closely to physically upward orientation, as illustrated in the following examples: *She got all steamed up*, *I blew my top*, *My anger kept building up inside me* and so on. It can be considered that the upward orientation of the physiological phenomena and brain chemicals such as noradrenaline influenced the derivation of this use.

6.3.2.6. Proximity

I also assume that this lexical concept was produced via the derivational processes of various kinds of usages. By way of illustration, let us consider the derivational process(es) of each usage of *up* in the following examples:

(3.26) He walked *up* and said hello
(3.27) The kitty cuddled *up* to me
(3.28) He gathered *up* his tools
(3.29) She's got exams coming *up*
(3.30) Move the deadline *up* by an hour

It may be that the instance of *up* in (3.26) was derived from the following type of daily experience; When people are in a situation in which someone is approaching them, or they are approaching someone, they always see the head of the person move upward (e.g., Lakoff & Johnson 1980). In addition, their footsteps tend to become louder (auditory prominence) and, if they had put on perfume, the smell would be experienced more strongly (olfactory prominence). Due to the inseparable relationship between the approach of someone and the upward movement of the head/the more distinct sound of footsteps/the more distinct smell of perfume, *up* may have become associated with the action of approaching, resulting in the close association with the notion of proximity. In addition, the derivation of this usage may be influenced by the daily experience in which the closer two or more people (or one person and one cat as in (3.27)) become, the warmer they feel (the inseparable correlation between body temperature and proximity).[25]

[24] In this case, it is more likely that the secretion of noradrenaline, a hormone that functions as a neurotransmitter involved in the control of anger, is facilitated (e.g., Sonnentag & Fritz 2006).
[25] Furthermore, it might be considered that a hormone called oxytocin plays an important role in deriving this usage. It is well known in the field of neuroscience that the hormone is secreted in the region of the brain called

As for (3.28), it is more likely that the usage of *up* was derived due to the established association between *up* and the notion of proximity that was created due to the physical scenes described above.

In (3.29), the instance of *up* may be associated with the following type of daily experience: When an exam is approaching, the mental stress of those sitting the exam tends to increase, often resulting in making them feel more nervous than usual. As a result, they experience such physiological phenomena as increased pulse rate or a rise in blood pressure due to the secretion of a hormone such as noradrenaline, dopamine or cortisol.[26] In addition, as an exam is approaching, more work may have to be done. I speculate that not only might the upward orientation of the physiological phenomena described above influence the creation of this usage, so might the increase in the amount of work. Of course, it may also be reasonable to assume that this figurative usage is derived from the corresponding literal usage, as in (3.26) via conceptual metaphors, or due to the established association between *up* and the notion of proximity.

In (3.30), two types of interpretations are possible, namely moving the deadline earlier or later by an hour. Both cases can be characterised in terms of the notion of proximity; that is, the proximity to the present time or to the future. It may also be plausible to consider that the [INCREASE IN NUMBER] lexical concept plays a role in deriving the latter interpretation.

6.3.2.7. Beginning of Event

Similarly, I consider that this lexical concept was created via the derivational processes of various types of usages. To illustrate this, let us consider the derivational process(es) of each usage of *up* in the following examples:

(3.31) A storm blew *up*

(3.32) She took *up* tennis at the age of eleven

(3.33) We struck *up* a friendship/conversation

(3.34) Things kept cropping *up* to delay their work

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the posterior lobe of the pituitary gland when a person experiences physical contact with other people or animals. It is also revealed (e.g., Olff et al. 2013) that the secretion of oxytocin activates the neuron network relating to social bonding, resulting in making people feel more connected to their loved ones. Hence, it may be plausible to consider that the inextricable correlation between proximity and a greater amount of oxytocin accompanied by a stronger bond affected the creation of this usage.

[26] Cortisol is a hormone produced by the middle zone of the adrenal cortex within the adrenal gland and is released in response to stress (e.g., Delahunt & Mellsop 1987).

It can be considered that the usage of *up* in (3.31) was derived from the following kind of daily experience: when any kind of wind occurs, it is usually created on the surface of a body of water such as the sea or a lake in an upward orientation due to the rise of the temperature in the area. In addition, when a strong wind occurs, it is usual that part of one's hair, clothes, or fallen leaves on the ground float upwards. If one were on a ship at sea, one would be able to see the sea level rising. Moreover, in such a case, one may feel a strong force pushing one back (increase in extent), hear the sound of the wind increase (auditory prominence) or feel colder (haptic prominence) and so on. I speculate that the various types of physically upward orientation described above affected the creation of this use.

As for (3.32), it is likely that the instance of *up* was derived from the following type of daily experience: When a person picks something up in his or her hand(s), it is usual that s/he engages in an activity using the entity. For example, if the entity is a knife, the person may start to cut vegetables to cook; if the entity is a tennis racket, s/he may start to play tennis. Due to the inseparable correlation between picking a physical object up in one's hand(s)[27] and starting an activity using it, it is possible that *up* became associated with this usage.

In (3.33), there is a possibility that the use of *up* was produced via the following derivational process: The VPC *strike up* is associated with the '(of a band or orchestra) begin to play a piece of music' usage because the verb *strike* is associated with the 'produce (a musical note) by hitting a key' use[28] and, as we saw above, *up* is related closely to the notion of auditory prominence. In our daily experiences, there seem to be many occasions on which the production of sound leads to the beginning of an event. For example, when class starts in school, students can hear the sound of the class bell or the voice of their teacher. Moreover, it is usual that events organised by people (such as business meetings, television programmes and so forth) start with someone's voice or with music. Since both friendships and conversations can begin with someone letting out their voice, the inextricable correlation between letting out one's voice and the beginning of an event may have influenced the creation of the usage in (3.33).

As far as (3.34) is concerned, the usage of *up* could have been derived from the following type of daily experience: After a person plants the seeds for a crop, it is usual that a number of tiny plants emerge from beneath the earth to the surface. As we will see later, there is a

[27] As we will see later, it can be considered that this kind of action gives rise to the notion of accessibility. Hence, it may be plausible to consider that there is a correlation between the [BEGINNING OF EVENT] and [ACCESSIBILITY] lexical concepts.

[28] It can be considered that this usage was itself created from the established association between striking a physical object (particularly musical instruments such as pianos and drums) and the production of sound.

possibility that this kind of daily experience caused *up* to be associated with the notion of visual prominence because those plants become visible as a result of moving from under the earth in an upward orientation. Furthermore, it may be reasonable to consider that the notion of visual prominence became associated with the beginning of an event. For example, imagine the scene of the sun rising. Usually, people notice the beginning of sunrise as a result of the sun appearing or sunlight becoming visible. I speculate that the inseparable correlation of physically upward orientation, visual prominence, and the beginning of an event affected the derivation of the use in (3.34).

6.3.2.8. Completion of Event

In addition to the beginning of an event, *up* also encodes the completion of an event. Here, I define the completion of an event as reaching the final point beyond which a given action can no longer continue. According to my observations, this lexical concept can be identified in a significant number of uses. To illustrate this, let us look at the derivational processes of the following usages:

(3.35) He ate the sandwich *up*
(3.36) He filled *up* his shelves with books
(3.37) She cleaned *up* her room
(3.38) His smile brightened *up* my day
(3.39) She got dressed *up*
(3.40) He shut *up* shop
(3.41) I finally finished *up* my paper
(3.42) The ice floe broke *up*
(3.43) Your time is *up*
(3.44) When the police found the body in his garden, the game was *up*
(3.45) The home team was ahead for the first half of the game, but the score evened *up* after the second half started

It is plausible to consider that the instance of *up* in (3.35) was derived from the following kinds of daily experiences: In order to eat something completely, the physically upward motion of a hand, cutlery and food needs to be repeated until nothing remains on the plate. The upward orientation of the action may affect the creation of this usage. Another possibility is that a more general daily experience plays a crucial role in deriving this use. To put it another way, the

schematic representation depicted in Figure 6.3, regarded as the process of upward motion resulting in a full amount might be translated as the completion of an event (see Lindner 1981). Furthermore, considering that the same schematic representation can be mapped onto the state of a stomach that is being filled by eating something completely, the upward orientation of the upper level of the stomach may influence the creation of this usage.

As for (3.36), it can be considered that *filling up* one's shelves with books includes two types of activities: placing each book in the normal way (vertically) and stacking one book on top of another. Concerning both activities, the identical schematic representation depicted in Figure 6.3 is likely to be related closely. That is, focusing on the blank spaces, not the parts covered by black colour, it is possible to imagine that the empty space is gradually filled until no gap is found. I predict that this type of different construal leads *up* to be associated with the notion of filling a gap, which seems to be compatible with the scene in which more books occupy the empty spaces on the shelves until no gap is found. Moreover, it is reasonable to consider that the more books occupy the inside of a book shelf, the closer one book becomes to another. Thus, it may also be plausible to assume that the notion of proximity influences the representation of this physical scene. With regard to the second activity, it is obvious that the action of stacking includes physically upward orientation. From the observations above, I speculate that not only the notion of filling a gap implying the notion of proximity but also the physically upward orientation involved by the action of stacking may play an important role in deriving the use in (3.36).

Regarding (3.37), as examined in Chapter 4, there is a possibility that a number of notions such as (physically upward orientation/proximity/positive mentality/positive assessment) influenced the creation of this usage. What is important to note here is that this usage also makes a contribution to the completion of the event indicated by the verb phrase *clean her room*.[29] I argue that the notion of completion here might be created as a consequence of the specific scenes that involve the notions described above reaching their possible peaks.

As for (3.38), we saw that the use of *up* is likely to be associated with the notion of positive mentality. In the same way as in (3.37), what should be noted here is that this use of *up* also contributes to the completion of the event designated by the verb phrase *brighten my day* in the sense that the addition of *up* always makes the event true; that is, the speaker's day was brightened not only when the man smiled at the speaker, but also during the rest of the day

[29] As pointed out by Lindner (1981), *cleaning up one's room* does not necessarily include such activities as removing dirt, mopping or dusting. Hence, it can be considered that the action is completed, at least in the sense that the room is made orderly.

after having received his smile (Lindner 1981). Considering that the verb *brighten* designates the change of state from non-brightness to brightness, it may be plausible to assume that the notion of completion here is produced as a result of the final state of the event encoded by *brighten* being emphasised by the notion of positive mentality carried by *up*.

Concerning (3.39), as explained above, it is plausible to consider that a number of notions, such as (increase of number/positive mentality/positive assessment/social prominence) play a role in deriving this use. In addition, similar to the previous examples, it is possible to assume that this usage also makes a contribution to the completion of the event encoded by the verb *dress* because *dressing up* can be regarded as reaching the final point beyond which any further dressing is impossible (at least for the speaker). I assume that the notion of completion here was derived as a result of specific scenes that include the notions described above reaching their possible peaks.

As for (3.40), as argued in Chapter 4, this usage of *up* may be due to the inseparable correlation between *up* and proximity. In the same way as in the previous examples, it is likely that this use also contributes to the completion of the event indicated by the verb phrase *shut a shop* in that the shop will be completely closed (permanently or temporarily). Taking into account that the verb *shut* is associated with the 'to bring a door into the position in which it closes an aperture (resulting in a state of proximity)' meaning, it may be reasonable to consider that the notion of completion here is created as a result of the final state of the event encoded by *shut* being highlighted by the notion of proximity implied by *up*.

As for (3.41), I predict that this use of *up* is influenced by the gradual nature of the notion of completion carried by *up*. That is, as mentioned above, there is a possibility that the schematic representation depicted in Figure 6.3 causes *up* to be associated with such a notion. As pointed out by Lindner (1981), *finishing up a paper* implies a number of specific activities such as going back after all sections have been written, revising it, rewriting parts and so on, whereas *finishing a paper* means writing the last part of it. I speculate that the interpretation of several activities being conducted sequentially is produced due to the gradual nature of the notion of completion carried by *up*. It may also be possible to consider that the notion of positive assessment is related in the sense that conducting the activities described above leads to the paper being in a more favourable condition.

In (3.42), the usage of *up* may be derived from the following type of event: When something like an iceberg breaks completely, it usually breaks into many parts, resulting in an increase in the number of pieces of iceberg. I speculate that this usage is produced as a result of the parts of an entity having increased due to breakage.

As far as (3.43) is concerned, the instance of *up* may be derived from the established association between physically upward orientation and the increase in number discussed above. For example, imagine a scene in which one has to do something, such as solve a mathematical problem within ten minutes. Taking into account the strong correlation between physically upward orientation and the increase in number, it may be easy to envisage that a person who is engaging in the activity retrieves physically upward orientation as time passes. In addition, since the use of *up* as the complement of *to be* is associated closely with the final state of the entire action involving upward orientation, ten minutes can be regarded as the highest and final point beyond which the activity cannot proceed, giving rise to the interpretation of the completion of event.

As for (3.44), the use of *up* is likely to be derived from the usage in (3.43). In other words, games are one of the activities in which the notion of time, as well as the increase in number, is essential. For example, the winner of a football game is decided based on how many points are won within a certain amount of time (usually, two rounds of forty-five minutes each). To put this another way, it follows that, as more time passes, the more points are gained, and the entire game approaches its end. Due to the inextricable association between the increase in number by virtue of time and points and the completion of a game, this usage is derived. Here, the 'game' can be reinterpreted metaphorically as an illegal activity. I assume that this use of *up* is associated closely not only with the [COMPLETION OF EVENT] but also with the [ACCESSIBILITY] lexical concept because the example (3.44) implies that the illegal activity became public knowledge.

Concerning (3.45), in the same way as in the previous examples, the usage of *up* may have been created due to the established correlation between *up* and the increase in number.[30]

Essentially, I assume that a more ubiquitous physical scene, as depicted in Figure 6.3, gives rise to the notion of the completion of event that could be regarded as being sufficiently abstract to be applied to a wide variety of verbs. However, it seems difficult to assume that this is the only possible case because it seems more reasonable to consider that the compatibility of *up* with each verb in a VPC is characterised in terms of specific scenes involving various types of notions other than completion that are related directly to each VPC. This consideration might explain the mechanism of language users avoiding an inappropriate application of *up* with the verbs that cannot co-occur with *up*.

[30] Concerning this, refer to Chapter 4.

Therefore, based on the observations in this section, I suggest that the [COMPLETION OF EVENT] lexical concept is also produced as a consequence of a wide variety of specific scenes that involve various sorts of notions reaching their possible peaks.

6.3.2.9. Accessibility

By way of illustration, let us look at the derivational process(es) of each use of *up* in the following examples:

(3.46) I took *up* the offer to go out to dinner
(3.47) I picked *up* some French on my trip
(3.48) He connected *up* the phone
(3.49) I met *up* with him outside
(3.50) He gathered *up* his tools
(3.51) He put *up* his antiques ('to offer for sale')
(3.52) Is this property *up* for sale?
(3.53) The other group's success showed *up* their efforts as a waste of time
(3.54) When the police found the body in his garden, the game was *up*

It is reasonable to consider that the usages of *up* in (3.46) and (3.47) are derived from the following kind of daily experience: when one *takes* or *picks up* a physical entity in one's hand(s), it is usual that the entity *taken* or *picked up* is more proximal and hence more easily accessible to the person. I speculate that the inseparable association of physically upward orientation involved in such an action as *taking up* something, the proximity and the ease of access resulting from the action gives rise to this use, which is no longer related to physically upward orientation.

As for (3.48), the use of *up* may be associated with the following type of daily experience: when a person connects a telephone, it is usual that it becomes available for use. Here, the phone being available can be seen as it becoming accessible.

In (3.49), as we saw above, there is a possibility that the notion of proximity gives rise to the notion of accessibility. In (3.50), it is possible to think that the instance of *up* is derived due to the established association between *up* and the notion of proximity. In other words, it is likely that gathering tools so that all of them are proximal not only to each other but also to the person who performs the action means that access to them is easier than it was when they are

scattered everywhere. Hence, it can be considered that the proximal state of the tools gives rise to the notion of accessibility.

As for (3.51) and (3.52), the instance of *up* can be derived from the use in (3.55). That is, it is usual that the higher people are located in terms of social status, the more public their names or appearances tend to become. Due to the established association between higher social status and public exposure, this usage is created.

In (3.53), the usage of *up* may be created from the following types of daily experiences in which the higher the sun rises/a heap becomes/a plant grows/a person's posture becomes, the more accessible they tend to become to others.

As far as (3.54) is concerned, we saw above that this use of *up* is associated closely with the [COMPLETION OF EVENT] lexical concept. In addition, as is obvious from the sentential context, it is reasonable to assume that this use is also associated with the notion of accessibility because it can be considered that the completion of a 'game' – a metaphor for an illegal activity in this case - can be reinterpreted as the exposure of the activity.

6.3.2.10. Social Prominence

To illustrate this, let us consider the derivational process(es) of each use of *up* in the following examples:

(3.55) He is really moving *up* in the world
(3.56) Give me a ring when you're *up* in London

As for (3.55), people often experience various types of upward orientations when their social status is upgraded. For example, due to a promotion at their workplace, they may receive a higher salary than previously, resulting in experiencing a higher lifestyle. Accordingly, they may receive more compliments, or positive assessments from other people. Of course, due to having higher status in the workplace, they may need to do more work accompanied by more responsibilities. From the observations above, it is obvious that upgraded social status implies a wide variety of notions relating to upward direction, and all of these might contribute to producing this usage of *up*.

In (3.56), the usage of *up* may be derived from a number of physical or non-physical scenes involving upward orientation. That is, people can experience a wide variety of upward orientations in socially important places such as London. For example, many more people gather in such places for diverse reasons such as job hunting or seeking stimuli, resulting in

many more opportunities to meet other people. In addition, greater varieties and quantities of merchandise are available in such places because a vast number of people buy goods there. Moreover, a greater variety of forms of cultural entertainment such as museums or musical events is available in such places because of the enormous number of people who enjoy these things. From the observations above, it is clear that socially important places such as London correlate with various types of notions relating to physically upward orientation, and it is likely that all of these play an important role in creating this usage of *up*.

6.3.2.11. Visual Prominence

By way of illustration, let us consider the derivational process(es) of each use of *up* in the following examples:

(3.57) My long-lost book just turned *up*!
(3.58) The sun was already *up* when they set off
(3.59) He was dressed *up* as Santa Claus

As mentioned above, the usage of *up* in (3.57) can be derived from the following kind of daily experience in which the face of a card that has not be seen thus far can be seen as a result of turning the card over (this action includes an upward orientation).

In (3.58), it is plausible to consider that this use of *up* is derived from the daily experience in which the sun becomes prominent visually as a result of its moving from below the horizon in an upward direction. As far as (3.59) is concerned, the instance of *up* is likely to be created from the usage in (3.16) explained above. That is, it is reasonable to assume that dressing in formal clothes enables a person to become prominent visually because a beautifully dressed person often tends to receive much more attention from other people.[31] Based on this kind of daily experience, this usage is derived.

6.3.2.12. Auditory Prominence

It is also possible to assume that this lexical concept was derived through the derivational processes of a number of uses. To illustrate this, let us look at the derivational process(es) of each usage of *up* in the following examples:

[31] In this example, the unusual clothes (a Santa Claus costume) makes the person much more visually prominent.

(3.60) Turn the volume *up*

(3.61) We can't hear you. Speak *up*!

(3.62) They struck *up* the 'Star-Spangled Banner'

I speculate that the usages of *up* in (3.60) and (3.61) are derived from the close link between *up* and a greater degree. It is also possible that this usage is derived from the following kind of experiential correlation: When a person picks up a cat, the sound the animal makes is easier to hear.

As for (3.62), the use of *up* is likely to be produced due to the established association between *up* and the notion of auditory prominence.

6.3.2.13. Active

I also argue that this lexical concept is created via the derivational processes of various types of usage. To clarify this point, let us look at the derivational process(es) of each use of *up* in the following examples:

(3.63) The computer is *up*

(3.64) I had to be *up* for the game

(3.65) Tea *up*!

(3.66) There are two on (base) and Babe Ruth is *up*

(3.77) Teachers are *up* in arms about new school tests

It can be considered that the use of *up* in (3.63) is derived from the following type of daily experience: when a computer is *up* (that is, in an active state), various kinds of physical experiences become possible. For example, the screen begins to work, and is able to display a large number of letters or images (visual prominence). In addition, a wide variety of sounds can be heard (auditory prominence). Of these actions, the most important is the interaction with the computer (active). When a computer is working properly, it can respond to anything a user demands, resulting in a state in which the communication between the computer and the user can be made smoothly and continuously. From the observations above, I speculate that the established associations between *up* and the notions of visual/auditory prominence influence the creation of this use of *up*.

In (3.64), the usage of *up* can be created by the following kind of physical scene: When a person rises from a sitting, stooping or lying position, it is usual that s/he starts preparing for some action such as cooking lunch or going to work (that is, transitioning into an active state).

It is reasonable to assume that this type of experiential correlation affectes the creation of this usage.

As for (3.65), the instance of *up* may be produced from the following type of daily experience: when food (particularly hot foods such as stews or curries) is cooked, it is usual that, as the process of cooking approaches its end, more steam is given off and the temperature of the pan containing the food and of the food itself rises. The inseparable correlation between the state of steam being given off continuously/the rise of the temperature of the pan containing the food and the food itself (physically upward orientation) and being able to eat the food may play a role in deriving this usage of *up*.

In (3.66), it is likely that the usage of *up* is created from the physical scene in which a person who is in a standing posture on the offence side is about to bat; that is, to transition to an active state. As for (3.67), the use of *up* is likely to be produced from the following kind of physical scene: When a person rises from a sitting or stooping posture, it is usual that s/he starts to engage in some activity. In particular, when the person is armed, it is likely that s/he will start fighting or protesting against something or someone. I suggest that this kind of experiential correlation influences the creation of this use.

6.4. Discussion

Based on the observations above, I propose that the following kind of semantic network resides in the mind of a language user:

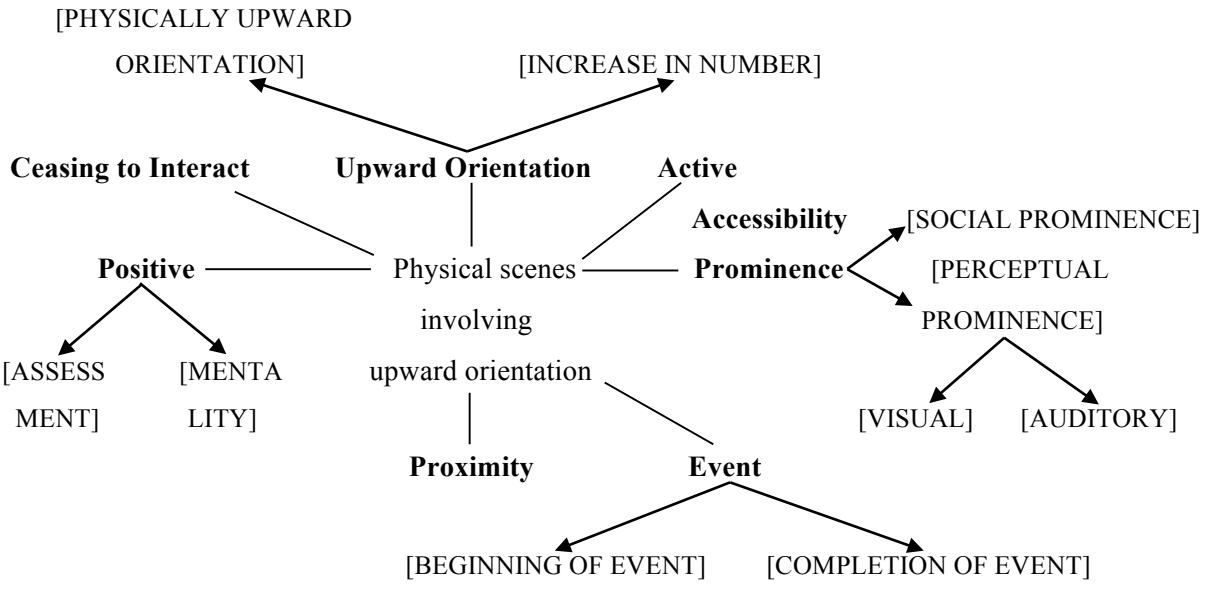

Figure 6.4. The semantic network of *up*

Essentially, I assume that all the usages associated with VPCs including *up* are derived from the relevant physical scenes involving upward orientation or are incorporated into the existing semantic network via the same types of physical scenes. Furthermore, I assume that all the lexical concepts associated with *up* are abstracted away from these various types of usages. To clarify this point, let us consider the following diagram:

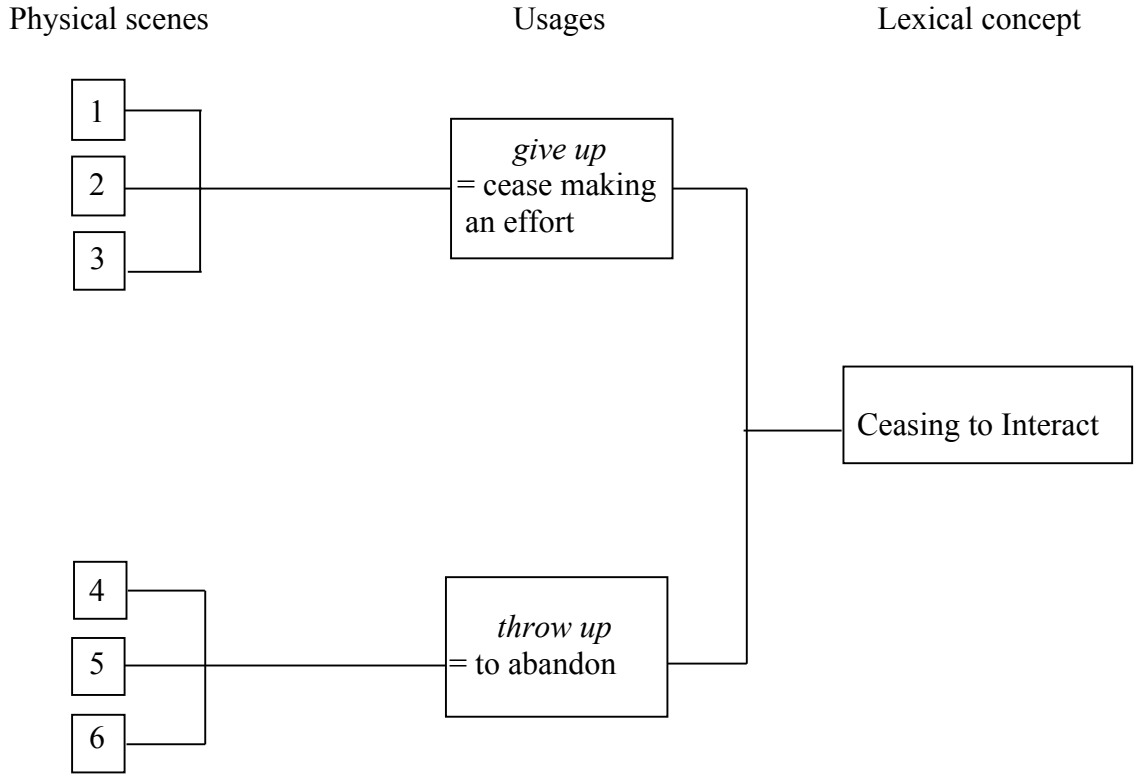

Figure 6.5. The relationships of physical scenes, usages, and lexical concepts[32] [33]

Figure 6.5 is a schematic representation of the relationships among a number of physical scenes involving upward orientation, some usages associated with VPCs involving *up*, and the [CEASING TO INTERACT] lexical concept. Although I suggested above that a number of ubiquitous physical scenes are more likely to produce the usages associated with VPCs including *up* which may in turn give rise to the lexical concepts related to *up*, I speculate that

[32] As for the numbering of physical scenes, it appears that each usage is derived from different types of physical scenes. However, as we saw in the previous section, it is likely that, in some cases, the physical scenes relating to one usage can overlap with those relating to another.

[33] As for the relationship between specific usages and the relevant physical scenes, the direction in which each usage is related to the physical scene is not unidirectional. In other words, it might be considered that some usages, particularly idiomatic ones, are learned via linguistic resources and incorporated into the existing semantic network in relation to the other usages and the relevant physical scenes; other usages, the more compositional ones for example, are derived from the relevant physical scenes directly or indirectly.

the relationships are in fact quite flexible in nature. To put this another way, there is a possibility that each usage or lexical concept is derived via various types of derivational processes. In the following, I summarise the possible derivational processes of each usage or lexical concept:

1) The usage of a given VPC including *up* may be derived from one physical scene involving upward orientation.
   Ex.) the '(of a vehicle) come to a halt' usage of *pull up* may be derived from the physical scene relating to stopping a horse.
2) The usage of a given VPC including *up* may be derived from two or more physical scenes involving upward orientation. In this case, there is a possibility that a lexical concept is also abstracted away from the physical scenes at the same time.
   Ex.) the 'to abandon' usage of *throw up* may be derived from the physical scenes relating to throwing up what has one swallowed/throwing an unnecessary entity upwards. At the same time, the [CEASING TO INTERACT] lexical concept may be created due to the close association between physically upward orientation and ceasing to interact with an entity.
3) The usage of a given VPC including *up* may be derived from other usage associated with the same VPC.
   Ex.) the 'to become happier' usage of *brighten up* can be derived from the 'to become brighter or more intense in colour' usage of the same VPC.
4) The usage of a given VPC including *up* may be derived from the usage shared by other VPCs.
   Ex.) the 'to close a house or place of work, fastening all the doors and windows' usage of *lock up* may be derived from the combination of the 'to close completely' usage of *shut up* and *close up*.
5) The lexical concept of *up* may be abstracted away from two or more usages associated with VPCs including *up*.
   Ex.) The [CEASING TO INTERACT] lexical concept may be abstracted away from the combination of the 'to cease making an effort' usage of *give up* and the 'to abandon' usage of *throw up*.
6) The lexical concept of *up* may be abstracted away from the combination of other lexical concepts of *up* with one or more physical scenes relevant to it (them).

Ex.) In the case of *dress up*, the [COMPLETION OF EVENT] lexical concept may be abstracted away from the combination of the [POSITIVE ASSESSMENT] and [VISUAL PROMINENCE] lexical concepts with the physical scenes relevant to them.

Moreover, I predict that, when a usage that is fully established is activated, parts of the physical scenes, usages and one (or more) lexical concept relevant to it may be activated consciously or unconsciously.

6.5. Summary

This chapter has presented the semantic network of *up* in the mind of a contemporary language user. In particular, I identified distinct lexical concepts associated with *up* based on the methodology described in Chapter 3 and, building on the detailed observations of the historical development of *up* in the previous chapters, I provided a detailed explanation of the presumed derivational processes of each lexical concept. Based on my observations, there are thirteen distinct lexical concepts for *up*, which are substantiated by the distinct lexical profiles associated with them. In addition, I discussed 1) how each usage is derived and 2) how each lexical concept has been created. With regard to 1), I argued that each usage is essentially derived from the relevant physical scene(s) involving upward orientation, although, as mentioned above, a number of derivational/incorporative processes can be considered. As for 2), I claimed that each lexical concept is essentially abstracted away from two or more usages associated with VPCs involving *up*, although, in the same way as 1), other derivational processes can also be considered.

Having investigated the types of lexical concepts associated with *up* and the derivational/incorporative processes in this chapter, I will move on to examining the motivations for the distinct lexical concepts associated with the same VPC by focusing on *pick up* in Chapter 7.

Chapter 7 The lexico-semantic networks of verb-particle constructions (VPCs): The case of *pick up*

This chapter is concerned with accounting for the motivation for the distinct lexical concepts associated with a verb-particle construction (VPC) focusing on *pick up*. The reason that I choose *pick up* is that the VPC is assumed to be associated with a wider variety of distinct lexical concepts, which enables us to show various possibilities to account for the derivational processes. I claim that the examination of *pick up* is applicable to the other VPCs because it is reasonable to consider that the same kinds of mechanisms work for all VPCs. By way of illustration, let us consider the following examples:

(1) The dog *picked up* the bone in its mouth
(2) Sales *picked up* last fall
(3) I *picked up* French quickly
(4) Did the microphone *pick up* that sound?
(5) She just *picked up* and left

All the examples from (1) to (5) include the same VPC *pick up*. However, it appears that each usage indicates a distinct sense. To put this another way, it can be considered that the use of *pick up* is associated with the 'to take hold of and lift up (something) with a hand or other body part' meaning in (1), the 'to improve in condition or activity' meaning in (2), the 'to acquire (knowledge) by learning or experience' meaning in (3), the 'to detect (an auditory stimulus)' meaning in (4) and the 'to prepare a sudden departure' meaning in (5).

These examples illustrate that VPCs such as *pick up* appear to be associated with a number of distinct lexical concepts to exhibit polysemy. Over the last four decades, the semantics of VPCs have received much attention from a large number of scholars (e.g., Bolinger 1971; Lindner 1981, 1982; Boers 1996; Morgan 1997; Hampe 2000; Rudzka-Ostyn 2003; Tyler & Evans 2003). While each researcher has attempted to offer a better characterisation of the semantics of VPCs and some valuable discoveries have been made, there has been no agreement regarding how each distinct lexical concept associated with an identical VPC is originally formed in the mind of a contemporary language user.

Therefore, the aim of this chapter is to provide a better model of the mechanism whereby each distinct lexical concept associated with a given VPC is originally produced in the mind by focusing on *pick up*. Based on the architecture of The Theory of Lexical Concepts and

Cognitive Models (LCCM Theory) and work on child language acquisition, I assume that the literal lexical concept associated with a given VPC is originally created as a result of the interaction of the literal lexical concepts associated with its components, a verb and a spatial particle, with the relevant cognitive models. Once the VPC is associated with the literal lexical concept, it is able to become associated with other, non-literal lexical concepts. In this chapter, I demonstrate how each lexical concept associated with *pick up* is derived in the mind of a language user for the first time.

In order to predict the derivational processes in a more precise way, we need to know what kinds of distinct lexical concepts with which the overall VPC *pick up* and its components, *pick* and *up*, respectively, are associated. Since the lexical concepts associated with the spatial particle *up* were identified in Chapter 6, in this chapter, I identify the distinct lexical concepts associated with the verb *pick* and the VPC *pick up* by employing the same methodology that was utilised for the identification of the distinct lexical concepts for *up* in Chapter 6, and then attempt to elucidate the mechanism whereby each distinct lexical concept for *pick up* is originally formed.

This chapter consists of five sections: Section 1 addresses the semantic network of *pick*. Section 2 discusses the semantic network of *pick up*. Section 3 examines how each distinct lexical concept associated with *pick up* is originally formed in the mind, and Section 4 provides a brief summary.

7.1. The semantic network of *pick*

If the hypothesis above is in the right direction, it is necessary to identify the types of lexical concepts with which the verb *pick* is associated in the first place. Hence, in this section, employing the methodology explained in Chapter 3, I identify the distinct lexical concepts associated with *pick* (Section 7.1.1) and provide a more detailed explanation of each lexical concept (Section 7.1.2).

7.1.1. Identification of distinct lexical concepts for *pick*

I claim that the verb *pick* is associated with at least nine distinct lexical concepts. By way of illustration, let us consider the following examples:

(1.1) She *picked* a match out of the box [TAKING HOLD OF AND MOVING]

(1.2) The best swimmer was *picked* [SELECTING]

(1.3) He *picked* his teeth with a matchstick [REMOVAL]

(1.4) They were *picking* apples [HARVESTING]

(1.5) My pocket was *picked* [STEALING]

(1.6) He *picked* a fight [PROVOKING]

(1.7) People were singing and *picking* guitars
[PLAYING AN INSTRUMENT BY PLUCKING ITS STRINGS]

(1.8) The man *picked* the lock easily [OPENING A LOCK WITHOUT A KEY]

(1.9) I *picked* meat from the bones [TEARING OFF BIT BY BIT]

In the first example in (1.1), *pick* appears to relate to the movement of a physical entity such as *a match* by an animate entity such as *a human*. Thus, the lexical concept involved here might be glossed as [TAKING HOLD OF AND MOVING]. In (1.2), the lexical concept that sanctions this use of *pick* appears to relate to the selection of an entity such as *a swimmer*. Thus, the lexical concept involved here might be glossed as [SELECTING]. In (1.3), the lexical concept sanctioning *pick* might be glossed as [REMOVAL]. This follows because *pick* relates to the removal of some food from between one's teeth. In (1.4), the lexical concept that sanctions this use of *pick* appears to relate to the harvesting of farm products such as *apples*. Thus, the lexical concept involved here might be glossed as [HARVESTING]. In (1.5), the lexical concept that sanctions this use of *pick* appears to relate to the stealing of an entity such as *a wallet* from a pocket. Thus, the lexical concept involved here might be glossed as [STEALING]. In (1.6), the lexical concept sanctioning *pick* might be glossed as [PROVOKING]. This follows because *pick* relates to the provoking of an unfavourable event that occurs between two people such as *a fight*. In (1.7), the lexical concept that sanctions this instance of *pick* appears to relate to the playing of instruments with strings such as *guitars*. Thus, the lexical concept involved here might be glossed as [PLAYING AN INSTRUMENT BY PLUCKING ITS STRINGS]. In (1.8), the lexical concept sanctioning *pick* might be glossed as [OPENING A LOCK WITHOUT A KEY]. This follows because *pick* relates to the opening of a lock without a key. In (1.9), the lexical concept that sanctions this use of *pick* appears to relate to tearing a piece off an entity such as *meat*. Thus, the lexical concept involved here might be glossed as [TEARING OFF BIT BY BIT].

Now, in order to confirm whether the uses of *pick* in the above examples are sanctioned by distinct lexical concepts, let us apply the formal selectional criterion. From my observations, it seems that all the usages of *pick* from (1.1) to (1.9) inclusive require a direct object. Moreover, as can be seen in the above examples, it appears that the actions designated by some instances are momentary, as in (1.1), (1.2), (1.5) and (1.8), while the others can be repetitive, as in (1.3),

(1.4), (1.7) and (1.9); as a result, the latter instances are compatible with present progressives, while the former are not. In addition, some uses are accompanied by prepositional phrases in order to clarify the action designated by each verb, as in (1.3) and (1.9).

From the above observations, it is obvious that the formal selectional criterion is inadequate to distinguish one lexical concept from the others in that the formal selectional tendencies associated with several usages overlap.

Let us turn now to the semantic selectional tendencies associated with these uses of *pick*. I do so by applying the semantic selectional criterion. The [TAKING HOLD OF AND MOVING] lexical concept always co-occurs with physical entities. More specifically, an animate entity such as *a human* always fill the subject position. As for the [SELECTING] lexical concept, one entity among other alternatives such as *the best swimmer* always fills the object position of *pick*. The [REMOVAL] lexical concept can co-occur with the lexical item relating to teeth, and the pointed tool used to remove unnecessary substances from between one's teeth such as *a matchstick*. As for the [HARVESTING] lexical concept, the object position of *pick* is always occupied by lexical items relating to farm products such as *apples*. The [STEALING] lexical concept always co-occurs with the lexical item relating to the location from which an entity such as *a wallet* can be stolen, such as *a pocket*. The [PROVOKING] lexical concept can co-occur with the lexical item relating to the activities that occur when two people are incompatible in their opinions, such as *a fight*. As for the [PLAYING AN INSTRUMENT BY PLUCKING ITS STRINGS] lexical concept, the object position is always filled by the lexical item relating to musical instruments with strings such as *guitars*. The [OPENING A LOCK WITHOUT A KEY] lexical concept always co-occurs with the lexical item relating to the closed state of an entrance such as *a lock*. The [TEARING BIT BY BIT] lexical concept can co-occur with the lexical items relating to a substance that can be torn a small quantity at a time such as *meat* and the source from which the substance is torn, such as *a bone*.

From the above applications, it is obvious that each of the instances of *pick* from (1.1) to (1.9) inclusive, based on the semantic and formal selectional criteria, behaves as if sanctioned by distinct lexical concepts with distinct lexical profiles. Table 7.1 summarises the semantic and formal selectional tendencies that constitute the lexical profiles for the lexical concepts considered:

Table 7.1. Lexical profiles associated with the lexical concepts that sanction the uses of *pick* considered

Gloss	Brief description of conceptual content	Nature of semantic selectional tendencies	Nature of formal selectional tendencies
[TAKING HOLD OF AND MOVING]	Movement of a physical entity by an animate entity	Animate agents Physical entities	Transitive use
[SELECTING]	Selecting one entity among other alternatives	One entity among other alternatives, e.g., *the best swimmer*	Transitive use
[REMOVAL]	Removal of unnecessary substance from between two adjacent entities	Two adjacent entities, e.g., *teeth* Pointed tools, e.g., *a matchstick*	Transitive use Prepositional phrase
[HARVESTING]	Harvesting farm products	Farm products, e.g., *apples*	Transitive use
[STEALING]	Robbing a person of a wallet	Places from which a wallet can be stolen, e.g., *a pocket*	Transitive use
[PROVOKING]	Causing some activity to occur	Activity occurring when two people are incompatible in their opinions, e.g., *fight*	Transitive use
[PLAYING AN INSTRUMENT]	Letting out sounds using an instrument	Musical instruments with strings, e.g., *guitar*	Transitive use Progressive
[OPENING A LOCK WITH-OUT A KEY]	Causing an entrance to open using a pointed entity other than a key	Closed state of an entrance, e.g., *a lock*	
[TEARING OFF BIT BY BIT]	Tearing a small amount of a substance repeatedly	Substance than can be torn bit by bit, e.g., *meat*	Transitive use Prepositional phrase

7.1.2. Derivational processes for distinct lexical concepts of *pick*

It can be considered that all the lexical concepts from (1.1)-(1.9) are likely to be created due to the established association between two types of daily experiences. As for (1.2), taking hold of and moving a physical entity sometimes leads to selecting one among other alternatives. For example, imagine a scene in which a person takes hold of and moves a lemon sweet from a jar that contains many sweets with different flavours (because the person really likes lemons). It is possible to consider that the inextricable correlation between taking hold of and moving one sweet and selecting it from a group of alternatives gives rise to this lexical concept. In (1.3), taking hold of and moving a physical entity can also be interpreted as removing it. As indicated in (1.3), taking hold of and moving some food lodged between two teeth is always regarded as the removal of the food to make the teeth more hygienic. It is likely that the established association between taking hold of and moving food from one's teeth and the removal of the food produces this lexical concept. In another scene, taking hold of and moving a physical entity, particularly farm products such as *apples*, can be captured in terms of harvesting, creating the lexical concept exemplified in (1.4). Furthermore, taking hold of and moving a physical entity, such as someone else's wallet, can be seen as stealing it, producing the lexical concept illustrated in (1.5). As for (1.6), it may be reasonable to assume that taking hold of and moving a physical entity can signify the beginning of an event. As is obvious from the above examples, the action always functions as the starting point for some activity to begin. In (1.7), taking hold of and moving a physical entity, such as a string on a musical instrument, can be construed by virtue of playing the instrument. As for (1.8), there is a possibility that the physical scene using a pointed object illustrated in (1.3) is reflected in the movement of a key-like object, giving rise to this use. As far as (1.9) is concerned, it is plausible to consider that taking hold of and moving a physical entity, such as a piece of meat, can be interpreted as the action of tearing of bit by bit. Based on the observations above, I propose that the following type of semantic network is stored in the mind of a contemporary language user:

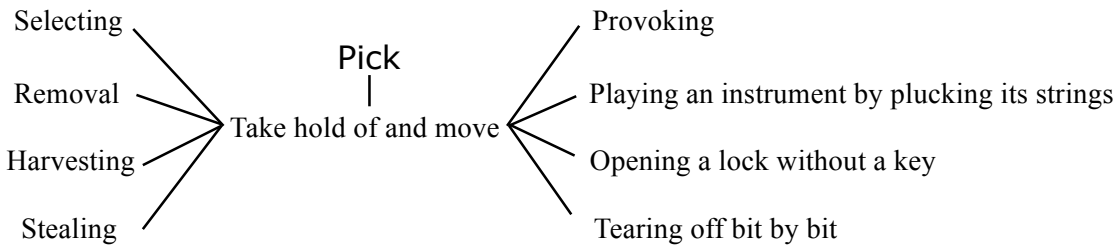

Figure 7.1. The semantic network of *pick*

What is worth mentioning here is that the action encoded by *pick* is often conducted in an upward orientation despite its multidirectional nature. For example, when a person *picks* a flower, someone's pocket or a piece of chicken, each action is usually made in an upward orientation. I speculate that the direction in which the action indicated by *pick* is made has a crucial impact on the compatibility of *pick* with *up*.

7.2. The semantic network of *pick up*

In the same way as for the verb *pick*, I will attempt to identify the kinds of lexical concepts with which the overall VPC *pick up* is associated in this section. Although it can be considered that the lexical concepts associated with *pick up* are essentially derived or incorporated into the existing semantic network in the same way as *pick*, it is reasonable to assume that the ways in which they are derived or incorporated are much more complicated than are those of *pick* because these lexical concepts are assumed to be affected by the lexical concepts associated not only with the verb *pick*, but also with the spatial particle *up*, the semantic network of which, as shown in the previous chapters, is complicated on its own. In this section, I will first identify the distinct lexical concepts associated with *pick up* by employing the same methodology as used for *pick* (Section 7.2.1) and will then provide a more detailed explanation of each lexical concept (Section 7.2.2).

7.2.1. Identification of distinct lexical concepts for *pick up*

I claim that the VPC *pick up* is associated with at least eleven distinct lexical concepts. By way of illustration, let us consider the following examples:

(2.1) The dog *picked up* the bone in its mouth [TAKING HOLD OF AND LIFTING UP]
(2.2) Sales *picked up* last fall [IMPROVEMENT]
(2.3) The wind began to *pick up* [INCREASE IN EXTENT]
(2.4) I *picked up* the bedroom [ARRANGEMENT OF THINGS IN ORDER]
(2.5) She just *picked up* and left [GETTING READY TO GO]
(2.6) Let's *pick up* the discussion tomorrow [RESUME AFTER A BREAK]
(2.7) Don't be reluctant to *pick up* on a bad hole [GIVING UP PLAYING (IN GOLF)]
(2.8) I *picked up* French quickly [ACQUISITION]
(2.9) I've *picked up* a cold [CONTRACTING AN ILLNESS]
(2.10) I *picked up* the harbour lights [DETECTION OF VISUAL STIMULUS]
(2.11) Did the microphone *pick up* that sound?

[DETECTION OF AUDITORY STIMULUS]

In the first example in (2.1), *pick up* appears to relate to the upward movement of physical entities such as *bones* by an animate entity such as *dogs*. Thus, the lexical concept that sanctions this instance of *pick up* might be glossed as [TAKING HOLD OF AND LIFTING UP]. In (2.2), the lexical concept sanctioning *pick up* might be glossed as [IMPROVEMENT]. This follows because *pick up* relates to the favourable change to an entity such as *sales*. In (2.3), the lexical concept that sanctions this use of *pick up* appears to relate to the increase in the extent of an entity such as *wind*. Thus, the lexical concept involved here might be glossed as [INCREASE IN EXTENT]. In (2.4), the lexical concept that sanctions this use of *pick up* appears to relate to the tidying of a place such as *a bedroom*. Thus, the lexical concept involved here might be glossed as [ARRANGEMENT OF THINGS IN ORDER]. In (2.5), the lexical concept sanctioning *pick up* might be glossed as [GETTING READY TO GO]. This follows because *pick up* relates to preparation for going out. In (2.6), the lexical concept that sanctions this instance of *pick up* appears to relate to the restarting of an activity such as *discussion*. Thus, the lexical concept involved here might be glossed as [RESUME AFTER A BREAK]. In (2.7), the lexical concept sanctioning *pick up* might be glossed as [GIVING UP PLAYING (IN GOLF)]. This follows because *pick up* relates to ceasing to play golf. In (2.8), the lexical concept that sanctions this use of *pick up* appears to relate to the acquisition of an entity such as *French*. Thus, the lexical concept involved here might be glossed as [ACQUISITION]. In (2.9), the lexical concept sanctioning *pick up* might be glossed as [CONTRACTING AN ILLNESS]. This follows because *up* relates to contracting an illness such as *a cold*. In (2.10), the lexical concept that sanctions this instance of *pick up* appears to relate to the detection of a visual stimulus such as *harbour lights*. Thus, the lexical concept involved here might be glossed as [DETECTION OF VISUAL STIMULUS]. In (2.11), the lexical concept sanctioning *pick up* might be glossed as [DETECTION OF AUDITORY STIMULUS]. This follows because *pick up* relates to the detection of an auditory stimulus such as *a sound*.

In order to confirm whether the uses of *pick up* in the above examples are sanctioned by distinct lexical concepts, I begin by applying the formal selectional criterion. As can be seen in the above examples, some instances almost always require a direct object, as in (2.1), (2.4), (2.6) and (2.8)-(2.11), while the others do not, as in (2.2), (2.3), (2.5) and (2.7). Since it is clear that formal selectional tendencies are insufficient to distinguish one usage from another, let us turn to the semantic selectional tendencies associated with these uses of *pick up*. I do so by applying the semantic selectional criterion.

As for the [TAKING HOLD OF AND LIFTING UP] lexical concept, physical entities always fill the object positions of *pick up*. The subject positions are always occupied by animate entities. In (2.2), the subject position is always filled by the lexical items relating to business such as *sales* or *economy*. In (2.3), the [INCREASE IN EXTENT] lexical concept always co-occurs with the lexical items relating to *wind*. In (2.4), the [ARRANGEMENT OF THINGS IN ORDER] lexical concept can co-occur with lexical items relating to places in which there are many physical entities to be picked up such as *a bedroom*. In (2.5), the [GETTING READY TO GO] lexical concept is always accompanied by the lexical item *leave*. In (2.6), the object position is filled by lexical items relating to the activities that can extend for a certain period and then need a break such as *discussion*. In (2.7), the [GIVING UP PLAYING (IN GOLF)] lexical concept always appears in the contexts relating to golf, as indicated by *on a bad hole*. In (2.8), the [ACQUISITION] lexical concept is restricted to physical or abstract entities that can be acquired, such as *French*. In (2.9), the [CONTRACTING AN ILLNESS] lexical concept co-occurs with the lexical items relating to an illness such as a *cold*. In (2.10), the [DETECTION OF VISUAL STIMULUS] lexical concept selects lexical items relating to a visual stimulus such as *harbour lights*. Finally, in (2.11), the [DETECTION OF AUDITORY STIMULUS] lexical concept is restricted to lexical items relating to an auditory stimulus such as *a sound*.

From the above applications, it is obvious that each of the instances of *pick up* from (2.1) to (2.11) inclusive, based on the semantic and formal selectional criteria, behaves as if sanctioned by distinct lexical concepts with distinct lexical profiles. Table 7.2 summarises the semantic and formal selectional tendencies which comprise the lexical profiles for the lexical concepts considered:

Table 7.2. Lexical profiles associated with lexical concepts that sanction the uses of *pick up* considered

Gloss	Brief description of conceptual content	Nature of semantic selectional tendencies	Nature of formal selectional tendencies
[TAKING HOLD OF AND LIFTING UP]	Upward movement of a physical entity by an animate entity	Animate agents, e.g., *a dog* Physical entities, e.g., *a bone*	Transitive use
[IMPROVEMENT]	Favourable change	Abstract entities relating to business,	Intransitive use

		e.g., *sales*, *economy*	
[INCREASE OF EXTENT]	Increase in extent implied by an entity	Entities that imply a gradual change of extent, e.g., *wind*	Intransitive use
[ARRANGEMENT OF THINGS IN ORDER]	Tidying a place	Places where there are many physical entities, e.g., *bedroom*	Transitive use Intransitive use
[GETTING READY TO GO]	Completion of preparation for going out	Verbs of going out, e.g., *leave*	Intransitive use
[RESUME AFTER A BREAK]	Restarting some activity after a break	Activities that can extend for a certain period and then require a break, e.g., *discussion*	Transitive use
[GIVING UP PLAYING (IN GOLF)]	Quitting playing golf	Contexts relating to golf, e.g., *on a bad hole*	Intransitive use
[ACQUISITION]	Acquisition of a physical/abstract entity	Physical/abstract entities that can be acquired by human agents, e.g., *furniture*, *language*	Transitive use
[CONTRACTING AN ILLNESS]	Change of a bodily condition into sickness	Illness, e.g., *cold*, *flu*	Transitive use
[DETECTION OF VISUAL STIMULUS]	Receiving some information from an optic organ	Visual stimuli, e.g., *harbour lights*	Transitive use
[DETECTION OF AUDITORY STIMULUS]	Receiving some information from an auditory organ	Auditory stimuli, e.g., *a sound*	Transitive use

7.2.2. Derivational processes of distinct lexical concepts for *pick up*

I assume that the lexical concepts associated with *pick up* are created in two ways. The first might be attributed to the commonality between *pick* and *up*. As we saw above, the direction in which the action designated by *pick* is conducted is often upward despite its multidirectional nature. Hence, it may be plausible to consider that a kind of resonance occurs between the upward orientation implied by *pick* and *up* to give rise to the lexical concepts that inherit the ones associated with *up* in a strong way.[1] The lexical concepts that are assumed to be produced in this way are illustrated in (2.2) and (2.3). Concerning this type of lexical concept, I will provide a more detailed explanation later.

The second way is closely related to the notion of experiential correlation. In other words, it might be considered that some lexical concepts are produced due to the relevant, ubiquitous correlations between two types of experiences. The lexical concepts that are assumed to be created in this way are exemplified in (2.4)-(2.11). In (2.4), the lexical concept is likely to be derived due to the inseparable correlation between picking up physical objects in a room and the room becoming tidy. In (2.5), the lexical concept may be derived due to the following physical scene: Before a person goes somewhere (such as a workplace, a travel destination or anywhere else), it is usual for the person to pick up the necessary belongings before going there. It is plausible to assume that the inseparable association between going somewhere and picking up one's belongings (preparing for going there) gives rise to this lexical concept. In (2.6), it may be possible to consider that the following kind of physical scene affects the creation of this lexical concept: imagine a scene in which a child is playing with a toy. When the child wants to rest, it is usual that the toy is put on the floor. After a certain amount of time, when the child wants to play with the toy again, it is also usual that s/he picks up the toy from the floor. There is a possibility that the inseparable correlation between restarting some activity and picking up an entity necessary for the activity produces this lexical concept. In (2.7), this lexical concept is likely to be derived due to the inextricable correlation between picking up a ball and giving up playing in the context of golf. As for (2.8)-(2.11), it is likely that these lexical concepts are derived from the following experiential correlations: when one takes hold of and lifts up a physical entity in one's hand(s), it is usual that the entity is more proximal and hence

[1] In the field of psychology, it has been suggested (e.g., Kashima 2000) that a type of resonance is likely to occur between parts of the information that already exist in the mind and that which enter from outsides because of their commonalities, resulting in the foregrounding of the common parts and the backgrounding of the other information. Based on this fact, I hypothesise that the meaning of physical motion carried by *pick* is backgrounded to become more abstract.

more easily accessible to that person. Furthermore, it is also usual that such easily accessible entities can be possessed by the person. This series of implicatures may give rise to the [ACQUISITION] and [CONTRACTING AN ILLNESS] lexical concepts.[2] On the other hand, it is also reasonable to consider that such proximal entities can be prominent visually and aurally. For example, when the entity is a cat, the more proximal the cat is to a person, the more clearly the person can see its appearance and hear the sound it makes. It can be considered that this kind of implicature produces the [DETECTION OF VISUAL STIMULUS] and [DETECTION OF AUDITORY STIMULUS] lexical concepts.

What should be noted here is the fact that not every lexical concept is necessarily derived in this way. In other words, as suggested by work on language acquisition (e.g., Rice 2003), there seems to be a tendency for more peripheral meanings to be acquired earlier than prototypical ones. Considering this fact, I assume that, when a given lexical concept is acquired and incorporated into the existing semantic network, the incorporation occurs in the opposite way from when it was derived. That is, there is a possibility that both the derivation and the incorporation of a lexical concept are made utilising the same types of daily experiences. Accordingly, the resulting semantic network can be the same regardless of whether each lexical concept was derived or acquired. Based on the observations above, I propose that the following type of semantic network is stored in the mind of a contemporary language user:

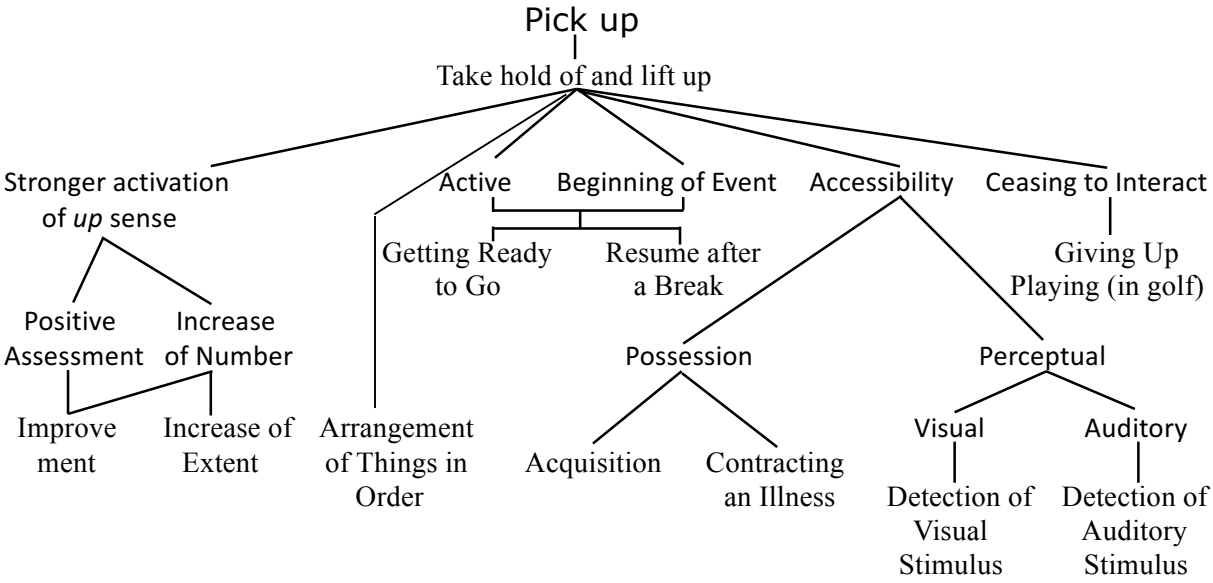

Figure 7.2. The semantic network of *pick up*

[2] The possible reason that the [CONTRACTING AN ILLNESS] lexical concept needs to be independent of the [ACQUISITION] lexical concept despite the fact that the former can be regarded as a specific example of the latter might be that the notion of accidental acquisition implied by *pick up* is compatible with contracting an illness such as flu, resulting in the strong correlation between *pick up* and contracting an illness.

Among the distinct lexical concepts associated with *pick up*, I argue that the [TAKING HOLD OF AND LIFTING UP] lexical concept is the primary one from which all the other lexical concepts can be derived directly or indirectly, or through which all the other lexical concepts can be incorporated into the existent semantic network.

7.3. The motivation for the distinct lexical concepts associated with *pick up*

Having clarified the types of lexical concepts with which the verb *pick* and the overall VPC *pick up* as well as the spatial particle *up* are associated, this section addresses the mechanism whereby each distinct use associated with *pick up* is originally formed in the mind.

7.3.1. The dog *picked up* the bone in its mouth

As for (2.1), it might be considered that, on hearing the utterance, the lexical concepts associated with *pick* and *up* are selected and activated to create the lexical concept for *pick up*, as depicted in Figure 7.3[3]:

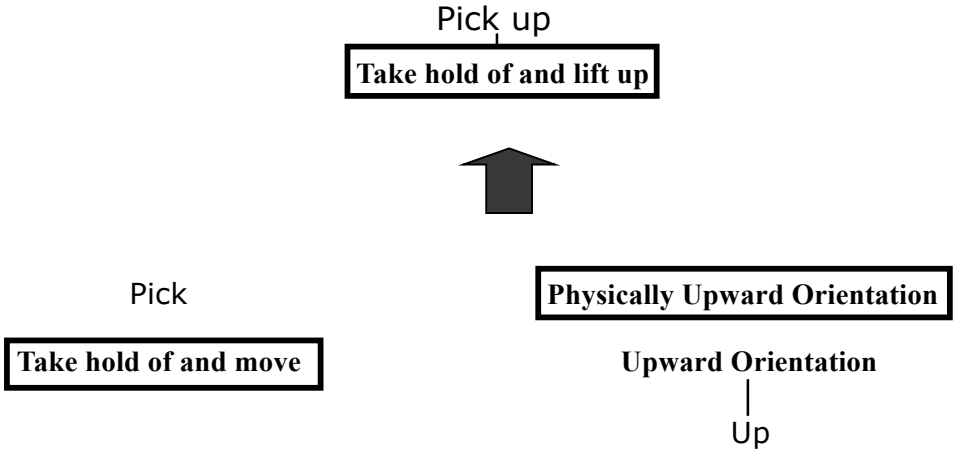

Figure 7.3. The formation process of the lexical concept associated with *pick up* in the utterance: *The dog picked up the bone in its mouth*

Specifically, the [TAKING HOLD OF AND MOVING] lexical concept for *pick* and the [PHYSICALLY UPWARD ORIENTATION] lexical concept for *up* are assumed to be activated to create the [TAKING HOLD OF AND LIFTING UP] lexical concept.[4] The reason why these two

[3] Of course, it is obvious that the lexical concepts associated with lexical items other than VPCs are also selected and activated at almost the same time when processing the sentence in (2.1). However, in the interests of simplified illustration, I focus only on VPCs.

[4] When a language user is unfamiliar with a verb in a VPC, there is a possibility that, after the lexical concept for the VPC has been created due to the combination of the lexical concept for *up* and its sentential context, the lexical concept for the verb is produced.

lexical concepts are selected is that, when a language user processes this utterance, s/he knows only these two concepts.[5] The way in which the lexical concepts for *pick* and *up* merge to create the lexical concept for *pick up* is as follows: Since the direction in which the action designated by *pick* is made is multidirectional, the [PHYSICALLY UPWARD ORIENTATION] lexical concept for *up* plays a role in highlighting the upward direction, giving rise to the [TAKING HOLD OF AND LIFTING UP] lexical concept for *pick up*.

Once the activation of the lexical concepts associated with *pick* and *up* has occurred, or almost at the same time as the activation, access to the relevant cognitive models begins. Based on Talmy (2000), I assume that the cognitive models for spatial particles cannot exist independently.[6] To put this another way, the cognitive models for *up* are likely to be incorporated into those associated with the VPCs in which they occur. Hence, for the formation of the cognitive models for *pick up*, only the cognitive models associated with *pick* should be taken into account. The formation process for the cognitive models of *pick up* in (2.1) is captured in Figure 7.4.

Before examining the formation process of the cognitive models for *pick up* in (2.1), let us consider the basic structure of cognitive models. Based on work in neuroscience (e.g., Squire & Wixted 2011) and cognitive psychology (e.g., Barsalou 1999), it is likely that the cognitive models associated with VPCs and their verbs, respectively, consist of multiple components relating to a specific action represented by them. As illustrated in the lower side of Figure 7.4, for example, the possible cognitive models to which *pick* in (2.1) provides access are as follows: the animate entity that can take hold of and move physical entities (a person), the entity that can be taken hold of and moved (any physical objects), the way of motion (physical movement from one place to another) and the direction of motion (multidirectional). It can be considered that each cognitive model includes not only specific examples (individuals, following Barsalou's terminology) but also generic examples (types). For example, in the case of an entity that can take hold of and move physical entities, not only is the specific person or animal that a language user has encountered in the world outside, but also the generic person or animal that is abstracted away among multiple specific examples, or exemplars, are included. Furthermore, as mentioned by Barsalou (2015), it is plausible to consider that both episodic and generic multimodal scenes can be produced as a result of activating all the components

[5] Concerning this, refer to the previous studies on child language acquisition (Chapter 2).

[6] Based on Tomasello (1992), it could be considered that even spatial particles such as *up* were associated with their own cognitive models in the beginning based on the fact that they were originally used to function as both verbs and particles, although the dual functioning may have been completely differentiated before the use of VPCs began.

relevant to each scene.[7]

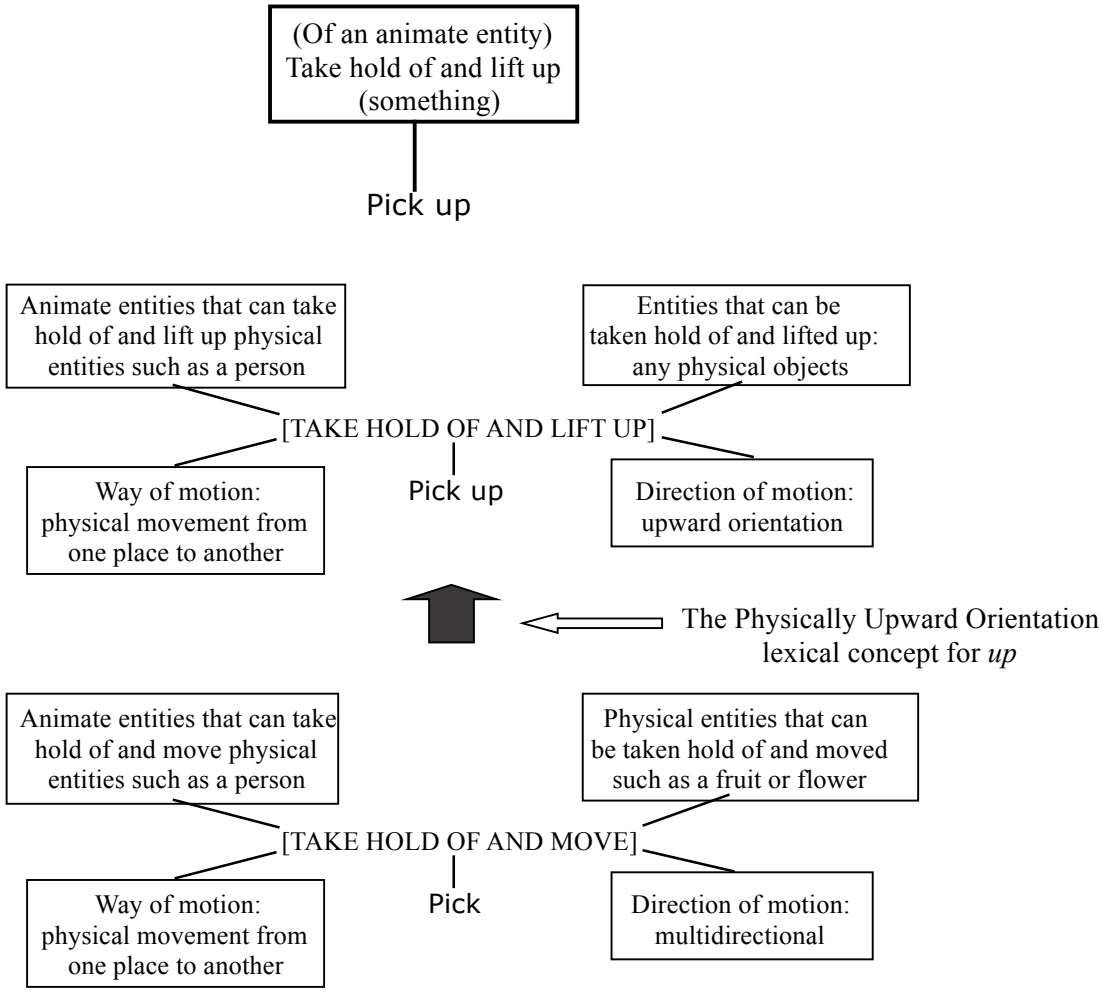

Figure 7.4. The formation process of the cognitive models for *pick up* in the utterance *The dog picked up the bone in its mouth*

I posit that the semantic representation for *pick up* is originally formed in the following order.[8] Firstly, the lexical concepts associated with *pick* and *up*, respectively, are retrieved and merged to create the lexical concept for *pick up*. Secondly, the lexical concept associated with *pick* provides access to the corresponding cognitive models. Thirdly, the interaction of the lexical concepts associated with *pick* and *up* with the cognitive models associated with *pick* gives rise to the cognitive models for *pick up*. As for (2.1), I speculate that the way in which the cognitive models for *pick up* are created is the same as for the creation of the lexical concept. To put this another way, the [PHYSICALLY UPWARD ORIENTATION] lexical concept for *up* helps a language user to focus on the upward orientation among various directions included by

[7] It may be reasonable to consider that the more each episodic or generic multimodal scene is consolidated in the mind of a language user, the stronger the connections among the neurons relating to the representation of each scene become.

[8] Due to the nature of the brain, it is likely that several processing is made at almost the same time.

the cognitive models associated with *pick*, producing the cognitive models for *pick up*. Finally, the lexical concept for *pick up* becomes connected to the corresponding cognitive models to produce the semantic representation for *pick up*.

7.3.2. Sales *picked up* last fall

Since the association of the literal lexical concept with the corresponding cognitive models for *pick up* has now been established, the formation process of the cognitive models for *pick up* in (2.2) is captured in Figure 7.5.

As illustrated in Figure 7.5, the possible cognitive models with which *pick up* in (2.2) becomes associated are as follows: the entity that can improve (abstract entities such as *sales* and *business*), the way of change (non-physical/physical change from one state to another) and the direction of change (upward orientation [from worse to better]). Similarly, each cognitive model includes not only specific but also generic examples. For example, with regard to the way of change, diverse ways of change (both specific and generic) are assumed to be included, ranging from an increase in the number of the goods that are sold to an increase in the number of sales to the brightening of the feelings of the people who contributed to the increase and so on. As for the direction of change, the possible reason that the direction from worse to better can be characterised by virtue of upward orientation is attributed to the following kind of physical scene we experience on a daily basis: The higher a building becomes, the more favourably it tends to be evaluated.

I argue that, essentially, the semantic representation for the VPC in (2.2) begins to be formed due to the association of the literal lexical concept with its corresponding cognitive models for *pick up*. In this case, however, it is likely that the [IMPROVEMENT] lexical concept for *pick up* is created and the [INCREASE IN NUMBER] and [POSITIVE ASSESSMENT] lexical concepts for *up* are activated after the cognitive models for *pick up* are formed because it seems difficult to derive/activate these lexical concepts without retrieving the corresponding multimodal information. As mentioned earlier, I posit that this usage is created in the following way: Firstly, the [TAKING HOLD OF AND LIFTING UP] lexical concept associated with *pick up* is activated. Secondly, the lexical concept for *pick up* provides access to the corresponding cognitive models. Thirdly, the semantic representation for *sales* causes a language user to retrieve the metaphorical relationship between improvement and upward movement based on the experiential correlation between an increase in number (amount) and upward movement. Since the multimodal information relating to this scene has been stored in advance, the information becomes associated with the phonological vehicle *pick up*, and the

[IMPROVEMENT] lexical concept for *pick up* is produced at the same time.

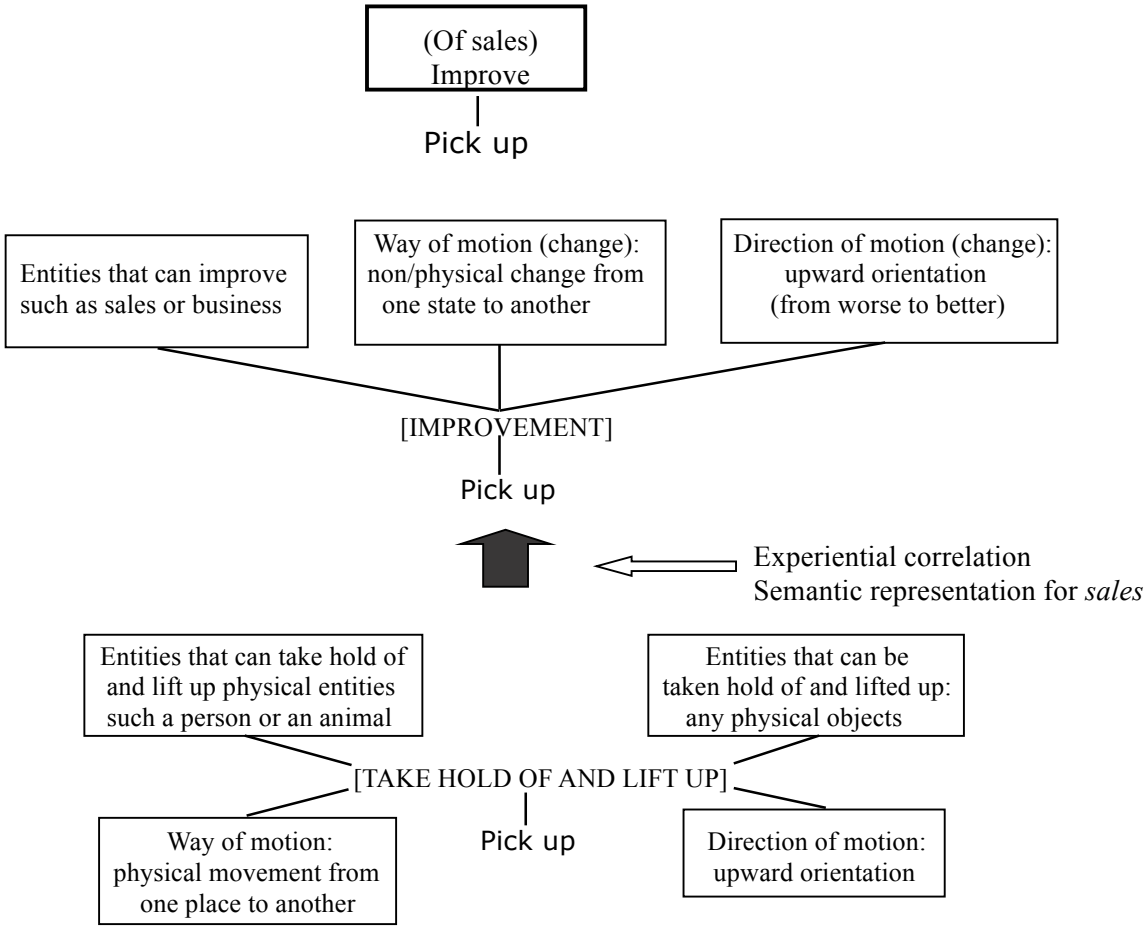

Figure 7.5. The formation process of the cognitive models for *pick up* in the utterance: *Sales picked up last fall*

7.3.3. The wind began to *pick up*

Since the association of the literal lexical concept with the corresponding cognitive models for *pick up* has now been established, the formation process of the cognitive models for *pick up* in (2.3) is captured in Figure 7.6.

As illustrated in the upper side of Figure 7.6, the possible cognitive models with which *pick up* in (2.3) becomes associated are as follows: the entity that can increase in terms of its extent (entities such as *wind*), the way of change (physical change from one state to another) and the direction of change (upward orientation [from weaker to stronger in extent]). As for the direction of change, the possible reason that the direction from weaker to stronger can be characterised in terms of upward orientation is attributed to the following kind of ubiquitous correlation whereby the stronger the wind becomes, the higher fallen leaves are brown. I argue

that the semantic representation for the VPC in (2.3) is originally formed in the same way as is the VPC in (2.2). That is, it is likely that the [INCREASE IN EXTENT] lexical concept for *pick up* is created after the cognitive models for *pick up* are formed. I posit that this usage is created in the following way: Firstly, the semantic representation for *pick up* (the literal one) is activated in the same way as in (2.2). Secondly, the semantic representation for *wind* causes a language user to retrieve the metaphorical relationship between the increase in extent and

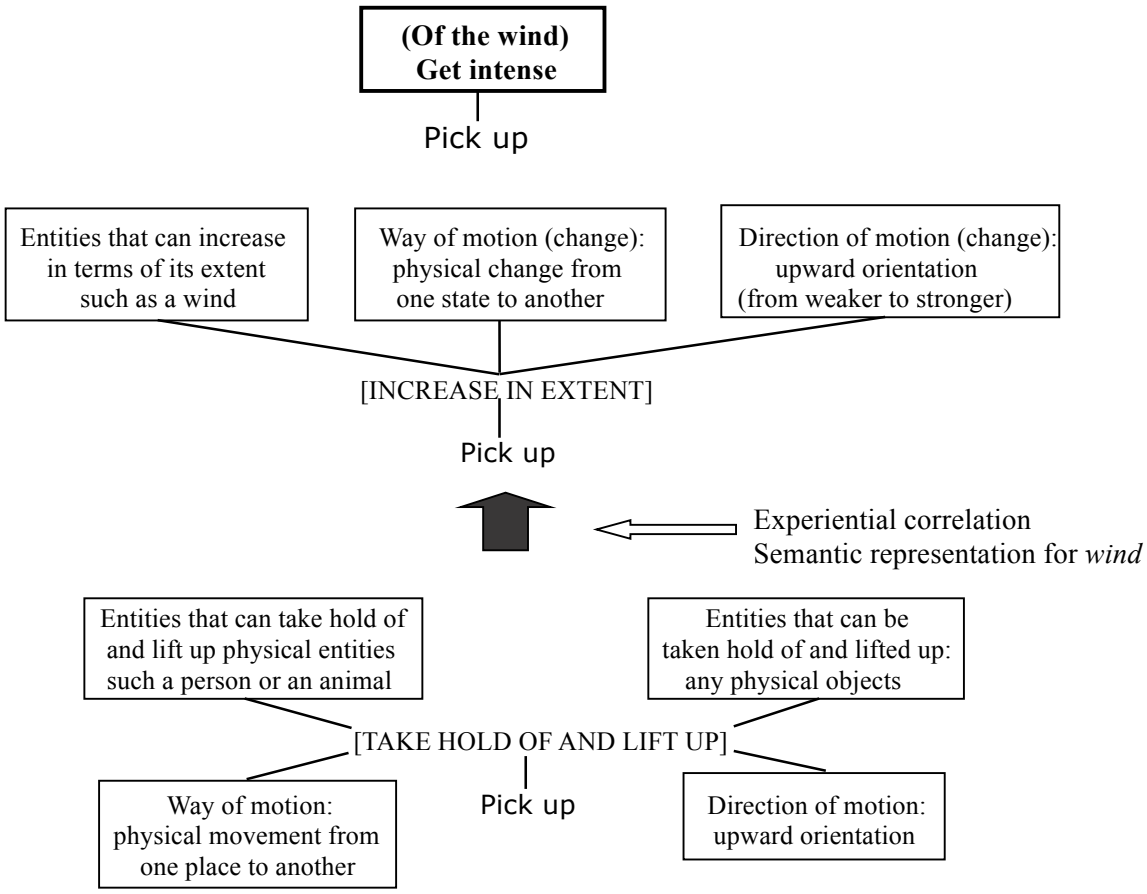

Figure 7.6. The formation process for the cognitive models of *pick up* in the utterance: *The wind began to pick up*

upward movement based on the experiential correlation whereby the stronger the wind becomes, the higher the waves in the sea become. Since the multimodal information relating to this scene has been stored in advance, the information becomes associated with the phonological vehicle *pick up*, and the [INCREASE IN EXTENT] lexical concept for *pick up* is produced at the same time.

7.3.4. I *picked up* the bedroom

Since the association of the literal lexical concept with the corresponding cognitive models for *pick up* has now been established, the formation process of the cognitive models for *pick up* in (2.4) is captured in Figure 7.7:

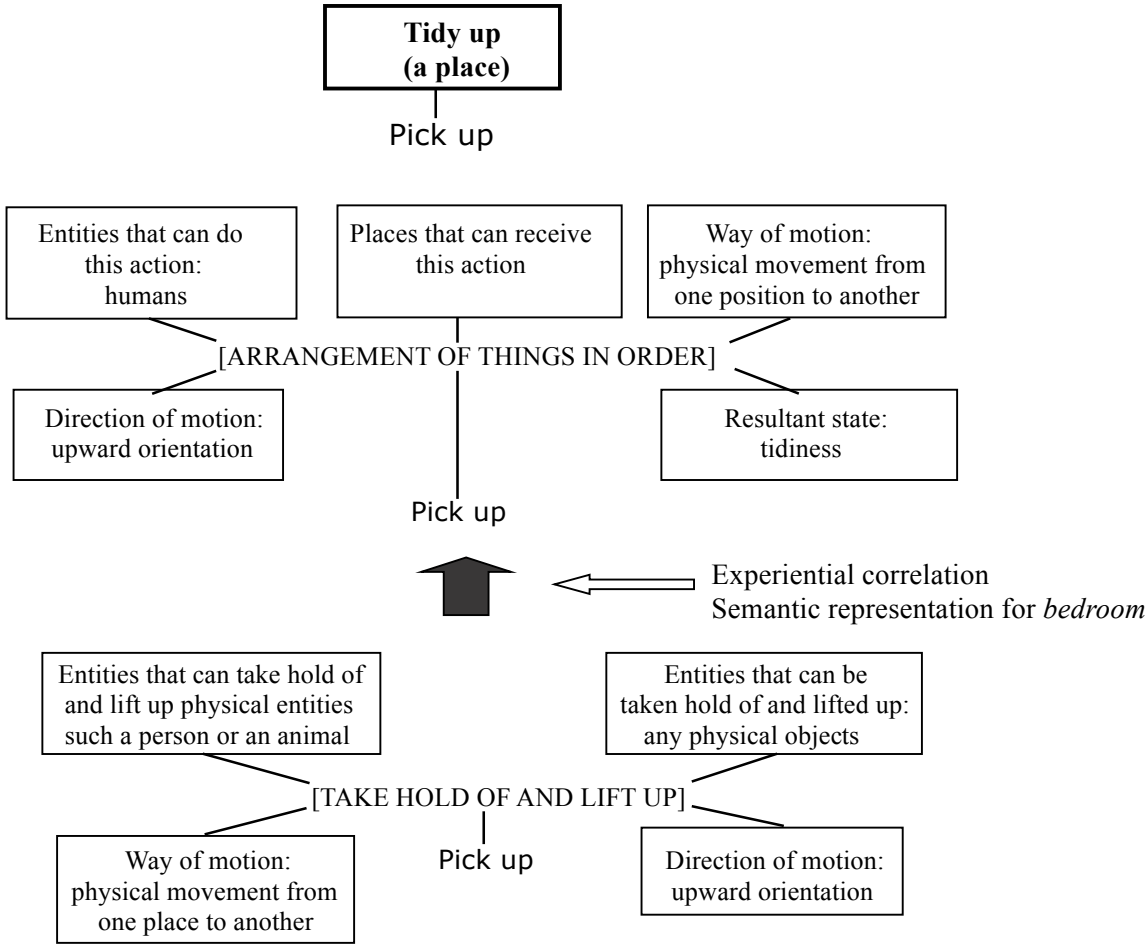

Figure 7.7. The formation process for the cognitive models of *pick up* in the utterance: *I picked up the bedroom*

As illustrated in the upper side of Figure 7.7, the possible cognitive models with which *pick up* in (2.4) becomes associated are as follows: the entity that can do this action (a person), the entity that can receive this action (a place where there are a lot of physical entities to be picked up), the way of motion (physical movement from one position to another), the direction of motion (upward orientation) and the resultant state (tidiness).

I argue that the semantic representation for the VPC in (2.4) is originally formed in the same way as are the previous instances in (2.2) and (2.3). That is, it is likely that the [ARRANGEMENT OF THINGS IN ORDER] lexical concept for *pick up* is created after the

cognitive models for *pick up* are formed. I posit that this usage is created in the following way: Firstly, the semantic representation for *pick up* (literal one) is activated. Secondly, the semantic representation for *bedroom* causes a language user to retrieve the experiential correlation that picking up physical entities in a place such as *a bedroom* often leads to the place becoming tidier or cleaner. Since the multimodal information relating to this scene is stored in advance, the information becomes associated with the phonological vehicle *pick up*, and the [ARRANGEMENT OF THINGS IN ORDER] lexical concept for *pick up* is produced at the same time.[9]

7.3.5. She just *picked up* and left

Since the association of the literal lexical concept with the corresponding cognitive models for *pick up* has now been established, the formation process for the cognitive models of *pick up* in (2.5) is captured in Figure 7.8.

As illustrated in the upper side of Figure 7.8, the possible cognitive models with which *pick up* in (2.5) becomes associated are as follows: the entity that can do this action (a person), the way of motion (physical movement from one place to another), the direction of motion (upward orientation) and the resultant state (being ready to go).

I argue that the semantic representation for the VPC in (2.5) is originally formed in the same way as are the previous uses. That is, it is likely that the [GETTING READY TO GO] lexical concept for *pick up* is created after the cognitive models for *pick up* are formed. I posit that this usage is created in the following way: Firstly, the semantic representation for *pick up* (literal one) is activated in the same way as in (2.4). Secondly, the sentential context, particularly the lexical item *leave*, causes a language user to retrieve the experiential correlation whereby picking up physical entities such as *a bag* or *key* leads to a state of being ready to go out, or a person moving in the upward orientation (that is, standing up) leads to a state of being ready to go out. Since the multimodal information relating to this scene has been stored in advance, the information becomes associated with the phonological vehicle *pick up*, and the [GETTING READY TO GO] lexical concept for *pick up* is produced at the same time.

[9] There is a possibility that other VPCs such as *tidy up* or *clean up* affect the formation of the semantic representation of *pick up* in (2.4). I will address this matter in future research.

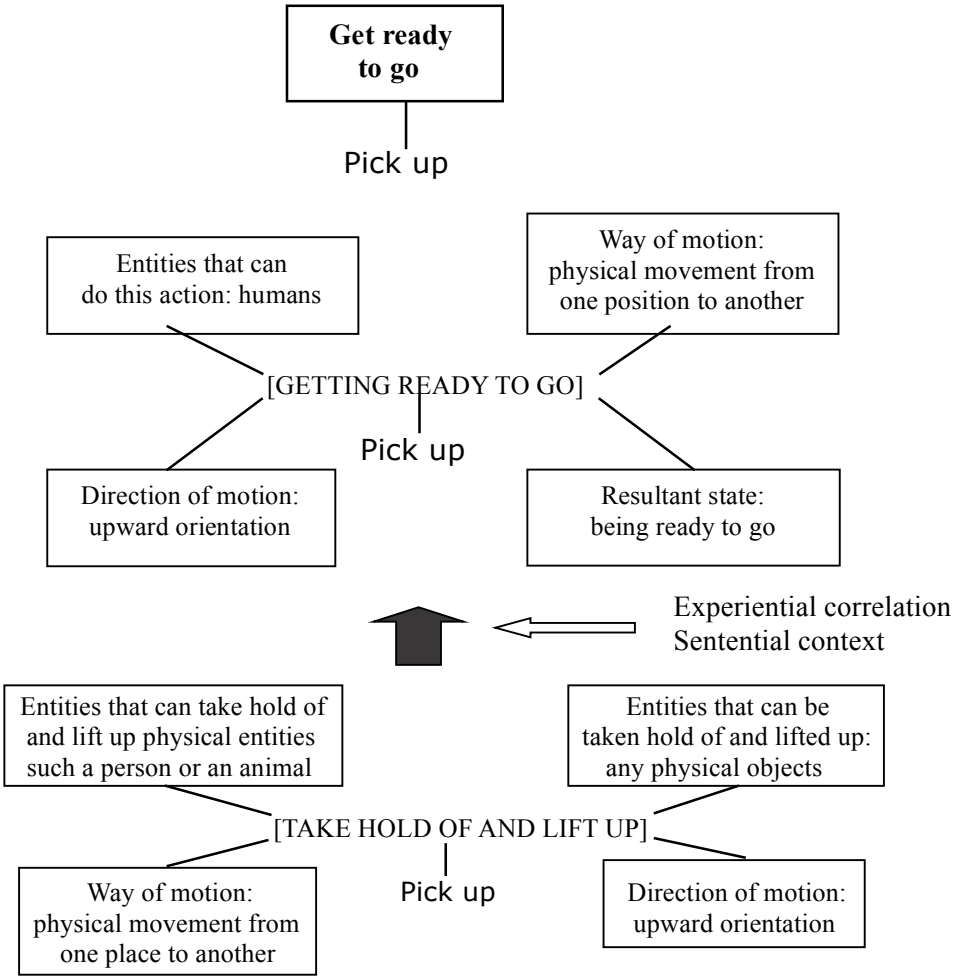

Figure 7.8. The formation process for the cognitive models of *pick up* in the utterance: *She just picked up and left*

7.3.6. Let's *pick up* the discussion tomorrow

Since the association of the literal lexical concept with the corresponding cognitive models for *pick up* has now been established, the formation process for the cognitive models of *pick up* in (2.6) is captured in Figure 7.9.

As illustrated in the upper side of Figure 7.9, the possible cognitive models with which *pick up* in (2.6) becomes associated are as follows: the entity that can do this action (a person), the entity that can be resumed after a break (any activity that can continue for a certain period such as *discussion*), the way of change (physical change from one state to another) and the direction of change (upward orientation [from a state of taking a rest to a state of starting some activity again]). The possible reason that the direction of change from a state of taking a rest to a state of restarting some activity can be characterised by virtue of upward orientation is attributed to

the daily experience in which a person takes hold of and lifts up a physical entity such as *a racket* when s/he wants to restart some activity such as *tennis*.

I argue that, essentially, the semantic representation for the VPC in (2.6) is originally formed in the same way as in the previous uses. That is, it is likely that the [RESUME AFTER A BREAK] lexical concept for *pick up* is created after the cognitive models for *pick up* are formed. I posit that this usage is created in the following way: Firstly, the semantic representation for *pick up* (literal one) is activated in the same way as in the previous instances. Secondly, the sentential context, particularly the semantic representations for *discussion* and *tomorrow* causes a language user to retrieve the experiential correlation in which picking up a physical entity such as *a knife* (upward movement) leads to the restarting of some activity such as *cooking*. Since the multimodal information relating to this scene has been stored in advance, the information becomes associated with the phonological vehicle *pick up*, and the [RESUME AFTER A BREAK] lexical concept for *pick up* is produced at the same time.

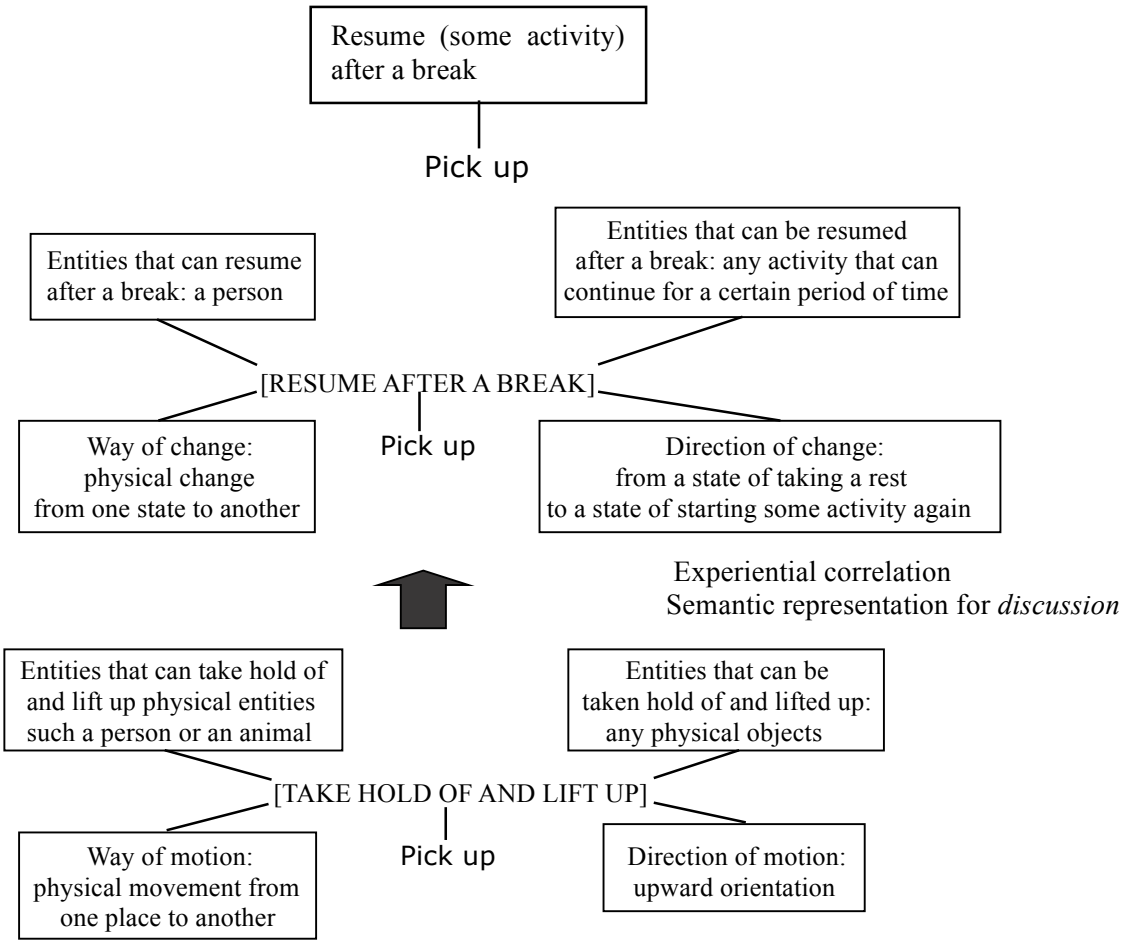

Figure 7.9. The formation process for the cognitive models of *pick up* in the utterance: *Let's pick up the discussion tomorrow*

7.3.7. Don't be reluctant to *pick up* on a bad hole

Since the association of the literal lexical concept with the corresponding cognitive models for *pick up* has now been established, the formation process of the cognitive models for *pick up* in (2.7) is captured in Figure 7.10.

As illustrated in the upper side of Figure 7.10, the possible cognitive models with which *pick up* in (2.7) becomes associated are as follows: the entity that can give up playing (a person), the way of change (physical change from one state to another) and the direction of change (upward orientation [from a state of playing to a state of not playing]). The reason that the direction of change from a state of playing to a state of not playing can be characterised

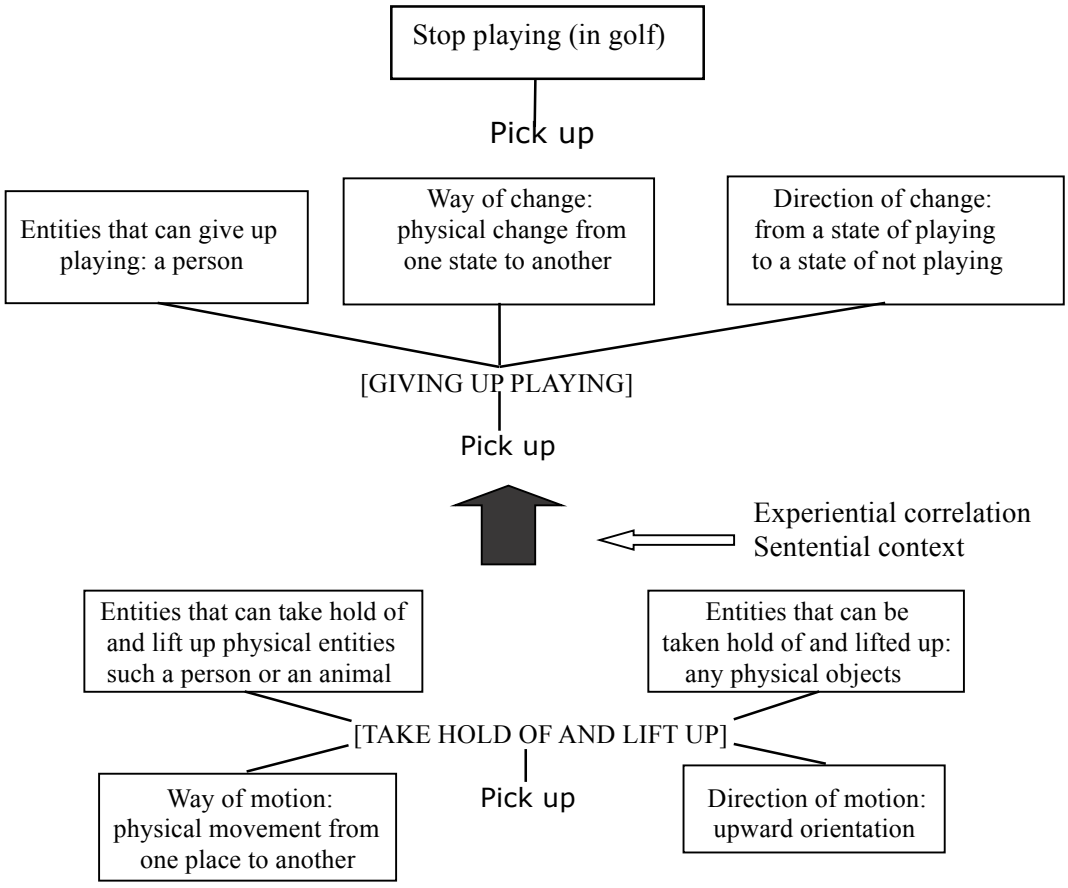

Figure 7.10. The formation process for the cognitive models of *pick up* in the utterance: *Don't be reluctant to pick up on a bad hole*

in terms of upward orientation is attributed to the experience of a person taking hold of and lifting up a ball when s/he wants to stop playing golf.

I argue that the semantic representation for the VPC in (2.7) is originally formed in the same way as in the previous instances. That is, it is likely that the [GIVING UP PLAYING]

lexical concept for *pick up* is created after the cognitive models for *pick up* are formed. I posit that this usage is created in the following way: Firstly, the semantic representation for *pick up* (the literal one) is activated in the same way as in (2.6). Secondly, the sentential context, particularly the prepositional phrase *on a bad hole*, causes a language user to retrieve the experiential correlation that picking up a ball while playing golf sometimes leads to ceasing to play. Since the multimodal information relating to this scene has been stored in advance (if the language user is familiar with golf), the information becomes associated with the phonological vehicle *pick up*, and the [GIVING UP PLAYING] lexical concept for *pick up* is produced at the same time.

7.3.8. I *picked up* French quickly

Since the association of the literal lexical concept with the corresponding cognitive models for *pick up* has now been established, the formation process for the cognitive models of *pick up* in (2.8) is captured in Figure 7.11:

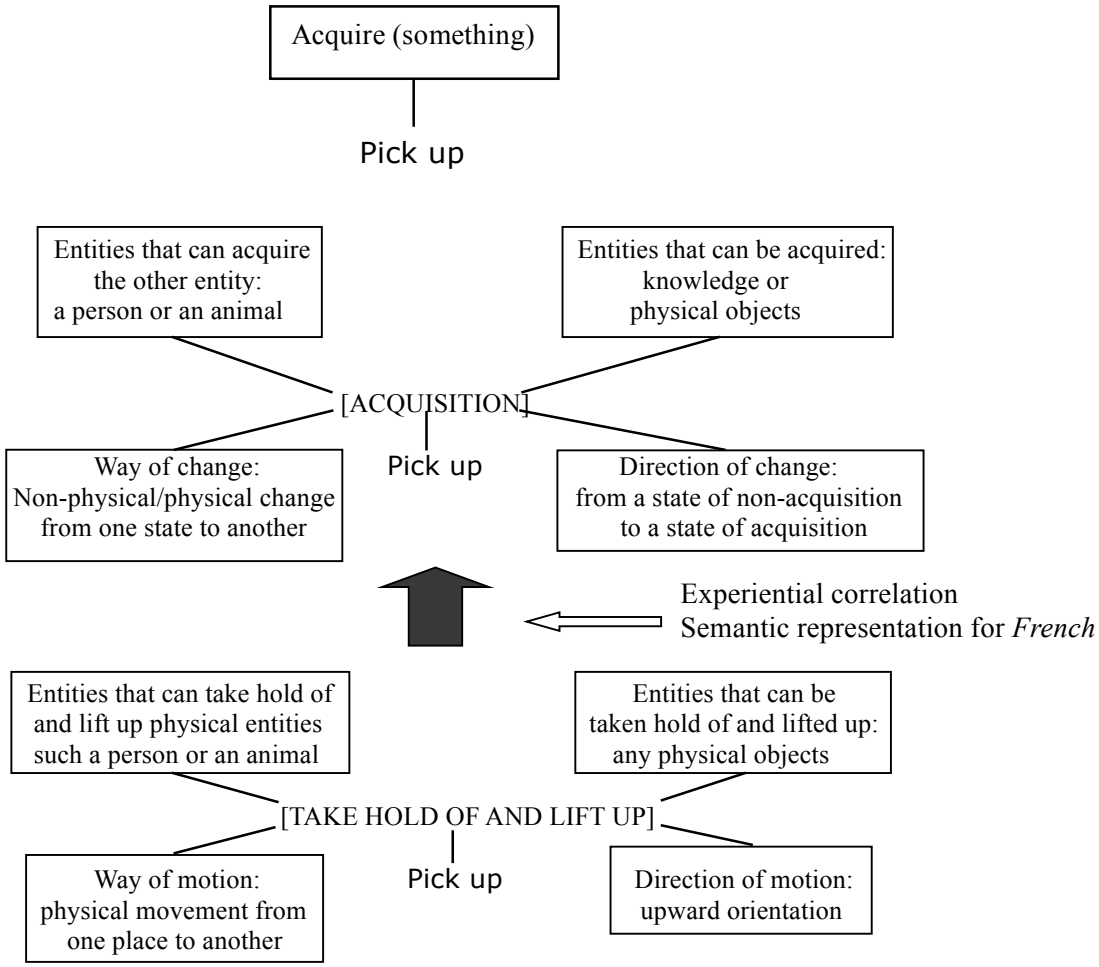

Figure 7.11. The formation process for the cognitive models of *pick up* in the utterance: *I picked up French quickly*

As illustrated in the upper side of Figure 7.11, the possible cognitive models with which *pick up* in (2.8) becomes associated are as follows: the entity that can acquire the other entity (a person or an animal), the entity that can be acquired (knowledge or physical objects), the way of change (non/physical change from one state to another) and the direction of change (upward orientation [from a state of non-acquisition to a state of acquisition]). The possible reason for the direction of change from a state of non-acquisition to a state of acquisition can be characterised in terms of upward orientation is attributed to the kind of daily experience in which, when taking hold of and lifting up a physical entity, a person can possess it.

I argue that, essentially, the semantic representation for the VPC in (2.8) is originally formed in the same way as in the previous uses. That is, it is likely that the [ACQUISITION] lexical concept for *pick up* and the [ACCESSIBILITY] lexical concept for *up* are created after the cognitive models for *pick up* are formed. I posit that this usage is created in the following way: Firstly, the semantic representation for *pick up* (the literal one) is activated in the same way as in (2.7). Secondly, the semantic representation for *French* causes a language user to retrieve the experiential correlation whereby picking up physical entities such as *coins* sometimes leads to the possession thereof. Since the multimodal information relating to this scene has been stored in advance, the information becomes associated with the phonological vehicle *pick up*, and the [ACQUISITION] lexical concept for *pick up* and the [ACCESSIBILITY] lexical concept for *up* may be produced at the same time.

7.3.9. I've *picked up* a cold

Since the association of the literal lexical concept with the corresponding cognitive models for *pick up* has now been established, the formation process for the cognitive models of *pick up* in (2.9) is captured in Figure 7.12.

As illustrated in the upper side of Figure 7.12, the possible cognitive models with which *pick up* in (2.9) becomes associated are as follows: the entity that can contract an illness (a person or an animal), the type of illness that can be contracted up by a person or an animal (germs that cause flu, for example), the way of (imagined) motion (invisible movement of a germ from the outside to the inside of the body) and the direction of motion (multidirectional).

I argue that, essentially, the semantic representation for the VPC in (2.9) is originally formed in the same way as the in previous uses. That is, it is likely that the [CONTRACTING AN ILLNESS] lexical concept for *pick up* and the [ACCESSIBILITY] lexical concept for *up* are created after the cognitive models for *pick up* are formed. I posit that this usage is created in

the following way: Firstly, the semantic representation for *pick up* (the literal one) is activated in the same way as in (2.8). Secondly, the semantic representation for *cold* causes a language user to retrieve the metaphorical relationship between the possession of germs and upward movement based on the kind of experiential correlation in which picking up physical entities such as *coins* sometimes leads to the possession thereof. Since the multimodal information relating to this scene has been stored in advance, the information becomes associated with the phonological vehicle *pick up*, and the [CONTRACTING AN ILLNESS] lexical concept for *pick up* and the [ACCESSIBILITY] lexical concept for *up* may be produced at the same time.

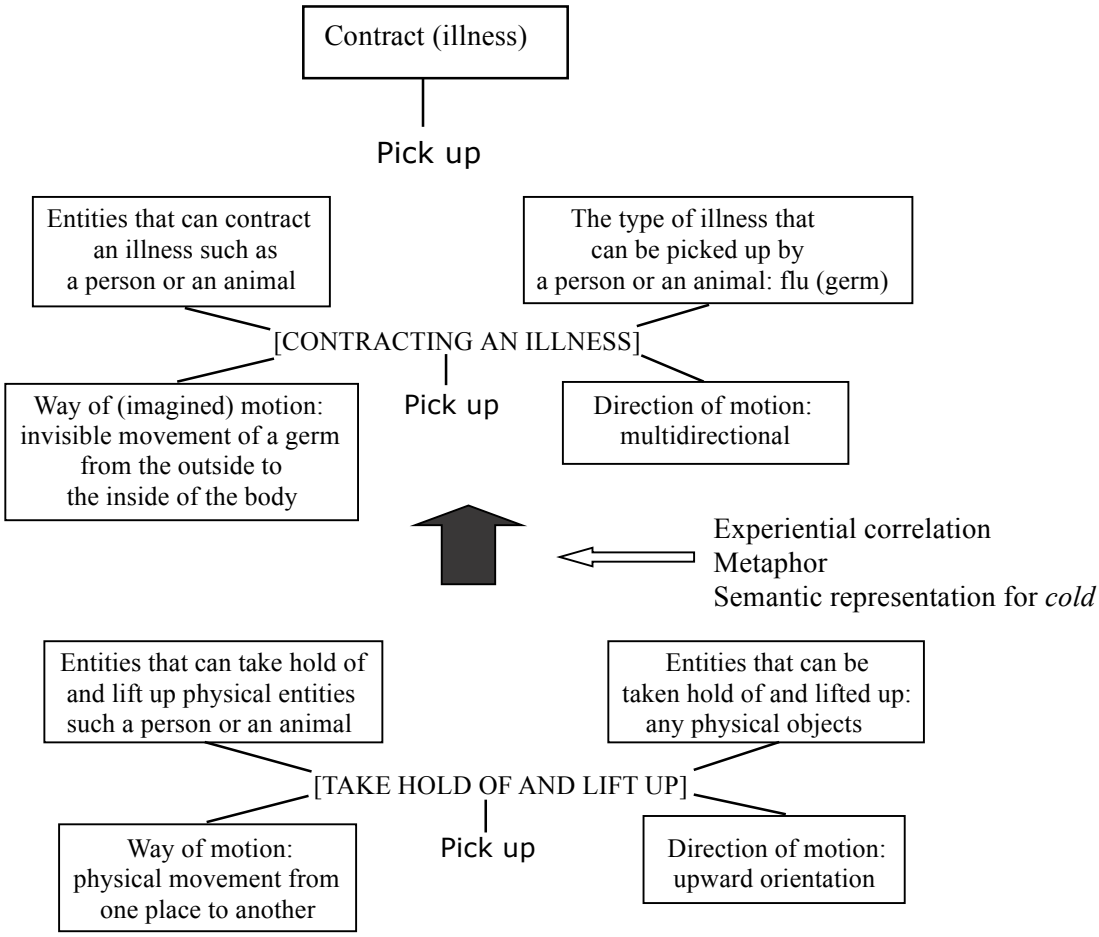

Figure 7.12. The formation process for the cognitive models of *pick up* in the utterance: *I've picked up a cold*

7.3.10. I *picked up* the harbour lights

Since the association of the literal lexical concept with the corresponding cognitive models for *pick up* has now been established, the formation process for the cognitive models of *pick up* in (2.10) is captured in Figure 7.13.

As illustrated in the upper side of Figure 7.13, the possible cognitive models with which *pick up* in (2.10) becomes associated are as follows: the entity that can detect a visual stimulus (a person or an animal), the entity that can be detected (any visual image), the way of change (physical change from one state to another) and the direction of change (from a state of being non-visible to a state of being visible). The possible reason that the direction of change from a state of being non-visible to a state of being visible can be characterised by virtue of upward orientation is attributed to the kind of daily experience in which, when a person picks up a physical object, s/he can see it more clearly.

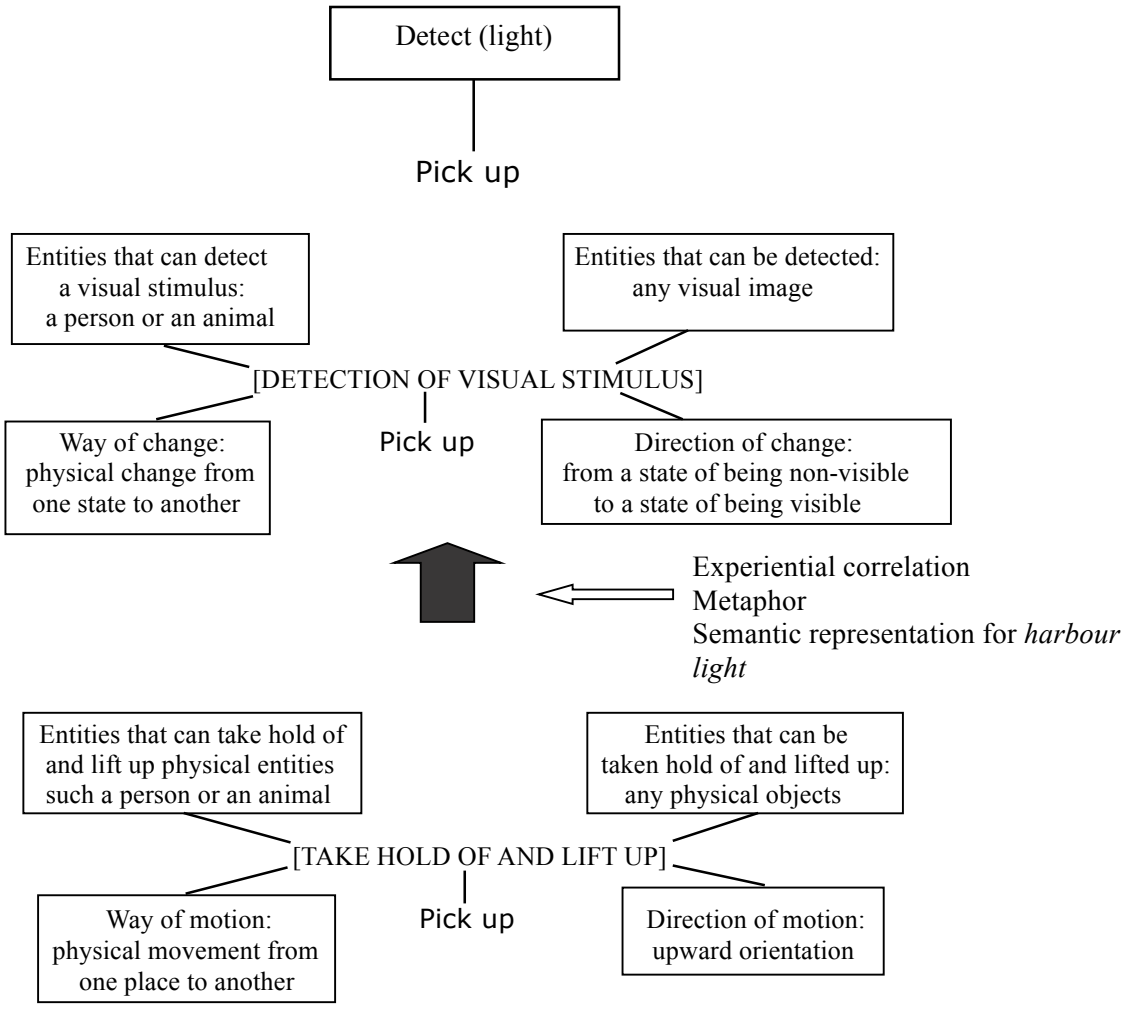

Figure 7.13. The formation process for the cognitive models of *pick up* in the utterance: *I picked up the harbour lights*

I argue that, essentially, the semantic representation for the VPC in (2.10) is originally formed in the same way as in the previous instances. That is, it is likely that the [DETECTION OF VISUAL STIMULUS] lexical concept for *pick up* and the [VISUAL PROMINENCE] lexical concept for *up* are created after the cognitive models for *pick up* are formed. I posit that this usage is created in the following way: Firstly, the semantic representation for *pick up* is activated in the same way as in (2.9). Secondly, the semantic representation for *harbour light* causes a language user to retrieve the type of experiential correlation whereby picking up physical entities (upward movement) leads to visual prominence. Since the multimodal information relating to this scene has been stored in advance, the information becomes associated with the phonological vehicle *pick up*, and the [DETECTION OF VISUAL STIMULUS] lexical concept for *pick up* and the [VISUAL PROMINENCE] concept for *up* may be produced at the same time.

7.3.11. Did the microphone *pick up* that sound?

Since the association of the literal lexical concept with the corresponding cognitive models for *pick up* has now been established, the formation process for the cognitive models of *pick up* in (2.11) is captured in Figure 7.14.

As illustrated in the upper side of Figure 7.14, the possible cognitive models with which *pick up* in (2.11) becomes associated are as follows: the entity that can detect an auditory stimulus (a person or an animal), the entity that can be detected (any auditory stimulus), the way of change (physical change from one state to another) and the direction of change (from a state of being non-audible to a state of being audible). The possible reason that the direction of change from a state of being non-audible to a state of being audible can be characterised in terms of upward orientation is attributed to the kind of experience as when someone picks up an animal such as a cat, s/he can hear it more clearly.

I argue that, essentially, the semantic representation for the VPC in (2.11) is originally formed in the same way as in the previous uses. That is, it is likely that the [DETECTION OF AUDITORY STIMULUS] lexical concept for *pick up* and the [AUDITORY PROMINENCE] lexical concept for *up* are created after the cognitive models for *pick up* are formed. I posit that this usage is created in the following way: Firstly, the semantic representation for *pick up* is activated in the same way as in (2.4)-(2.10). Secondly, the semantic representation for *sound* causes a language user to retrieve the experiential correlation whereby picking up physical entities (upward orientation) such as *cats* enables a person to hear them more clearly. Since the

multimodal information relating to this scene has been stored in advance, the information becomes associated with the phonological vehicle *pick up*, and the [DETECTION OF AUDITORY STIMULUS] lexical concept for *pick up* and the [AUDITORY PROMINENCE] concept for *up* may be produced at the same time.

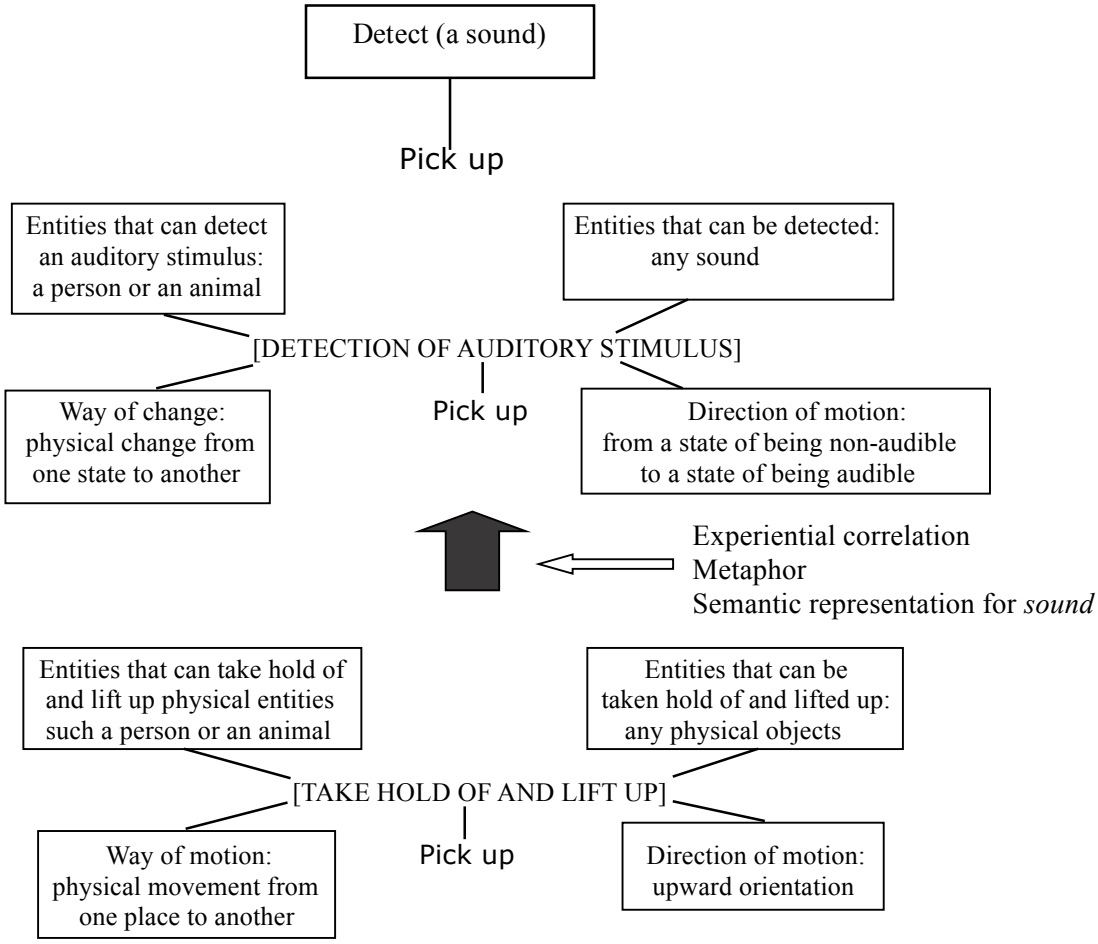

Figure 7.14. The formation process for the cognitive models of *pick up* in the utterance: *Did the microphone pick up that sound?*

7.4. Summary

This chapter has been concerned with accounting for the motivation for the distinct lexical concepts associated with an identical VPC focusing on *pick up*. The main conclusion arising from this study is as follows.

The architecture of LCCM Theory, particularly with regard to the relationship between lexical concepts and the corresponding cognitive models, allows us to understand the derivational motivations for the distinct lexical concepts associated with an identical VPC.

More specifically, it was revealed that each distinct lexical concept associated with *pick up* is originally formed via the activation of the relevant lexical concepts associated with *pick* and *up*, respectively, and the access to the corresponding cognitive models due to the experiential correlation that can be retrieved via its sentential context, sometimes with the assistance of metaphor.

What should be noted here is that some derivational processes may be affected not only by experiential correlations but also by conceptual metaphors, while others may not. This follows because according to work on the acquisition of conceptual metaphors (e.g., Siqueira & Gibbs 2007), the complete conceptual metaphor system has not been acquired by the approximate age of seven. That is to say, it may be possible to think that the derivational processes of more abstract meanings that are assumed to be acquired after the age of seven are affected by conceptual metaphors.

With regard to the lexical concepts associated with *up* within VPCs, there is a possibility that they are abstracted away in various kinds of VPCs that have the same types of meanings. For example, the [CEASE TO INTERACT] lexical concept associated with *up* may be produced after a language user acquires several kinds of VPCs that share the same type of meaning, such as *pick up*, *give up* or *throw up*, rather than being produced by only one VPC. However, we do not know whether the lexical concept that can be associated with *up* within a given VPC exists when the lexical concept for the overall VPC is produced. This topic will be addressed in future research.

Chapter 8 Conclusion

The purpose of this thesis was to propose a better mechanism by which a distinct usage associated with an identical verb-particle constructions (VPCs) is originally formed in the mind of a contemporary language user. In the following, I reintroduce a number of research questions that were laid out at the beginning of this thesis:

i) What kinds of lexical concepts associated with a verb and particle contribute to the informational characterization of the overall VPC?
ii) What kinds of lexical concepts associated with a verb and particle distinguish one informational characterization of the same VPC from another?
iii) What kinds of cognitive models associated with a verb and particle contribute to the informational characterization of the overall VPC?
iv) How do the lexical concepts associated with a verb and particle provide access to the corresponding cognitive models to produce the informational characterization of the overall VPC?
v) How does the utterance context influence the achievement of the informational characterization of the overall VPC?

As for i) and ii), in order to better identify the lexical concepts associated with the spatial particle *up*, and their derivational processes in the mind of a contemporary language user, I examined the historical development of the semantics of *up* in the first place (Chapters 4 and 5). What is revealed from the detailed historical analysis is as follows. Firstly, there are thirteen distinct lexical concepts that came to be associated with the spatial particle *up* historically. Among them, the [PHYSICALLY UPWARD ORIENTATION] lexical concept is the primary one from which all the other lexical concepts are derived directly or indirectly. As for their derivational processes, mainly three types were identified. They are summarized in the following:

a) A given usage of *up* is derived from a physical scene involving upward orientation;
b) A given usage of *up* is derived from the physical scene encoded by the combination of *up* with a particular verb within VPCs;
c) A given usage of *up* is derived as a consequence of the long co-occurrence with a particular verb within VPCs;

Then, building upon the detailed observations of the historical development of *up*, I proposed the semantic network of *up* and predicted the derivational processes of each lexical concept in the mind of a contemporary language user (Chapter 6). From my analysis, it seems reasonable to think that the derivational processes of each lexical concept in the mind of a contemporary language user basically reflects historical development. Concerning the methodology to identify distinct lexical concepts associated with *up*, I utilized the Formal and Semantic Selectional Criteria proposed by Evans (2009).

After having determined the distinct lexical concepts for *up*, I attempted to elucidate the motivations for the distinct lexical concepts associated with an identical VPC focusing on *pick up* (Chapter 7). In order to establish the mechanism whereby each distinct lexical concept is originally formed, employing the same methodology as in the case of *up*, I identified the distinct lexical concepts for *pick* and *pick up*, respectively, in the first place. I then proposed the derivational process of each distinct lexical concept associated with *pick up*. What is revealed from the detailed examination is that the creation of every lexical concept starts from the activation of the [TAKING HOLD OF AND MOVING] lexical concept for *pick* and the [PHYSICALLY UPWARD ORIENTATION] lexical concept for *up*, that is, the primary lexical concepts associated with a verb and particle in a VPC. After activation, the lexical concept for *pick* provides access to the corresponding cognitive models. Thereafter, each sentential context or relevant lexical item helps a language user retrieve an experiential correlation or metaphorical relationship substantiated by a particular experiential correlation, giving rise to cognitive models and the relevant lexical concept for *pick up*.

The points that this study improves upon with respect to previous accounts of VPCs are that, for one, as for Lindner (1981), the perspective I took here, that is, the clear distinction between the information associated with a verb and spatial particle, with the assistance of the methodology put forth by Evans (2009), allows us to identify the distinct lexical concepts for *up* in a more precise way, which in turn leads to a better characterization of the semantics of VPCs. Besides this, the detailed historical analysis of the semantics of *up* enables prediction of the derivational processes of each distinct lexical concept for *up* in a more precise way, which in turn leads to a better characterization of the derivational process of each lexical concept associated with an identical VPC. As for Morgan (1997), the view I took here that meaning extension occurs via gradual changes characterized in terms of experiential correlation, sometimes with the aid of metaphors, allows us to predict the derivational process of each distinct lexical concept associated with an identical VPC in a more precise

way. This accords with the research results of grammaticalization. Regarding Goldberg (2012), the perspective I took here facilitates clearly identifying the motivations among distinct lexical concepts associated with an identical VPC and its constituents, a verb and particle, respectively. Concerning historical research (e.g., Hiltunen 1983; Thim 2012), the perspective I adopted enables better predicting the historical development of the distinct lexical concepts associated with a lexical item, such as spatial particles. As for work on child language acquisition, the view taken on facilitates determining the mechanisms by which children acquire a novel usage associated with a VPC.

Concerning future research, it may be possible to substantiate the existence of distinct lexical concepts for *up*, or identify the mechanism whereby each distinct lexical concept associated with an identical VPC is processed in the mind, using psychological techniques, such as fMRI or ERP.

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